Department of Industrial Engineering and Management

Productivity as a Competitive Edge of a Service Firm

Theoretical Analysis and a Case Study of the Finnish Banking Industry

Esa Viitamo

Aalto University

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Productivity as a Competitive Edge of a Service Firm – Theoretical Analysis and a Case Study of the Finnish Banking Industry

Esa Viitamo

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Abstract

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Abstract

In the wake of the 'new economy', the productivity of services gains a growing interest in research, business management and industrial policy. Based on earlier theoretical analyses and new insights, this thesis contributes to the synthetized economic framework for service productivity. Its theoretical part develops further the integrative view between the macroeconomic and the socio-economic regimes of service productivity. The specific contribution of the thesis is called the value creation approach (VCA). It examines the relation between technology and productivity in a market-based interaction by a service firm and its client. VCA highlights that the principal goal of the service firm is to enhance the value of the firm through productivity. Service productivity is composed of scale-efficiency and effectiveness. The growth and the mode of the service productivity depends on a firm's technology. The value creation approach provides a descriptive framework for the analysis of productivity, which is then supplemented with an explanatory framework. This framework consists of theories and approaches which characterize intangible technology of the service firm through the more tangible dimensions of strategy and organization. The literatures on strategic management and organizational design are particularly relevant here. The analysis shows that the resource-based and the structuralist views can be used as an integrated framework to examine service strategy. Through the inter-linkages between technology, resources, and strategy the integrated framework highlights the determinants of service productivity. Organization theory and transaction cost economics suggest that organization is an integral part of service technology, which needs to be aligned with the strategy of the service firm.

The theoretical arguments advanced in the thesis are illustrated via a comparative case study of the Finnish universal banking industry. The case study consists of both secondary and primary data. The former (industry studies, reviews, statistics etc.) is used to analyse specific aspects of the technology and the corporate goals in the banking industry. The findings indicate that the descriptive VCA offers a coherent and workable framework for the analysis and the measurement of service productivity. The interviews in the case banks Nordea and Svenska Handelsbanken suggest that universal banks have clear differences in their productive regimes – a concept adopted in this thesis to refer to the 'managerial perception' of how scale-efficiency and effectiveness are balanced in business operations. Nordea's regime is based on the scale-efficiency of banking processes and products whereas Svenska Handelsbanken's regime draws predominantly on the effectiveness of the service offerings.

Keywords Service, productivity, value-creation, scale-efficiency, effectiveness

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Tiivistelmä

Uuden talouden myötä palveluiden tuottavuudesta on tullut strategisesti yhä kiinnostavampi ilmiö. Tämä näkyy palvelututkimuksessa, yritystoiminnassa ja elinkeinopolitiikassa. Aiempia ja uusia teoreettisia näkemyksiä hyödyntäen tämä väitöskirjatutkimus kehittää palvelutuottavuuden synteettistä tarkastelukehikkoa. Perinteisen talousteoreettisen ja sosio-ekonomisen koulukunnan esittämien argumenttien pohjalta väitöstutkimuksen teoreettinen osa hahmottelee palvelutuottavuuden analyysiin ns. arvonluontinäkökulman. Se tutkii teknologian ja tuottavuuden suhdetta markkinoilla kilpailevan palveluyrityksen ja tämän asiakkaan näkökulmasta. Arvonluontinäkökulman mukaan palveluyrityksen tavoite on yrityksen arvon kasvu tuottavuuden avulla. Palvelutuottavuus koostuu skaalatehokkuudesta ja vaikuttavuudesta. Palvelutuottavuuden kasvu ja muoto riippuvat yrityksen teknologiasta. Arvonluontinäkökulma tarjoaa palvelutuottavuuteen deskriptiivisen tarkastelukehikon. Sitä täydennetään väitöstutkimuksessa selittävällä tarkastelukehikolla, jonka teoriat ja näkökulmat mahdollistavat yrityksen aineettoman palveluteknologian määrittämisen strategian ja organisaation aineellisemmilla piirteillä. Keskeistä kirjallisuutta ovat strateginen johtaminen ja organisaatioiden tutkimus. Väitöstyö osoittaa, että palveluyrityksen strategiaa voidaan tarkastella integroimalla resurssiperustaisen ja rakenteellisen koulukunnan näkökulmat. Teknologian, resurssien ja strategian välisten kytkentöjen avulla integroiva näkökulma selittää palvelutuottavuutta ja sen osatekijöitä. Organisaatio- ja transaktiokustannusteorian argumenttien valossa voidaan päätellä, että organisaatio on keskeinen osa palveluyrityksen teknologiaa, joka on sovitettava yhteen strategian kanssa.

Väitöstutkimuksen teoreettisia argumentteja havainnollistetaan vertailevalla tapaustutkimuksella Suomen yleispankkitoiminnasta. Tapaustutkimuksessa hyödynnetään aiempaa ja tutkimuksessa tuotettua lähdeaineistoa. Aiempaa materiaalia on hyödynnetty teknologian ja yritystoiminnan tavoitteiden analysoinnissa pankkitoimialalla. Havainnot pankkialalta osoittavat, että arvonluonnin deskriptiivinen tarkastelukehikko soveltuu hyvin palvelutuottavuuden mittaamisen ja analysoimiseen. Tapaustutkimukseen valittujen kahden pankin Nordean ja Svenska Handelsbankenin haastattelut osoittavat, että niiden tuottavuusregiimit poikkeavat selvästi toisistaan. Tuottavuusregiimillä tarkoitetaan yritysjohdon näkemystä skaalatehokkuuden ja vaikuttavuuden merkityksestä pankin operatiivisessa toiminnassa. Nordean regiimissä korostuu tuotannon ja palveluiden skaalatehokkuus. Svenska Handelsbankenin regiimissä korostuu puolestaan palvelutarjooman vaikuttavuus asiakkaalle.

Avainsanat Palvelu, tuottavuus, arvon luonti, skaalatehokkuus, vaikuttavuus

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Foreword

The focus of this thesis - *service productivity* and the *productivity of a service firm* – originates from my practical experience in the field of service research and from my theoretical interests in industrial economics. On the practical side, the most influential were the studies on the servitization of industrial clusters that I conducted at the Research Institute of the Finnish Economy (ETLA) and the productivity benchmark of industries - my main duty at the Ministry of Employment and the Economy. While all these analyses indicated that productivity of services is central for the economic growth and prosperity, it was not possible to tackle the more fundamental issues and the origins of competitiveness: what is *service productivity* in the first place and how is it *managed by a service firm?*

On the theoretical side, this study extends and refines the cross-disciplinary approach in economics that was the methodological basis in my Licentiate thesis at University of Helsinki, as well. The rationale of the cross-disciplinary economic approach rests on the critique that economic theory simplifies the reality. It is true that theoretical simplification may cause biases, but in my view they can be mitigated with the down-to-earth perspectives of firm's strategy and organization. Such a view owes much to the scientific reasoning in organizational economics. To see whether and how the inter-disciplinary framework works in the analysis of service productivity, I had no alternative to writing this monograph.

The conduct of this study was contingent on the invaluable contributions of several people and organizations. First of all, I want to express my greatest gratitude to my supervisor, Hannele Wallenius and to may instructor Marja Toivonen. Without exaggeration it can be said that Marja made it possible; she has inspired my academic thinking on services ever since we met. I could not imagine more prestigious professors as my opponents than Jon Sundbo and Faïz Gallouj. I want to thank them warmly. I am thankful to the reviewers Christiane Hipp and Faïz Gallouj for their valuable comments and suggestions that improved the contents of the thesis.

I wish to thank Lappeenranta University of Technology and Professor Markku Tuominen for the research funding I received within the Finnish Doctoral Program in Industrial Engineering. I am also grateful to several people at TEKES – the Finnish Funding Agency for Technology and Innovation for their support at various stages of the project. I was privileged to have several in-depth discussions on banking productivity with the highly knowledgeable executives: Risto Makelä and Harry Peltonen in Svenska Handelsbanken and Ari Kaperi and Olli-Petteri Lehtinen in Nordea, to mention a few. I want to thank them all.

Espoo, June 2012

Esa Viitamo

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1 Introduction

1.1 The rationale

The most prominent feature of the present economic and societal evolution is the expansion of the service sector. Therefore, the fundamental puzzle of how the performance of services and service firms ought to be developed and measured becomes increasingly topical. Whereas more than two thirds of the gross national product originates from the service sector in the advanced economies, the statistical indicators on the productivity growth show that this sector is lagging behind the other main business sector: manufacturing. From the policy point of view, the duality between the 'stagnant services' and the 'dynamic manufacturing' is seen as a major concern. A closer look at the industry statistics reveals, however, that service industries show a marked diversity in the business characteristics, performance and growth. To some extent the statistical growth of services is due to outsourcing of service activities by the companies in other industrial sectors. This suggests that a wealth of the present service functions have existed long before their commercialization and emergence in the present institutional and technological forms. These stylized facts stress the urgency of new initiatives in the analysis of service productivity and the productivity of a service firm.

The progress in the *conceptualization* of services and their performance (Gadrey et al., 2002; Djellal et al., 2008) is shadowed by the fact that the scholarly debate on service productivity still lacks a coherent economic theory. To date, the field of service productivity and competitiveness has been dominated by two strands of applied economics. The 'official' view called the *macroeconomic paradigm* (Metcalfe and Miles, 2006) builds on the statistical data of firms and industries which enable quantitative surveys on the productivity of services and other industrial sectors. On the basis of deductive theorizing and the *microeconomic* foundations of a firm, the macroeconomic paradigm posits that the productivity of services and manufacturing can be measured and compared unequivocally from the producer's perspective. These premises and the consequent policy implications are challenged by the *socio-economic paradigm* (cf. Gagrey and Gallouj, 2002). Based on inductive theorizing of service management, the socio-economic paradigm maintains that services are intrinsically different from manufacturing. As the service outcome and performance result from a complex, interactive process between the producer and the user, the relevant dimensions of users' productivity are overshadowed by

the industry statistics. Hence, the socio-economic analysts argue that the statistical indicators do not measure the overall productivity of services adequately.

While credible in their own right, the two competing paradigms have been developed separately from each other. *As a distinct research gap, this separation constitutes the theoretical and empirical rationale for the present thesis.* The guiding principle in the theoretical analysis is the *integration* of the macroeconomic and the socio-economic perspectives to a *synthesized* framework. It draws on the strengths of the two constituent paradigms and the underlying assumptions on the economic behaviour of firms and individuals that more realistically reflect the characteristics of the human nature. The synthesized framework provides an integrated conceptualization of productivity reconciling the productivity concept as it is defined in the macroeconomic and the socio-economic paradigms. The synthesized framework also incorporates *organizational* and *managerial* perspectives, which enables a coherent analysis of service productivity and the competitive advantage of a service firm. Through these extensions the analysis is aimed to benefit service innovation, corporate management and industrial policy, more generally.

The theoretical analysis based on a 'synthesis' needs some qualifications. Owing to the diversity of perspectives and the evolving integrative view within the socio-economic paradigm, *the theoretical contribution in this thesis can be seen as a further development of the socio-economic paradigm*. However, the marked distinction between the premises of the two examined paradigms and their *adaptation* to a new, alternative way of tackling service productivity suggests that a more 'objective' interpretation of synthesis is required here. For instance, the key assumption of the profit-seeking tactics, which guide the managerial decisions in value creation and productivity are implicit, but in practise largely overlooked within the existing paradigms. Moreover, the integrative approach in this thesis refines the established interpretations of productivity in both paradigms. In the synthesis here productivity is used to *summarize the overall performance of service*, which is a compound effect of scale-efficiency and effectiveness.

The theoretical analysis of the thesis is applied in and illustrated via an empirical case study of the *financial products and services* that are produced and delivered by the *universal banking industry*. The choice of the banking industry for the object of the empirical study is based on specific industry

characteristics. *First*, commercial banks are among the largest and the most influential players in the advanced economies, and in the global markets. Yet, the academic interest in the banking sector, particularly from the perspective of industrial organization, has been markedly low. *Second*, the productivity of the universal banks influences the operational efficiency of the real economy[1]. Banks perform a central service function in the intermediation of the financial inputs and services. *Third*, for an industrial analyst, the universal banking industry offers an 'empirical laboratory' to examine the business activities that build on service-dominant logic and goods-dominant logic[2].

1.2 Research questions and goals

The thesis contributes to the economic analysis of service productivity and business performance, which can be classified as specific fields in *industrial economics and organization*. The synthesized perspective to a firm's competitiveness and productivity aims to enhance the knowledge on the technological characteristics of service activities and their relations to business performance both from the producer's and the user's perspectives. On aggregate, the analysis builds on the relationship between the key layers (drivers) of the competitiveness of a service firm. The *organizational design* of a firm reflects the competitive strategy chosen by the firm, whereas the *strategy* highlights the intangible service *technology* and the characteristics of service productivity pursued by the firm. These layers define the overall *structure* (see Figure 1) and the *foci* of the thesis. The *objectives* of the thesis derive from the following *research questions*:

1. How can the main theoretical approaches to service productivity, strategy and organization be reconciled to build a synthesized framework for the productivity of a service firm?

    1.1. How can the presently separate macroeconomic and socio-economic views be reconciled to build a synthesized (descriptive) approach to the analysis of the productivity of a service firm?

[1] Based on theoretical and empirical considerations, Schmidt (2004) notes that there are a number of reasons to believe that strong banks are not only important for the banking industry itself, but also for the respective national economies. In a destructive way this was demonstrated by the global financial crisis that proliferated globally in 2008.

[2] For the discussion of the service-dominant logic and the goods-dominant logic see Vargo and Lusch (2008). While the financial sector (including universal banks) is *officially classified in the service sector*, many of the characteristics of banks' offerings and the organizational structures suggest the prevalence of goods-dominant logic.

1.2. How can the synthesized (descriptive) approach be supplemented with the (explanatory) approaches of strategic management and organizational design?

2. Is the synthesized framework empirically applicable, and what kinds of specifications and alternative approaches does it reveal in the productivity of the universal banking industry?

2.1. What kinds of specifications and alternative approaches can be found in the goals, technology and productivity, when the synthesized (descriptive) framework is applied in the universal banking industry?

2.2. What kinds of specifications and alternative approaches can be found in strategic management and organizational design when the synthesized (explanatory) framework is applied in the universal banking industry?

In regard of the research question 1, *the theoretical objective of the thesis is to contribute to the development of a synthesized economic framework for the analysis of the productivity of a service firm.* This framework is called *the value creation approach (VCA).* The descriptive part of VCA (the research question 1.1) outlines the premises that characterize the productive activities of a service firm. These premises are manifested in a) the economic goals of the firm, b) the characteristics of service productivity and c) the measurement of the productive performance by the service firm. The value creation approach builds on the ´entrepreneurial´ view of a service firm and its management, whose primary objective is to enhance the long-term profitability and hence the value of the firm. The attainment of the objectives depends on the firm's success in the value creation tactics employed with respect to its customers and markets. The objective of the thesis is further to show how the descriptive productivity analysis can be incorporated in the explanatory perspectives of strategic management and organizational design – including organization theory and transaction cost economics (the research question 1.2). These disciplines are used to operationalize the conceptualization of the descriptive VCA and to identify the key drivers of technology and productivity that highlight the competitive advantage of a service firm.

In regard of the research question 2, *the empirical objective of the thesis is to examine and illustrate the value creation approach in the context of universal banking, and to develop methodological approach which is applicable to the empirical analysis of the productivity of service businesses, more generally.* Based on industry-specific literature and other secondary empirical sources, the objective is to show that the characteristics of technology, productivity and the measurement of productive performance within the universal banking industry conform to the premises of the descriptive value creation approach (the research question 2.1). On the basis of the case study of two Nordic universal banks, Nordea and Svenska Handelsbanken, the objective is further to show that the strategy and the organizational models of the case banks can be examined within the explanatory framework of strategic management and organizational design (the research question 2.2). The managerial view implemented in the empirical analysis is aimed to contribute to the explanatory analysis of service productivity and competitiveness of a service firm, more generally. This provides practical implications for successful innovation, management and industrial policy in services.

1.3 Outline

The sequential structure and flow of the thesis is illustrated in Figure 1. Along with the description of the overall methodology and the theoretical constituents Section 2 provides the conceptualization of service and productivity. *Theoretical analysis* in Sections 3 and 4 develops a synthesized framework for service productivity and the competitive advantage of a service firm. *Empirical illustration,* which encompasses Section 5, implements the value creation approach and the related strategic and organizational perspectives within the Nordic universal banking industry. Through the comparative case study, the empirical illustration also refines the theoretical framework and develops an organizational approach for the empirical analysis of service productivity and the competitive advantage of a service firm. While interdependent, the theoretical and empirical analyses serve different purposes. As a separate entity, the former aims to provide a theoretical contribution in its own right, whereas the latter focuses on the specific characteristics of the banking industry, which are relevant in addressing the productive performance of banking business. Accordingly, the empirical analysis in the thesis focuses on the *sub-set* of issues raised in the theoretical analysis. A more detailed overview of the flow of the study and contents of the research entities is provided below.

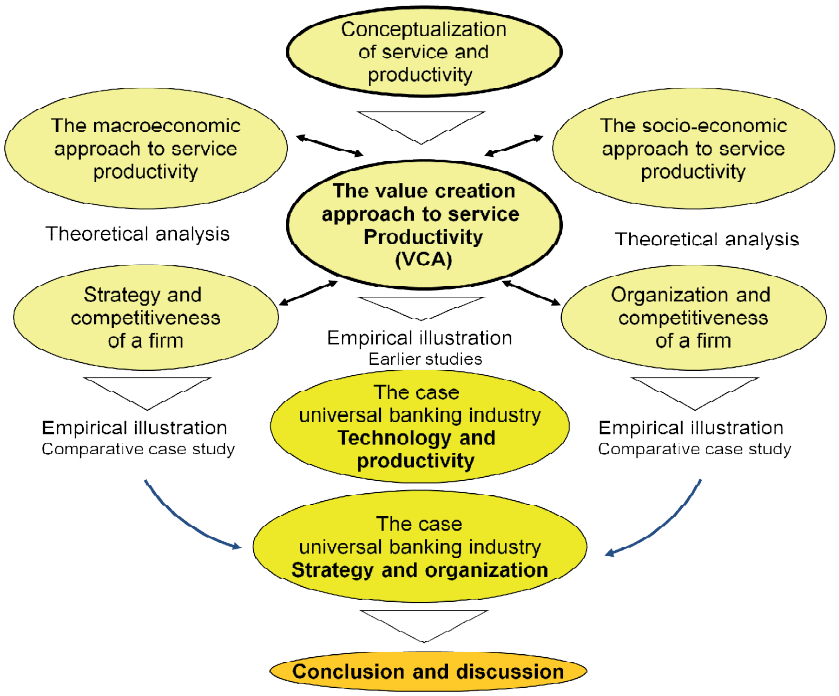

Figure 1. The structure and flow of the thesis.

Section 2 discusses the research epistemology, the construction of the theoretical analysis and the key characteristics of service and productivity. Pointing out that *perceptions* of services and their productive performance are influenced e.g. by the techno-economic progress in the economy, Section 2.4 comes up with *synthesized definitions*, which are applicable to the production and the delivery activities of a service firm. The conceptualization contributes to the theoretical analysis and to new perspectives of service productivity, which are compatible to the analysis of competitive advantage of a service firm. Theoretical analysis in Section 3, which highlights the technological premises of service productivity, draws on the implications of the two established schools of service productivity. The 'macroeconomic approach' that is discussed in Section 3.3, employs statistical and quantitative techniques in the policy-driven analyses of industries, whereas the qualitative 'socio-economic approach' that is discussed in Section 3.4 looks into the productivity of a service episode from the dual perspective of the supplying firm and the customer. Building on the premises of these two approaches and the modelling systems of standard microeconomics, Section 3.5 develops a synthesized, descriptive

framework for service productivity and the productivity of a service firm. The constructed value creation approach (VCA) provides the theoretical basis for the explanatory analysis, which draws on strategic management and the organizational design of a service firm.

As with the theorizing of service innovation (cf. Metcalfe and Miles, 2006), it is argued here that the theoretical analysis of service productivity cannot be isolated from the actual (real) context where services are produced, delivered and consumed. Consequently, the descriptive value-creation approach, which synthesizes the main paradigms of service productivity, is complemented with the synthesized, explanatory framework of competitive advantage including strategy and organization. Building on the interrelated layers of a firm's productivity (see above), this extended value creation framework enables a *holistic* inquiry into the determinants of service productivity. Hence, as productivity and profitability lay at the heart of a firm's success, a logical extension of the descriptive productivity analysis is to incorporate the descriptive value creation perspectives into the related theories of a firm's competitiveness. This extension is conducted in Section 4.

Section 4.2 focuses on the two complementary approaches to strategic management in the context of a service firm. While the productivity of a firm's processes is not regarded as the key focus in the two main schools of the *structuralist approach* and the *resource-based view*, it is highlighted that an integrated approach to strategic management provides enriched perspectives to service strategy and the productivity of a service firm. Section 4.3 points out that organizational design is a prerequisite for the effective utilization of the competitive strategy and the technology of a service firm. As with the discussion of strategic management, the analysis of organizational design utilizes two interlinked approaches. The first is the general *organization theory,* which puts forward the prevalence of organizational adaptation (contingency). The second is *transaction cost economics*. Based on the equivalent logic of organizational adaptation, transaction cost economics provides a normative extension of the arguments of the organization theory.

Section 5 illustrates empirically the theoretical arguments of VCA. Section 5.2 describes the methodology, including the key characteristics of the comparative case study, and data used in empirical analysis of the thesis. The illustration and the application of the value creation approach is conducted in *two stages*. On the basis of the earlier studies, quantitative data and other secondary

material of the banking industry, Section 5.3 examines the specific industry characteristics and approaches that are relevant for the illustration of the descriptive value creation approach. The generic aspects of banking technology, the managerial practises in assessing banking productivity and performance, as well as the implications of the affiliated economic studies are the main topics discussed here. Supplementary evidence on the industry drivers and the characteristics of banking technology, productivity and competitive advantage is provided in Appendix 2.

Section 5.4 illustrates the strategic and organizational (explanatory) extension of the value creation approach via a comparative case study of two Nordic universal banks: *Nordea and Svenska Handelsbanken.* The case study provides methodological implication for the empirical analysis of service productivity as well. The section begins with an introductory overview of the core activities of a bank, the main aspects related to the boundaries of the firm, and the strategic role of the information and communication technologies (ICT). The case study focuses on the key characteristics of corporate *strategy*, *organizational models* and the underlying dimensions of *corporate governance* in the case banks. These characteristics are summarized in the banks' *productive regim*es, which reflect the relative importance of scale-efficiency and effectiveness in the corporate strategy and the banking operations. A central source of data here is the interviews of the operative management in the two case banks. More detailed results of the company interviews are provided in Appendix 3. Section 6 sums up and evaluates the main results and directs the way to future research.

2 Theoretical constituents and conceptualization

2.1 Introduction

Most research methodologies, particularly in social sciences, include some elements of subjectivity as well as elements of rigorous procedures (objectivity). This duality is also put forward in Gummesson (2006) in the context of qualitative research: while the processing of numbers may be objective to some extent, the interpretation of statistical tables is primarily subjective and so are the decisions to act on the data. This implies that in social sciences the outcome of the research process is highly contingent on the *quality* of the collected data, the ways how methodologies are implemented, and the subjective *interpretation* of the results by the researcher. As a brief highlight of the main concepts, *methodology* is a general guideline of how research proceeds, including methods, procedures, and the techniques that are used to collect and analyze empirical data. *Method* is a theoretically informed way for collecting and analyzing empirical data (Denzin and Lincoln, 2005)[1]. Building on these premises this section discusses the methodology, the theoretical constituents and the main characteristics of the key concepts that are used in the thesis. Section 2.2 establishes the *research epistemology* of the thesis and addresses its key attributes relative to other approaches. *Construction of the theoretical analysis* in Section 2.3 presents the key aspects of the constituent theories and disciplines, which the synthetized value creation approach (VCA) in Sections 3.5 and 4 builds on. This involves the principles how the constituent theories and disciplines are used in VCA. The *conceptualization of service and productivity* in Section 2.4 summarizes the key characteristics of service and productivity and the related concepts used in VCA. The collection and the analysis of data in the industry case study are discussed in Section 5.2.

2.2 Research epistemology

In general, epistemology is an axiomatic view on the essence of knowledge, its sources and limits (Silverman, 2010). The epistemology and the scientific positioning of the thesis can be defined as *post-positivism and critical realism*. In deviation to 'classical' positivism, where reality can be apprehended objectively, and the universal facts are independent of the observer, post-positivism assumes objective

[1] Methodology further consists of three basic elements. These elements are research epistemology, the principles of the theory construction and the principles of the theory validation (Denzin and Lincoln, 2005; Creswell, 2003).

reality that is apprehended imperfectly and probabilistically[2]. In similar vein, critical realism asserts that while the goal of science is to get right about reality, which exists independent of the observer, the goal can never be achieved completely. This follows from the human imperfections that reality cannot be known with full certainty, and that the interpretation of reality may differ in time and contexts (Danemark et al., 2002). The post-positivistic epistemology of this thesis involves some aspects of *hermeneutics* as well. Hermeneutics refers to a necessary condition of interpretation and understanding. As human actions are changing the reality, understanding of human intentions becomes a necessity. It is the understanding of the human actions that is the foundation for all knowledge in social sciences (Eisenhardt and Graebner, 2007). Within the hermeneutic paradigm, new knowledge is generated through induction from empirical cases. In particular, hermeneutic paradigm is beneficial when the scientific focus is on a new field of research, which needs a new theory development and which lacks statistical data and easily structured research questions (Gummesson, 2006; Olkkonen, 1994).

The overall logic and the methodology of generating knowledge in the thesis are based on the *analytical* approach (Arbnor and Bjerke, 1997). In the analytical approach, the reality is the objective, and the enhanced knowledge is independent of the observer. The other methodological approaches are the actors approach and the systems approach. Stressing the importance of understanding and interpretation, the actors approach is used in the thesis as a supplementary means of inference. This implies that the knowledge is 'as independent of the observer (the researcher) as possible'. On aggregate, the theoretical analysis rests on the assumption that the objective reality equals to the sum of the realities of the constituent theories (Arbnor and Bjerke, 1997). This enables the control and reduction of subjective interpretation by the analyst (Olkkonen, 1994). The research methodology of the thesis employs *abduction,* or abductive logic, which accounts for the inter-dependence between theory construction and implementation, In general, abduction is a way of generating new ideas and

[2] *Post-positivism* has developed through the criticism of positivism. Positivism assumes that legitimate knowledge can be found from experience. According to the knowledge claim of positivism, research produces facts and accounts that correspond to an independent reality. It is value free and prioritizes observation, empiricism and deduction (Arbnor and Bjerke, 1997). The key scientific method is experiment, which reflects the assumption that only things that are measurable quantitatively can be dealt with. *Critical realism* agrees with positivism that there is an observable world independent of human consciousness. At the same time, it suggests that knowledge about the world is socially constructed. In economics, for instance, critical realism directs attention to structures, mechanisms, powers and capacities that explain the observed phenomena of economic life and thus provides a more profound understanding of the subject matter of economics (Fleetwood, 1999; Popper, 1963). In economic research critical realism often draws on *retroduction.* In deviation to induction or deduction, retroduction is a move from the level of the phenomenon identified to a different 'deeper' level in order to explain the phenomenon, to identify the causal mechanism responsible (Lawson, 1999).

hypotheses through the co-implementation of inductive and deductive reasoning. Deduction rests on the assumption that the theory is the primary source of knowledge and on the basis of the theory the researches can deduce hypotheses which are subjected to empirical study (Eriksson and Kovalainen, 2008). Inductive methodologies in contrast, assume that the primary source of knowledge is empirical research, which generate theories. Resulting from the proliferation of the multi-disciplinary approaches in social sciences, induction and deduction are often used iteratively, and in different phases of the research. Deduction is used to evaluate the hypotheses and induction for justifying them with empirical data (Schwandt, 2001). Eisenhardt and Graebner (2007) suggest that inductive and deductive logics are mirrors of one another. Inductive theory building from cases produces new theory from the data, while deductive theory testing completes the cycle by using data to test theory.

Within the abductive setting of the thesis, induction is manifested in the empirical illustration on the basis of the empirical case study of the universal banking industry. In that case the empirical findings contribute to the refinement of the argument of the theoretical analysis[3]. The empirical application of the theoretical framework, which is the deductive part of the abduction, is based on *appreciative* theorizing (qualitative testing) as defined in Nelson and Winter (1982). In deviation to quantitative testing of theoretical propositions, the appreciative method examines qualitatively the implications derivable from the theory. Nelson and Winter (1982) posit that when economists are constructing or teaching a theory *per se*, or reporting the results of empirical work designed to test a particular aspect of theory, the theoretical style is stark, logical and formalized. In contrast, when economists are undertaking applied work that is of interest for policy reasons, or are explaining to an audience of interest why certain economic events happened, theoretical ideas tend to be used less formally and more as a means of organizing analysis. A workable theory defines the economic variables and the relationships that are important to understand, gives a language for discussing these, and provides a mode of acceptable explanation. In its role in providing a framework for appreciation, a theory is a tool of inquiry, and in skilful applied research that tool is used flexibly, bent to fit the problem, and complemented by any other tools that happen to be available and that appear to be useful (*ibid*).

[3] It is essential to stress that the inductive element here is *weaker* than in the theory building from empirical cases, which is the idea behind the *constructed theory*. The similarity of the approaches is clear, however. As noted by Eisenhardt and Grabner (2007) a major reason for the popularity of and relevance of theory building from case studies is that it is one of the best (if not best) of the bridges from rich qualitative evidence to mainstream deductive research. Theory-building research using cases answers research questions that address 'how' and 'why' in unexplored research areas particularly well.

2.3 Construction of the theoretical analysis

This section outlines the general aspects of the *constituent theories and disciplines and how they are utilized* in the theoretical analysis in Sections 3 and 4. In deviation to empirical research, theory is rarely based on a specific method but it utilizes abstract principles of logic, inference and reasoning. Theoretical contributions are usually based on the existing theories and paradigms. This holds for the theoretical analysis here as well. The outline of the synthetized framework in this thesis is based on the *stylized fact* that the overriding objective of an 'entrepreneurial' service firm is to enhance the profitability and the value of the firm. Accordingly the rationale for using these specific theories and disciplines as the constituents of the theoretical analysis is that they are all concerned with *a firm's value creation and productivity*. Via the managerial decisions on the prices of the input and outputs, strategy, the scope of activities and organization, these complementary approaches can also be used to explain the growth and the modes of service productivity. For instance, *service management* is usually concerned with the generation of high customer value. This represents a special case in the firm's of objective to maximize the long-term profits in the *standard neoclassical economics*. While *strategic management* is primarily concerned with the long term profitability of a firm, this objective is reducible to the technological characteristics of production, productivity and hence the productive strategy. Organizational design, which builds on the arguments of the *organization theory* and *transaction cost economics*, can also be seen as way to enhance service productivity. An improved organizational 'fit' (consistency) with the firm's strategy enables better allocation of resources and lower transaction costs of the firm. Through improved productivity (growth and mode), organizational fit is conducive to higher value for the firm and the customer. On aggregate, the theoretical basis of the value creation approach can be defined as a *cross-disciplinary managerial approach within industrial economics*.

2.3.1 The main constituents of the descriptive value creation approach

The descriptive value creation approach draws on two constituent disciplines. The first is (neoclassical) *economics,* which lies at the core of the macroeconomic school of service productivity. In the applied economics, the neoclassical tradition is considered as the mainstream (textbook case) in the analysis of productivity of firms and industries. As a field of inquiry in the social sciences, economics is focused on the relations between production, distribution, and consumption of goods and services. Based

mostly on deductive logic and formal presentation, economics aims to explain how economies work and how economic agents interact in the presence of scarce resources. *Scarcity* means that available resources are insufficient to satisfy all wants and needs. In the absence of scarcity and exclusive uses of the available resources, there is no economic problem. Therefore, economics involves the study of economic choices which are affected by incentives and resources[4]. A textbook distinction is made between *microeconomics* (Kreps, 1990; Varian, 1984), which examines the economic behaviour of agents (individuals and firms) and *macroeconomics* (e.g. Dornbusch and Fischer, 1984), which deals with the performance, structure, and the functioning of the economic systems of nations and regions, or the entire world. Economic aggregates include e.g. national income and output, the unemployment rate, and price inflation. Macroeconomics also studies the effects of monetary policy and fiscal policy as well the determinants of the long-term levels and the growth of national income and the aggregate productivity. The determinants of productivity growth include capital accumulation, technological change and the growth of the labour force. Microeconomics is concerned with households and firms, how they make decisions (choices) to allocate limited resources in the markets of goods or services, and how these decisions affect, and are affected by the market conditions. Theoretical modelling is in many cases based on the assumption of the perfect markets[5]. In the neoclassical theory, regularities are explained by methodological individualism, where aggregate economic phenomena result from the behaviour of a 'representative' agent. Hence, the statistical monitor of economic growth and productivity of industries is based on the specific assumptions on firms' technology and the marginal productivities of the resources. The prevalent methods in the empirical analysis of productivity are econometrics and the growth accounting framework.

In general, neoclassical economics provides the descriptive VCA with the *analytical* framework and the underlying theoretical assumptions. The main contributions of neoclassical economics and the affiliated theory of finance to the development of VCA in the thesis are the 1) assumption of scarcity, 2) the assumptions on the behaviour of the economic agents, and 3) the measurement of productivity. The assumption of maximization behaviour in the presence of scarcity is used in modelling the

[4] Alternatively, scarcity implies that not all of society's goals can be pursued at the same time. *Trade-offs* needs to be made of one good against others.

[5] This is a strong assumption, which is usually relaxed in the study of *industrial organization* (e.g. Tirole, 1989). As a central field in the applied microeconomics, industrial organization focuses on the strategic behaviour of firms, the structure of markets and their interactions. In general, industrial organization adds to the perfectly competitive model the real world frictions such as limited information, transaction cost, costs of adjusting prices, government actions, and barriers to the entry of new firms. It also considers how firms are organized and how they compete in the imperfect markets.

objectives and the constraints of service firms and their customers. In particular, the assumption of the scarcity of the productive resources implies that there exists a trade-off between effectiveness and scale-efficiency in the production of a service (see Section 3.5). Hence, at the maximum level of productivity, effectiveness cannot be increased without a decrease in scale-efficiency, given the technology and the fixed amount and quality of resources. Moreover, the microeconomic model of service productivity developed here rests on *three supplementary assumptions*. First, economic agents have rational preferences over the outcomes that can be identified and associated with subjective value. Second, individuals who maximize utility and firms which maximize profits act independently on the basis of full and relevant information. Third, economic equilibria are used as solutions of agents' maximization problems. While simplistic, these assumptions enable an illustrative analysis of the co-determination of producer's and the user's productivity. The measurement of the productive performance of a service firm is based on the index which relates the indicator of the output (the financial value of service outcome) to the indicator of inputs (the cost of the resources). Derivable e.g. from the neoclassical theory of a firm, the output-input ratios are widely used in the macroeconomic analysis of labour productivity and the multifactor productivity of industrial sectors. The macroeconomic approach to service productivity is discussed at further length in Section 3.3.

The second constituent discipline of the *descriptive* value creation approach is *service management*, which lies at the core of the socio-economic school of service productivity. In comparison to the neoclassical economics (the macroeconomic approach), the theoretical basis of the socio-economic school and service management shows higher heterogeneity. Among the various schools and disciplines are service marketing, service quality management, supply chain management, service operations management, and service innovation. A significant part of the research in service management is normatively oriented, to enhance the overall performance of a service and the profitability of a service firm. These goals are thought to be attained through the co-employment of the firm's technological, relational and organizational assets. Service marketing, for instance, focuses on the long-term management of customer relationships through a proactive customer service, customer involvement in the production process and the management of service quality (Gummesson, 1998). This shows an analogy with the more general approach of total quality management (TQM)[6]. Similarly,

[6] TQM is a management philosophy that seeks to integrate all organizational functions (marketing, finance, design, engineering, and production, customer service, etc.) to focus on meeting customer needs and organizational objectives.

service innovation research, which aims to generate best practices to boost business profitability, can be seen as a specific field of general innovation management research (see e.g. Tidd and Hull, 2003). Whereas the research in service innovation apply generally positivistic and hermeneutic paradigms, the inductive modelling of service productivity in service management draws extensively on empirical case studies.

The main contribution of service management is the *conceptual* framework, which is rooted in the observed realities of the service economy and business. A wealth of the academic literature in service management stresses the distinctiveness of service activities with respect to manufacturing. Among the main attributes of services are intangibility, perishability (non-storability), inseparability of production and delivery, the simultaneity of delivery and consumption, and the limited replicability. Service management looks into the service production as a *socio-economic phenomenon*, where services with their specific attributes evolve through the firm's internal and external processes and the interaction with the clients. Service production takes place typically in an *open system*, where multiple processes and objectives need to be coordinated simultaneously. The specific characteristics of services have rendered service productivity and its characterization through hermeneutic models a central issue (e.g. Zeithaml et al., 1985; Gummesson; 1988; Parasuraman, 2002). Service co-production, especially when production and consumption coincide, provides the main rationale for addressing producer's and customer's productivities separately (Parasuraman; 2002; Johnston and Jones, 2004). The above insights on the service processes and outcomes lay the basis for the socio-economic view on service productivity. The socio-economic approach to service-productivity is discussed at further length in Section 3.4.

2.3.2 The main constituents of the explanatory value creation approach

The theoretical basis of the productivity of a service firm in this thesis is *extended* from the *descriptive* framework to the *explanatory* framework including strategic and organizational perspectives. Assuming that a firm's management is rationally oriented, service technology, strategy and organization are mutually consistent. In that case, *strategy* of a service firm reflects the managerial choices with respect to the service *technology,* which is characterized generally by the descriptive analysis in Section 3.5. Similarly, if consistent, the strategy of a service firm reflects the *organizational*

characteristics and the structure of the service firm. Given the stylized fact that the principal aspect of the technology of a service firm is the organization itself, the intangible characteristics of service productivity can be addressed through the more tangible characteristics of the firm's organization and strategy. Hence, the inclusion of the perspectives of strategic management and organizational design *links the descriptive analysis of service technology and productivity to the observed real world phenomena that manifest and explain managerial choices on technology and productivity.* This is also expected to provide strong and practical implications for the competitive management of services. The main constituents of the explanatory (extended) value creation approach are highlighted in the brief presentations below.

Strategic thinking is integral part of human behaviour and firm's management[7]. *Strategic management* is a field of inquiry with rich traditions of research and teaching in business schools (e.g. Ansoff, 1965; Andrews, 1971; Buzzell and Gale, 1987; Porter, 1985). Based on hermeneutics and inductive reasoning, the theory construction in strategic management is firmly grounded in contested and successful business practices. Hence, codification, teaching and expanding the knowledge of effective managerial practises benefits not only the profit seeking enterprises but the wealth creation in the market-based economies more generally[8]. S*trategic management* involves drafting, implementing and evaluating cross-functional decisions that will enable an organization to achieve its long-term *objectives* (David, 1989). More generally, it is a *process* of specifying the organization's mission, vision and objectives, developing policies and plans, which are designed to achieve the objectives, and then allocating resources to implement the policies and plans (Johnson and Scholes, 1993). In the context of competitive markets a firm's strategy aims to create competitive and sustainable advantage over rivals. Strategic management can be used to *explain* why firms with a given technology pursue a particular tactics such as productivity.

[7] According to Porter (1980) every firm competing in an industry has a competitive strategy, explicitly or implicitly. The strategy may have been developed through a deliberate planning process or it may have evolved implicitly through the activities of the various functional departments of the firm. Left to its own devices, each functional department will inevitably pursue approaches dictated by its professional orientation and the incentives of those in charge. However, the sum of these departmental approaches rarely equals the best strategy.

[8] In strategic management business managers are assumed to possess unconstrained capacities with respect to rationality and actions in the pursuit of high profitability. Strictly speaking this is not the case, however. If the assumption of perfect rationality held, strategic management as a normative discipline would become useless. Actually, business managers are profit seekers constrained by bounded rationality and the imperfections of the internal and external settings of the firm.

The usability of strategic management in the value creation analysis follows from the conceptualization of 'strategic alignment' between the organization and its environment. Hence, there is strategic consistency, when the actions of an organization are consistent with the expectations of the management, and when these are consistent with the market and the context (cf. Arieu, 2007). Traditionally, strategy has been regarded as a *combination* of the ends (goals) of the firm and the means (policies) by which the goals are intended to be achieved (Porter, 1980). Moreover, corporate strategy can be defined as a *match,* which the firm pursues between its *internal resources* and *skills* and the opportunities and risks created by its external environment (Grant, 1991). On the basis of which category of the drivers - external or internal – dominates in strategic planning and consistency, there exist two competing schools of the origins of competitive advantage. Whereas *the structuralist approach* regards the characteristics of the business environment as the key driver for the strategy formulation, *the resource-based view* takes an opposite stance stressing the significance of the unique resources of the firm. The thesis points out that an *integrative approach to strategic management* is a viable framework for the analysis of the productivity of a service firm. The implications of strategic management to the analysis of service-productivity are discussed at further length in Section 4.2.

The strategy of a firm represents a special case of the fundamental choices which all *organizations* need to make. Decisions are made on markets and clients the organization intends to serve, the competitive tactics the organization employs, and the goals it sets for itself (Scott and Davis, 2007). The observation that strategic management is derivable from the general *organizational theory* (Nadler and Tushman, 1997) is considered to strengthen the explanatory power of the extended value creation approach in this thesis. Like strategic management, organization research is highly hermeneutic, inductive and inter-disciplinary. The thesis puts forward the perspective of economics and business management, which stresses the alignment between the organization and its task environment. This corresponds to 'strategic consistency' (Arieu, 2007). The main contribution of the organization theory to the explanatory value creation approach is the *contingency theory* developed originally by Lawrence and Lorsch (1967) and Thompson (1967). The logic of the contingency theory can be presented by the *structural-adaptation-to-regain-fit* (SARFIT) model in Figure 2. Environments with inherent uncertainties create requirements for organizations influencing the strategic choices of the management. Strategies and technological choices further create contingencies such as economies of scale, technology and the degree of diversification, for which some organizational modes are better

suited than others. In the case of a mismatch caused e.g. by technological change, the performance suffers, which will trigger a new search for the organizational 'fit'. Hence, organizational innovations would improve performance and the resource productivity (Scott and Davis, 2003)[9].

Figure 2. A schematic presentation of the contingency theory (Scott and Davis, 2003)[10].

Through the assumption that strategic consistency (alignment) holds, the deduction of the contingency theory is applied in a reversed form in the thesis. That is, the characteristics of *organization* reflect *strategy*, which is further reflected in the service *technology* of the firm (cf. Donaldson, 1995). The analysis in the extended (explanatory) value creation approach acknowledges that strategic consistency is inherently imperfect and organizations are needed because the rationality of their managers is bounded. First introduced by the sociologist Herbert Simon, *the behavioural assumption of bounded rationality is central for the theoretical and the empirical analysis in the thesis*. According to (Simon, 1961) human behaviour is intendedly rational but only limitedly so. The capacity of the human mind for formulating and solving complex problems is very small compared with the size of the problems whose solution is required for objectively rational behaviour in the real world – or even for a reasonable approximation to such objective rationality (Simon, 1957). Problems of bounded rationality arise because of the limited human capacity to process information on the alternative courses of action that are available to the actor, and the consequences of these actions. Owing to bounded rationality managers and entrepreneurs are not rational profit maximizers, but rather they are 'profit seekers' and

[9] Variants of the contingency theory are included in the various sub-fields of economics of organization. As noted by Dosi et al. (1998), organizational systems mediate the impact of technology on competitiveness. In the absence of robust and adaptable organizational systems in firms, among firms and between firms and external institutions, the fruits of technology will become dissipated. Conversely, well-designed organization structures and effective management are the handmaidens of competitive advantage, economic development, and growth. While organizational form is principally an endogenous variable in strategic management as well, organizational theorists and aligned economists acknowledge the pervasiveness of organizations as governance institutions, ranging from multinational corporations to arms-length contractual relationships on the markets (Williamson, 1985; Nelson Winter, 1982).

[10] This is equivalent to the structure-conduct-performance paradigm (SCP) in the field of industrial organization and economics (Scherer, 1980). SCP maintains that the characteristics of the industry structure determine the strategies and actions of firms, and thereby influence their performance (see Section 5.4).

pursue 'satisfying' performance. This is a distinct deviation from the profit maximization assumption, which the standard neoclassical theory builds on[11]. Based on the evolving routines and rules organizations are capable of dealing with (mitigate) the problems of bounded rationality and uncertainty. Ultimately, the nature of the contingencies guides the managerial choice among the organizational alternatives in the pursuit of the 'most satisfying' productive outcome.

As a specific field in organizational economics[12], *transactions cost economics* fills the analytical gap between the organization theory and strategic management. In the spirit of contingency theory, transaction cost economics puts forward the motives of economizing on the organizational and contractual costs in the face of uncertainty, technological characteristics and the bounded rationality of the firms' management. The essence of transaction cost economics is best conveyed by the features that distance it from the 'orthodox', neoclassical economics. Williamson (1985) notes that transaction cost economics is a comparative approach to the study of economic organization in which the transaction is made the basic unit of analysis. Transaction cost economics maintains that *organizational variety in all businesses arises primarily in the service of transaction cost economizing*. Organizations become the mechanisms through which economic agents attempt to regulate non-cooperative behaviour. Masten (1982) notes that by moving a transaction from one institutional setting to another, certain strategies may be precluded and thus specific costs are avoided. Broadly taken, transaction costs are the costs of contracting which are equivalent to friction in physical systems (Williamson, 1985). Cost incurred prior to the assignment of the contract (the *ex ante* costs) are the expenses of drafting, negotiating, and safeguarding contracts. The *ex post* contracting costs include costs of opportunism i.e. mal-adaptation and haggling as well as setup and running costs associated with the governance, and bonding costs (Williamson, 1985). Post-contractual costs arise since their causes cannot be foreseen *ex ante*, and the contract often lacks credible commitments by the parties involved. The main contribution of transaction cost economics to the explanatory framework of service productivity is the operationalization and the

[11] In general, bounded rationality is a complex and controversial issue. More detailed accounts are provided e.g. by Fransman (1998) and Radner (2005).

[12] Organizational economics, or economics of organization, is a field of inquiry which builds on the positivistic paradigm of neoclassical microeconomics and the hermeneutic premises of organizational theories. While sharing the interlinked foci of profit seeking enterprises and strategic behaviour with neoclassical, 'orthodox' industrial economics, economics of organization discriminates abstract modelling and focuses on the observed behaviour of economic agents and institutions. Showing high variance in the methodological formality and coherence, the various branches of economics of organization enable rich of inductive and deductive theorizing with a solid linkage to the real world phenomena. The fields of inquiry embraces economics of agency and incentives, transaction cost economics, economics of authority and property rights as well evolutionary economics and organizational learning.

'recipes' of organizational design, as well as the implications of the productive outcomes of the services generated by the internal and external assets of a firm. The implications of organizational design to the analysis of service-productivity are discussed at further length in Section 4.3.

In summary, the utilization of the theoretical perspectives of strategic management and organizational design (managerial approach) in the construction of extended (explanatory) value creation approach is based on three considerations. *First*, assuming that managerial choices are consistent, the intangible characteristics of the overall service technology can be addressed and approximated with the more tangible characteristics of strategy and the organizational design of the service firm. Accordingly, in the light of the contingency argument highlighted in Figure 2, the characteristics of a firm's strategy and organization convey useful information on the service technology, and how productivity – in terms of scale-efficiency and effectiveness – is utilized in the service firm. *Second*, the extension of the value creation approach is conducted through the *implementation* of the premises of the descriptive productivity analysis in Section 3.5 into the examined theories of strategic management and organizational design. Through this 'deduction' the focus of the constituent theories is *extended* to the analysis of service productivity. *Third*, this deduction is aimed to generate a higher *consistency* between the structuralist approach and the resource-based view of strategic management. In a similar vein, productivity analysis implies a convergence of the generic organization research and the transaction cost economics to a more *uniform* organizational approach. At a higher level of aggregation, increased coherence is pursued between strategic management and organizational design.

2.4 Conceptualization of services and productivity

In common language, *service* is usually understood as a value adding process or the outcome of that process provided by individuals to other individuals. Professional discussions and analyses of services are attached to one of the three levels of economic aggregation. At the lowest level the focus is geared to individual *service activity*, which may concern an internal activity of an organization, or an external activity provided by organizations or individuals with other individuals or organizations. The activity level shows the highest complexity, as the definitions of service activities should capture the various dimensions and purposes of services in a comprehensive way. At the intermediate level a service is equalled to the principal business activity of a *service firm*, i.e. the production and delivery of services

to the external clients. At the highest level of aggregation are *service industries* or sectors, which are defined by official, international standards. Service classifications and definitions are also influenced by technological progress, which fosters the growth of service business. The growth of the market-mediated services or the marketable service activities (cf. Parrinello, 2004) has been driven mainly by *two complementary* forces[13]. The competitive business environment at the global scale has induced effective division of labour between companies and industries, which is manifested in the growing externalization of auxiliary services within various economic sectors, the manufacturing sector in particular[14]. With the increased supply (the push effect), there exists a growing demand (the pull effect) for various business services and consumer services. This holds also for the infrastructural services, such as transportation, communication and financial services (banking), which are prerequisites for economic progress. Services and their main features are discussed in Sections 2.4.1 - 2.4.5.

Like services, *productivity* is a multidimensional concept. Its meaning can vary depending on the context where it is used (Tangen, 2005). "The concept is not well defined and separate interests groups view productivity differently" (Ghobadian and Husband, 1990). Productivity entered in the vocabulary of economics in the last quarter of the 18th century through the path-breaking works of Quesnay (1766) and Smith (1776)[15]. Through the evolving industrial capitalism and the emergence market economies in the 19th century, productivity gained a strategic significance in manufacturing corporations, which developed competitiveness through overseas expansion. In its original meaning productivity became thus synonymous with *technical or operational efficiency* in transforming capital, labour, energy, and other intermediate products into marketable goods. Productivity growth was searched for and facilitated through technical innovations, which mechanized the manufacturing processes and made them increasingly capital-intensive (Chandler, 1977; 1990).

For the industrialists productivity offered an effective tool for benchmarking their competitiveness and operational efficiency in relation to competitors. A public and political interest in productivity awoke in

[13] For the alternative and critical arguments on the service growth see e.g. Sayer and Walker (1992), Bell (1973).
[14] When firms externalize or outsource parts of their internal service activities, they become the outcome of specialized processes and are recorded as part of the service sector (Viitamo, 2003). To some extent the externalization argument holds for the growth of public services as well. Public services are beyond the focus here.
[15] While Quesnay stressed the productive efficiency of agriculture in wealth accumulation, Smith was more convinced by the productive superiority of the emerging manufacturing sector. For Smith, the labour of a manufacturer is productive, since it adds to the value of the materials which he works upon. The labour of a "menial servant", in contrast, is unproductive since there is no value added (Smith, 1776).

the late 19th century (cf. Bernolak, 1997). It was realized that through a higher efficiency of industrial production, productivity growth enabled higher income for workers, which in turn brought about improved well-being and prosperity for the citizens and the state. To date, productivity growth is a key policy objective in all market-based economies (OECD, 2005; 2004). Like services, productivity can be defined at various levels of economic activity. At the *macroeconomic level* productivity is regarded as a composite indicator for the competitiveness of the economy. At the *industry level* productivity reflects competitiveness and the technological characteristics of industries. At the *firm level* productivity refers to the efficiency of firm's the activities and business units in producing the goods and services. *The main focus in this thesis is the productivity of a firm and a service activity*. Productivity and the related concepts are discussed in Sections 2.4.6 – 2.4.8.

Whilst there is a *widespread consensus* among industry experts and scholars about the drivers that foster the growth in services and productivity, there is no general consensus on the *definition* of services and how to measure the productivity of services. The conceptual diversity in services owes predominantly to the *intangibility* of service processes and outcomes (Laroche et al., 2001) and the consequent ambiguity in distinguishing between services and immaterial products (Parrinello, 2004). For instance, Parrinello (2004, p. 383) notes that "industrial design, software, new medicines and therapies, which are the outcome of R&D and are subject to intellectual property rights, are not services but intangible goods". Reflective of the present policy discussions as well, there exists a long historical tradition of treating service sector as a monolithic and *unproductive* residual (Smith, 1776; Baumol 1967) of the more productive manufacturing sector. Based on these considerations, the conceptualization in the following sub-sections provides *synthesized definition and characterization of services and productivity* which is used in the theoretical and empirical analysis of the thesis.

2.4.1 The distinctiveness of service activities

Service management and marketing literature posits that the prominent features of service activities, which distinguish them from manufactured goods, are intangibility, heterogeneity, inseparability of production and consumption, and perishability (Zeithaml et al., 1985; McLaughlin and Coffey, 1990). Accordingly, "much of the discussion of the relationship between goods and services has focused on how they characteristically differ and the implications of these differences for marketing"(Vargo and

Lusch, 2004, p. 326)[16]. Assuming that the dichotomy holds, manufacturing industries tend to produce tangible, homogeneous and storable products, and their production and consumption can be spatially separated. Regardless of the inherent risks of oversimplification, the contrasting perspective may be conducive to theoretical and empirical analysis of service activities and manufacturing. What is logical and intuitive for manufacturing, is most often complex and incomprehensible for services. For instance, as an indication of intangibility the output of a service cannot be partitioned into measurable units. The quantity of the output is often approximated by the intensity with which the resources are used, or the quality of the service outcome. In the service industries the principal resource is labour, which is usually augmented with capital and other inputs, whereas for most of the manufacturing processes the principal input is physical capital, which is augmented with labour and intermediate inputs.

In service technologies, where labour is the only category of input, the services of labour and the production process are inseparable from the delivery and outcome of the service. The quality of labour is thereby reflected in the quality of the output, which measures the service performance for the client. Since the quality of a service is often dependent on the subjective assessment of an individual customer, the performance evaluation of a service is highly customer-centric. In comparison to tangible products, subjective perceptions on quality are more intrinsic for services, which is a major source of uncertainty faced by the producer. Other peculiarities of services are weak documentability and reproducibility[17], which are the major sources of uncertainty about the benefits of the services accrued to the customer. Again, given the prevalence of the dichotomy, these problems should be of minor importance for manufacturing. Related to the inseparability of production and consumption, service management and marketing stresses the stylized fact that for a number of services, customers are important providers of inputs in the production and design of services. High customer involvement raises the issue of the relevant boundaries of production processes and the service firm. Is the relevant organization the supplier's production unit or the co-productive relationship between the supplier and the customer? For goods production the answer is straightforward. While technologically interdependent, the performance of adjacent production lines can be measured separately. Since outside

[16] In reference to the definition of Vargo and Lusch (2004), intangibility implies the lack of palpable quality of goods, and heterogeneity the inability to standardize the output of service in comparison to goods. Inseparability of production and consumption reflects the simultaneous nature of service production and consumption compared with the sequential nature of production, purchase, and consumption that characterizes physical products. As a result, services are perishable, or non-storable in comparison to physical products.

[17] Weak documentability results from the prevalence of tacit information produced and used in the service processes. Problems of reproduction or replication are manifested by the heterogeneity of the services (Vargo and Lusch, 2004).

involvement in production is negligible, manufacturing processes approximate what the organization theorist call closed systems (Scott and Davis, 2003). From this (organizational) perspective, the production of most services is conducted in open systems, where the relevant production unit is the producer – client entity. The differences between goods and services and the role of users therein, is further highlighted e.g. by service-dominant logic (Vargo and Lusch, 2008).

2.4.2 Hill's classical definition of services

A pragmatic approach to the definition of services is to identify the key distinctions between goods and services. Multidisciplinary research has suggested some specific characteristics as common attributes of all services. The underlying feature is the intangibility of the service process and the outcome, which entail the distinct characteristics of *perishability* and *non-storability* of the service outcome. Owing to these attributes, production and the outcome of services are subject to marked *uncertainty* in comparison to more tangible goods. More than material products, services are *customized*, which also implies that *clients participate* in various ways in the design and production of the purchased services. The examination of the distinct properties of services has resulted in a number of descriptive definitions for services (Parrinello, 2004). Many scholars (see e.g. Gadrey, 2000; 2002a) have referred to the definition of Hill (1977): "A service may be defined as a change in the conditions of a person or a good belonging to some economic unit, which is brought about as a result of the activity of some other economic unit with the prior agreement of the former person or economic unit" (op. cit. p.385)[18]. The definition suggests two necessary conditions for the existence of a service. First, the attributes of the objective, human or non-human should change through the service process according to the specifications laid in the service contract[19]. Second, to be a service, the process resulting in the upgrade should be performed separately by an independent service provider. Focusing on the service outcome, Hill's definition avoids the inherent problems associated with the intangibility of the process. In the 1970's the essence of a service was undoubtedly well-captured by the cited definition of Hill (1977). Technological change, such as digitalization and changes in market environment (may) require refinements and implementation of a more generic definition. For example information and communications technologies (ICT) enable the storage and transmission of a growing number of

[18] In his later refinement, Hill (1999) emphasizes the fact that services should not be identified with immaterial goods. A good can be intangible as well.
[19] Most often the change means an up-grade of the specific attributes of the object.

knowledge-based services, which breaks the traditional concurrence of service production and consumption (Gadrey, 2000; Parrinello, 2004)[20].

A related development is the transformation of the classical service defined by Hill (1977) into *self-produced service processes* by customers. In this regard, the digitalization of business services and consumer services has further manifested the shift of emphasis from processes to outcomes and the customer's involvement in the service production. Illustrative examples can be found in the retail trade, universal banking and insurance (cf. Gadrey, 2000). For the self-performed services, the main object of transaction is not the service itself, but the spatial and temporal *freedom* with which the client can perform the service activity, and the *right* assigned to the client to employ the service production capacity owned by the provider. As Parrinello (2004) notes, it is questionable if such a right can be regarded as a service in the first place. Namely, if the use of service capacity is defined as a service, then the use of any capital good is also a service. This leads to the wide concept of services adopted in the neoclassical tradition (Parrinello, 2004). In conclusion, there are two *alternative* ways of interpreting the effects of technological and market evolution. It can be maintained that Hill's original definition of services still holds, whereas technology tends to displace traditional service functions and transform them into new forms of commodities, hybrids and intangible goods. Another interpretation is that given the technological change, conceptual adaptation is required. In the former case activities enter into and exit from the *absolute* service definition. In the latter case of *relative* interpretation, predetermined functions in the economy are regarded as services, which are subject to evolutionary change (cf. Gadrey, 2000)[21].

2.4.3 Services as process and system

Within a more general setting, service is disengaged from a relational context between individuals and understood more as a relation between interlinked processes of production and consumption. In effect, the common denominator of most service definitions is the activity or process view (Vargo and Lusch, 2004; Viitamo, 2003). Parrinello (2004) assumes that these processes are independently run from each

[20] While the service processes cannot be stored, the outcome of the service can, and will be, increasingly so. The technical advances that enable spatial separation of service production and consumption fosters the economic incentive to service outsourcing, respectively.
[21] Mixing of these approaches has been a major source of confusion in the public and academic debate.

other and the activation of other processes. In contrast with goods production, where the production process is based on a *serial* input-output relation[22], the service process is characterized by a *parallel* input-output relation. Accordingly, the activity brought about by a process can be an input of another process *during the same period*. "This activity is an output of the provider process and an input of the user process, and this is called service" (Parrinello, 2004, p. 387). Ultimately, "service is a quantity of a certain activity performed during a period of time" (ibid. p. 388). In the definition of Parrinello, a process resulting in a service outcome *serves* another *independent* process by performing a function used by the latter, but it cannot restore an *inventory* of service. This concept of service is wider than a pure labour service, as the service process most often requires complementary inputs and other means of production. Yet, it is narrower than the interpretation of service by Vargo and Lusch (2004), where service is attributed to physical and capital goods as well[23].

An alternative route towards an absolute and *synthesized* definition of service is to merge the existing definitions, and to identify the most common service characteristics. Through an extensive literature analysis Heiskala et al. (2006) identify four dimensions, which constitute a framework for a generic service definition. As indicated in Figure 3, the key dimensions are interlinked in the consequent *four-worlds-model*. The *object world* refers to the recipient of the service, which can be an individual, consumer, a firm or a public body (cf. Gadrey, 2002a). The *needs world* sets a rationale for the customer's willingness to buy a particular service. To materialize a service transaction must provide an increased utility and experience for the customer in the case of a consumer service, and productive (financial) benefits in the case of business-to-business services. The *service solution world* involves the specification and agreement of what is to be delivered. The service solution, which equals to the outcome of the service offering, is distinguished from the process to generate the outcome. Finally, the *process world,* as outlined e.g. by the definition of Parrinello (2004), specifies the production and delivery and the resources needed thereby. The inter-linkage between the four dimensions is highlighted by the inner circle in Figure 3. The model of Heiskala et al. (2006) is augmented here with

[22] This means that the output at the end of the production period can be the input of another process in the next period and can restore an inventory of goods used up in the previous period (Parrinello, 2004).
[23] To conclude, the process view that differentiates between production and consumption constrained by the stipulations set by Parrinello suggests an attempt towards an absolute and universal definition of a service.

the dotted circle to indicate the associated service characteristics in each dimension (cf. Gadrey, 2000)[24].

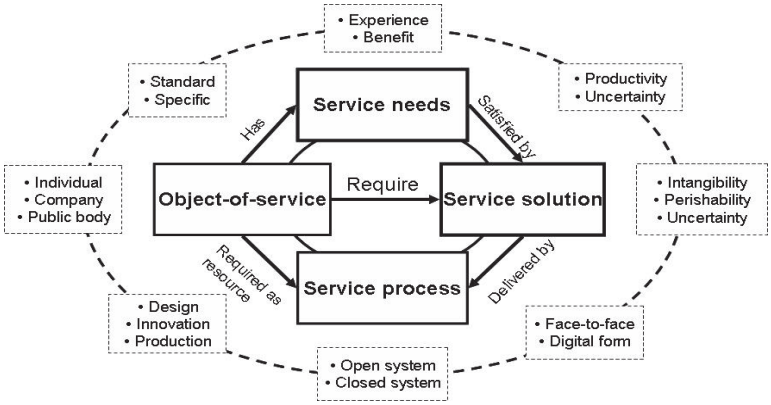

Figure 3. The four-worlds-model on service systems (adapted from Heiskala et al., 2006)

2.4.4 Business services vs. consumer services

With regard to service businesses (marketable services), which is the focus of this thesis, the main distinction is made between consumer services and producer services. Examples of services consumed by individuals are health care and recreational services provided by movies and restaurants. Producer services or business services are used as intermediate inputs in buying firms' production processes. This distinction makes a notable difference in the production technologies, delivery modes, and business strategies available for the service companies. *More importantly, the service productivity becomes more operational in the case of business services, which constitutes a major part of the banking services as well*. Kox and Rubalcaba (2007) for instance, emphasize the multiple roles of business services for the competitiveness of the clients' processes. Accordingly, business services is a set of service activities that – through their use as intermediary inputs – affect the quality and efficiency of the production activities, by complementing or substituting the in-house service functions. As conveyed by this definition, the main purpose of business services is to enhance the productivity of the

[24] For instance, a central attribute of the process world is the openness of the system measured by the extent to which the client participates in the process. The Customer's participation may take several forms, such as design, innovation or production.

customer's processes[25]. Based on *generality-specificity* continuum of the business service functions the service taxonomy proposed by Kox and Rubalcaba (2007) further highlights customer orientation and the relative importance of customization across service industries. In that taxonomy the highest degree of generality is shown by the *network services,* such as distributive trade, energy, transport, banking and telecommunication. While also relatively standard, the *operational business services* - e.g. security services, cleaning, bookkeeping etc. - are more specialized in supporting specific in-house functions of the client firms. The characteristic that operational business services could also have been produced in-house by the clients, distinguishes them from the network services. The highest degree of customer-specificity is shown by *knowledge-intensive business services* (KIBS)[26]. In the production of these services - e.g. computer services, management consulting, legal services, marketing and engineering – knowledge-intensity is embedded in the inputs as well as the outputs (cf. Gallouj, 2002).

2.4.5 Co-evolutionary perspective to services

This thesis takes a co-evolutionary perspective to the conceptualization of a service offering. It maintains that the *generic* differences between services and manufacturing activities based on the *typical* attributes of services are impossible to demonstrate in practise. This implies that the dichotomy is not clear-cut. In reality most of the key variables differentiating between industries are continuous, and hence they define a spectrum of industries between the theoretical archetypes of *pure* manufacturing and pure services (Metcalfe and Miles, 2006; Viitamo, 2003)[27]. Moreover, the actual offering of a firm most often consists of goods and services (Neu and Brown, 2005), which define a *continuum* of combined offerings displayed in Figure 4.

Relatedly, a significant number of commodities cannot be classified as a "pure" good or a service. In such a case the "commodity is sold as a *package* of goods and service and the mix as a whole has its own economic identity, distinct from the individual components" (Parrinello, 2004, p. 393). For

[25] In most cases it is a question of activities that can be performed internally by the clients as well. To explore the argument of the authors further, the existence and expansion of business service industries indicates that external business services enjoy a comparative advantage over in-house service activities in performing specific supporting functions (Kox and Rubalcaba, 2007).

[26] As with operational business services, the growth of KIBS is boosted by externalization of the equivalent in-house service activities. A complete outsourcing is exceptional, however, as complementary knowledge is usually required in-house as well.

[27] The term pure in this context is reflective of the extreme values of intangibility, heterogeneity, inseparability and perishability.

instance, a retailer purchases goods at wholesale and sells goods and services to his customers as a package with its own price. Such a package includes the information conveyed by the assortment of goods on the shelves and the nice behaviour of the sales-clerk, jointly with the goods on sale. Another example is *banking activities*, where packages of products and services are transacted as single vendible entities. Banks supply financial (intangible) products and services of payment and safety for cash holders. At a margin, it is a matter of definition whether such a package is a separate good of a bundle of separate goods (Gadrey, 2000).

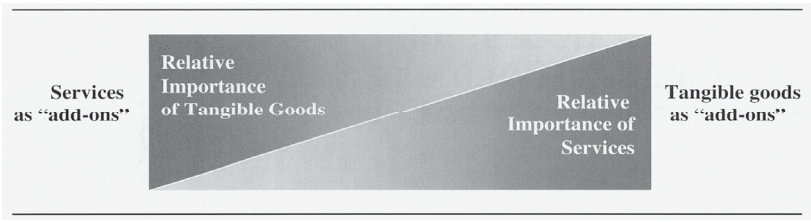

Figure 4. The continuum of a firm's offering (Neu and Brown, 2005).

In a more general case Vargo and Lusch (2004) argue that goods and services are not mutually exclusive subsets of a common domain called commodities. "Attempting to define service by contradiction from tangible goods both prohibits a full understanding of the richness of the role of service in exchange and limits a full understanding of the role of tangible goods" (op. cit. p. 326). In this setting service is sometimes provided directly and sometimes indirectly, through the provision of tangible goods. "Goods are a distribution mechanism for service provision" (ibid. p. 326). With these premises the authors define service generally as the "application of specialized competences (skills and knowledge), through deeds, processes, and performances for the benefit of another entity or the entity itself (self-service)" (p. 326). Clearly, the assumption that some forms of capital and consumed goods can provide services contrasts sharply with the service definition of Parrinello (2004). Vargo and Lusch (2004) do not set detailed stipulations for the existence of a service either, which suggests a relative definition of services (see above). Some activities are more service-like than others, and various further specifications are thereby enabled. In fact, the authors acknowledge that anything can be service, as the critical element is not the process itself but the outcome. In this setting economic *exchange* is fundamentally about service provision, which extends the analytical scope to the transactional

properties of a service (Williamson, 1985). While logically appealing, the view that goods are the carriers of services is controversial and hence the issue excluded from the detailed analysis here[28].

When service becomes an inclusive concept and a matter of degree, it is consistent with a number of other less stringent interpretations. Vargo and Lusch (2004) make a reference to the resource-based theories of a firm and the theory of a firm by Penrose (1959). "A theory of firm is essentially an examination of the changing productive opportunity of firms…it is never the resources themselves that are the inputs in the production processes, but only the services that the resources can render. The services yielded by resources are a function of the way in which they are used" (Penrose, 1959, p. 24). Similarly, Hunt (2002, p. 270) points out that firm's resources can be viewed as "bundles of potential services" (op. cit.)[29]. Finally, the co-evolutionary aspect of services is reflected by the emerging business models of mass-tailoring and service modularization well. The mass-tailoring of a good or service is based on (scale-based) serial production of the components, the combination of which yield a high customer value through customer-specification[30] (Heiskala et al., 2006). In particular, service modularization is a strategy to transform intangibility into more tangible forms, and transform tacit information into more codified forms. This enables improved replication and standardization, which characterize manufacturing processes[31].

2.4.6 The meaning of productivity

In general, productivity is a concept to measure the ability of a production process to generate the expected and desired outcome with the minimum usage of resources. While most analysts regard productivity as the most important source of a firm's competitiveness, it is often relegated to second rank, and neglected by those who are involved in the production processes (Djellal and Gallouj, 2008;

[28] In a more general context the issue is related to the tangibility of services and the technology, which assume high relevance in the thesis.

[29] To buttress their argument, Vargo and Lusch (2004) demonstrate that intangibility, heterogeneity, inseparability and perishability fail to delineate services from goods adequately. These dimensions are matter of degree and characterize all business activities. With regard to intangibility and heterogeneity, the degree of the characteristics is contingent on the subjective assessments of the producer and the customer. Supportive of the argument, Laroche et al. (2001) claim that intangibility is actually a multi-dimensional concept. In particular, the mental dimension explains why some goods may be perceived by the clients as more intangible than services, and why some services seem to be more tangible than goods.

[30] This allows for a cost-efficient way of differentiation and diversification. In that case the marginal costs of product variation in serving different customers can be diminished.

[31] In particular, mass-customization is applicable for services with high frequency of transactions and low need of customer participation, as well as services that can be digitalized. Examples are finance, insurance, maintenance and cleaning.

Tangen, 2005). This is manifested in the theoretical approaches to strategic management as well (see Section 4.2). Moreover, those who use the term productivity rarely define it explicitly. This reflects the fact that there is no unequivocal agreement on what productivity actually represents. Ghobadian and Husband (1990) suggest that systematic approaches to productivity can be divided into *three categories*: *technological, engineering and economic* approaches. The technological approach, which is prevalent in the macroeconomic analysis and industrial policy, looks into the ratios between the output and input in production. It is appropriate for intra-industry and inter-firm comparisons. From the engineering perspective, productivity is the relationship between the actual and potential (capacity-based) output of a process. On the basis of the *technological* and *engineering* approaches, and assuming that the commensurability problem of inputs and outputs can be resolved, the productivity of a firm's production process can be expressed as a ratio between the quantity of output generated and the quantity of inputs expended in a certain period of time. This means that productivity is a function of time, and it can grow in three alternative cases: 1) the real output grows faster than the quantity of inputs, 2) more real output can be extracted from the given or decreased quantity of inputs, and 3) the real output remains constant or decreases less than the quantity of inputs[32].

The perspective of (industrial) *economics* is more theoretical. It combines the engineering and technological approaches but at the same time it looks at productivity more from a perspective of economic efficiency and optimal allocation of resources. The three approaches are not contradictory, but they examine the same issue from different angles with differentiated needs to evaluate business performance. The general point is that productivity is a *relative* concept to distinguish variations in the productive performance with respect to a relevant benchmark (competitors or time). In contrast to mathematical definitions and indicators of productivity, verbal definitions provide a detailed description of productivity in a specific context. A descriptive concept may serve as a *norm,* a shared view of the strategic goal the organization is striving to achieve (Tangen, 2005). As verbal definitions in most cases cannot be transformed directly into a mathematical form, the persistent challenge is to construct productivity indicators that approximate the verbal definitions as accurately as possible.

The firm level description of productivity by Bernolak (1997) *provides an appropriate template for the further characterization of productivity* in services. According to Bernolak, "productivity means how

[32] In a similar vein, there are three main cases where productivity decreases (Viitamo, 2007; Misterek et al., 1992).

much and how good we produce from the resources used. If we produce more or better goods from the same resources, we increase productivity. Or, if we produce the same goods from fewer resources we also increase productivity. The same applies to services. If we provide more services or better quality services from the same resources, our productivity has increased. Or, if we provide the same services and just as well, from less resources, we also improve productivity" (op. cit. p. 204). By 'resources', Bernolak means all human and physical resources, i.e. people who produce the goods and provide the services, and the assets with which the people can produce the goods and provide the services. The resources include the land and buildings, machines and equipment, tools and raw materials, inventories, and other current assets. Applicable to goods and service equally well, the productivity definition of Bernolak conforms to the generic interpretation of service by Vargo and Lusch (2004) and Penrose (1959). If the resources are understood as consisting of all human and physical assets, productivity results from the overall delivery of services by the resources which are used in the productive activities of a firm. As the definition of productivity is contingent on the use and availability of (qualified) resources, the company's productivity is reduced, if its resources are not properly used, or if there is a lack of them. The use of a firm's productive resources is manifested in the quality of the output and how it is perceived by the customer (market). As quality assessment requires a benchmark, it is implicitly assumed that the relevant characteristics of the output can be prescribed objectively prior to the production or the relevant characteristics of the output is learnt and evaluated subjectively in the market. This results from replication, the routinization of activities (Nelson and Winter, 1982) in the firm's production and the transactions with the clients. In regard of the quality of the resources and the output the general implication for productivity is symmetric. A higher productivity of activities is attainable through a decrease of wasted and idle resources[33] or through a higher volume and the quality of the output.

A firms' productivity can illustrated by the *transformation* of inputs to outputs. On the basis the technological and engineering approaches, Figure 5 highlights productivity with respect to each type of the inputs used. Actually, most transformation processes of a firm build on technologies, which use several inputs and which generate more than one kind of outputs. In that case a comprehensive measure of productivity relates the bundle of output to the bundle of inputs reflecting total (factor) productivity. This is shown in Figure 5 as well. The aggregation of multiple inputs and outputs entails the problem of

[33] This involves the assumption that the productive value of the resources is not degraded in a long run.

'commensurability', as the quantities of inputs and outputs are usually not measurable in common units. A related problem is the identification of the relevant inputs expended in the production of the outputs, and the identification of changes in the *quality* of the outputs and the expended inputs (Ghobadian and Husband, 1990). As a response, various methods of weighting inputs and outputs have been developed for the calculation of partial and total productivities (Tangen, 2005; Hannula, 1999). An alternative is to measure the inputs and outputs in *monetary units*, which avoids all the problems of aggregations (Grönroos and Ojasalo, 2004). As indicated in Figure 5, this leads to a market- or value based assessment of productivity, i.e. profitability.

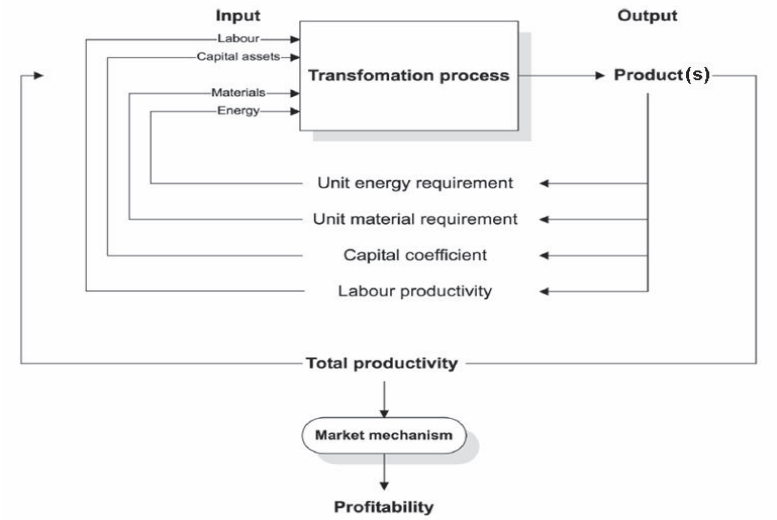

Figure 5. Transformation process and total factor productivity (Tangen, 2005)[34].

2.4.7 The linkage of productivity to profitability

The overriding goal of a business enterprise is usually not productivity growth *per se* but overall *profitability*, which can be expressed by the value ratio between revenues and production costs. From the firm's perspective, technical productivity is a *means* to achieve high profitability and its growth. As profitability is a financial ratio, it is also influenced by the unit prices of outputs and inputs. Hence, the growth of a firm's profitability is a function of (technical) productivity and the *price recovery*, which is the ratio of the unit price of output and the unit cost of inputs (Tangen, 2005). The technical

[34] The Figure is adapted from Kurosawa (1991).

dependency between profitability, productivity and price recovery is depicted in Figure 6 below. Depending on the firm's competitive position and strategy (market power) in the output and input markets, its profitability will be determined through the firm's own actions, through external factors uncontrollable by the firm, or through some combination of both, which is the most common case. When a firm's profitability follows exclusively from its own actions, which is a hypothetical case, the firm exerts full monopoly power over the relevant prices and markets based e.g. on an exclusive access to proprietary know-how of the relevant production technology. In the opposite case which is also hypothetical, a firm cannot influence its profitability and it takes competitive prices and advances in productivity externally as given by the markets.

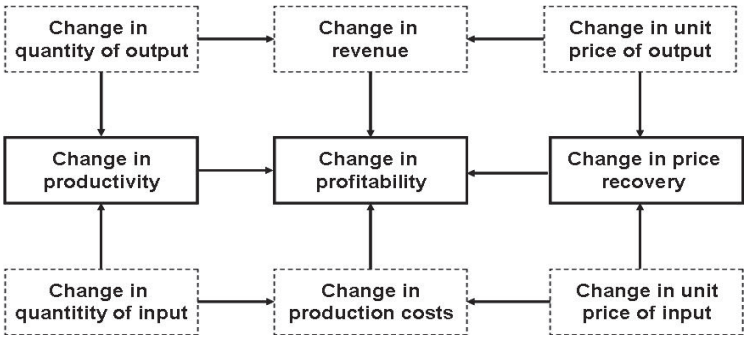

Figure 6. Linking productivity and profitability (Stainer, 1997).

On aggregate a firm's productivity a function of the (co)operation of internal (service) activities, which are directly or indirectly related to the transformation of the inputs to the outputs. While a firm's overall productivity is derivable from the partial productivities of individual activities, such as marketing, logistics, production and administration, there is often strong externalities (hidden synergies) among the activities, which complicate the productivity calculation. At the lowest level of disaggregation, a firm's overall productivity is reducible to specific characteristics of its activities, which determine their productive contribution. For instance Slack et al. (2001) indicate that high-performing operations and activities, which are conducive to the productivity growth of a firm, show high quality, flexibility, and cost-efficiency, as well as high speed and dependability on other operations (cf. Porter, 1985).

2.4.8 Efficiency and effectiveness

Extending Bernolak's argument the above discussion implies that productivity – particularly in case of services - needs to be interpreted holistically, to reconcile the producer's and the customer's objectives (perspectives). In general, given the specifications of the product and the service, the producer's main objective is to attain the lowest possible unit cost of the production and delivery. To the extent that the input prices are also given, cost reduction implies the pursuit of *efficiency*[35]. The user on the other hand, is primarily interested in extracting high utility and (perceived) quality from the product and service, given its costs or price. This other component of productivity is generally called *effectiveness.* Efficiency is principally focused on the *quantity,* the utilization of resources, and hence, the denominator (inputs) of the standard productivity ratio. Effectiveness instead, is focused on the outcome, the creation of value for the customer and the responsiveness to demand. Effectiveness of the product and service is thus manifested in the numerator (output) of the productivity ratio (cf. Tangen, 2005).

In reference to the neoclassical theory of a firm (Varian, 1984, Viitamo, 2009a), the efficiency growth of a firm can be decomposed into three effects. Improved *operational efficiency* or *cost-efficiency* (1) implies cost reduction given the existing technology and the scale of production. Higher cost-efficiency reduces the waste of resources and moves the firm's actual costs closer down to its average cost curve. Improved *scale-efficiency* (2) implies a move along the firm's average cost curve towards the point, where the average costs reach the lowest possible level[36]. In the presence of *economies of scale* this implies an increased volume of production. *Technological advance* (3), which reflects improved total factor productivity (TFP), shifts the firm's average cost curve downwards. The neoclassical efficiency concepts are also applicable to a multi-product firm, which utilize the *economies of scope*[37]. In that case

[35] A detailed (neoclassical) definition of efficiency is given e.g. by OECD (2001). "The quest for identifying changes in efficiency is conceptually different from identifying technical change. Full efficiency in an engineering sense means that a production process has achieved the maximum amount of output that is physically achievable with current technology, and given a fixed amount of inputs. Technical efficiency gains are thus a movement towards 'best practice', or the elimination of technical and organisational inefficiencies. Not every form of technical efficiency makes, however, economic sense, and this is captured by the notion of allocative efficiency, which implies profit-maximising behaviour on the side of the firm. One notes that when productivity measurement concerns the industry level, efficiency gains can either be due to improved efficiency in individual establishments that make up the industry or to a shift of production towards more efficient establishments" (op. cit. p. 11)

[36] This point shows the maximum productivity and it is allocatively efficient.

[37] In general economies of scope over a given bundle of products and services prevails, if the average production costs in the integrated production are lower than the sum of the average costs in the separate production.

the firm needs to decide how to allocate resources in the various production lines to achieve high cost-efficiency and scale-efficiency (cf. Panzar and Willig, 1981; Baumol et al., 1988).

While efficiency is characteristically *unambiguous,* bounded by the inputs, the output and the technology, this is not been the case with effectiveness. It is "a more diffuse term and in most cases very difficult to quantify…such definitions lead to an interesting concept: there are usually no limits as to how effective an organization can be" (Tangen, 2005, p. 41)[38]. As indicated by Jackson and Petersson (1999), however, sustainable competitiveness of a firm necessitates that productivity is assessed in relation to both components. This necessitates that the producer - in making the production plan - has prior information (idea) how to attain effectiveness and how the goals on effectiveness is reconciled with the firm's goals on the production efficiency. Moreover, to be economically feasible and predictable for the firm, effectiveness needs to be bounded from above[39]. In regard of productivity, the focal issue is whether the firm is capable to attain the desired level of effectiveness, given its technology, and the desired level of production efficiency. Hence, in a general formula the overall productivity of a firm can be presented as a function of efficiency and effectiveness, where the marginal productivities of both components are locally positive[40]. In this thesis, *effectiveness is interpreted technically from the producer's perspective as the level of customization of the product and service to the needs of an individual customer*[41]. Of the earlier definitions this shows the highest consistency with Neely et al. (1995) that is, *effectiveness refers to the extent to which the consumer requirements are met.*

The decomposition of productivity into efficiency and effectiveness and their role in a firm's production process is illustrated in Figure 7. It is central to note that in this formulation quality is not the characteristic feature of effectiveness only but it is 'equally' important for efficiency. This and the

[38] Sometimes efficiency is defined as doing things right, while effectiveness is understood as doing right things (Tangen, 2005). From a firm's perspective these expressions imply an optimal allocation of the resources and capabilities over the alternative uses (product lines) so that the cluster of the product lines is efficient. Consequently, doing the right things and doing things right define the equilibrium conditions for a multi-product firm. To account for the efficiency and the effectiveness of a single activity (service), doing things right and doing the right things should be defined in terms of the objectives of doing.

[39] The requirement that the desired effectiveness is technologically feasible means that it locates within the firm's production possibility set.

[40] That is, given the level of efficiency, an incremental growth of effectiveness should lead to an incremental growth of productivity. The deduction is symmetrical for efficiency.

[41] A further characterization of the components of productivity is provided in Section 3.5.

other specifications of service productivity are discussed at further length in Section 3.5. The two-dimensional view of productivity provides strong implications for the business management and the persistent debate of how a firm's performance, profitability and productivity are actually inter-related. For instance, in the well-known hierarchical triple-P model of Tangen (2005), *productivity* influences *profitability*, which is one of the determinants of a firm's overall *performance*. The formulation of productivity as a co-product of efficiency and effectiveness implies that the hierarchy of the concepts vanishes, i.e. the three measures tend to reflect the same competitive outcome[42]. Accordingly, the general argument that productivity lies at the core of a firm's competitiveness finds added justification.

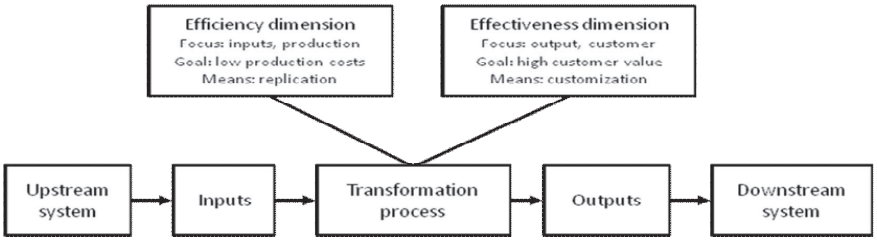

Figure 7. The general characterization of service productivity (modified from Sink and Tutle, 1989).

In conclusion, the issue of a firm's competitiveness is reducible to its capability of managing the overall productivity; efficiency with respect to the costs, and effectiveness with respect to the high customer value. This contributes to the related managerial debate, how to respond to differentiated demand in the market and at the same time, maintain high utilisation of the firm's resources in the presence of economic fluctuation. Traditionally, cost-efficiency and scale-efficiency have been the main criterion in assessing the productivity of the manufacturing processes, while effectiveness has been regarded as the major benchmark for service productivity. Given the stylized fact that services and manufacturing are interlinked by common continua of characteristics, a more comprehensive approach to productivity is clearly needed. Whereas the notion by Gadrey (2002) that *there may be diminishing returns of productivity concepts when they are applied to increasingly complex economies* is instructive, the following sections will point out that with further specifications productivity remains a viable concept for the performance of services.

[42] According to Tangen (2005) "performance is an umbrella term of excellence and includes profitability and productivity as well as other non-cost factors such as quality, speed, delivery and flexibility.

3 Service productivity - towards a synthesis in economic approaches

3.1 Introduction

The conceptualization in Section 2.4 summarizes the key characteristics of service activities and productivity. Based on that, Section 3 develops a *descriptive* framework which contributes to the synthetized approach to service productivity in the context of applied economics and service management. In deviation to service innovation and related fields of service research, where the convergence of the established schools called *demarcation* and *assimilation* has made the way toward the *synthesis* (Gadrey and Gallouj, 2002; Metcalfe and Miles, 2006), the theoretical and empirical analysis of service productivity has been split into the these competing schools. In the statistically oriented macroeconomic approach[1], i.e. *assimilation*, the primary focus is the productivity of industries. In that setting, productivity is conceptually equalled to the technical efficiency of the producer's production process. Productivity is quantifiable and unequivocally defined for all industrial sectors[2]. *Demarcation,* which is manifested in the socio-economic views in service management and marketing, posits that service industries are distinctive and service productivity needs to be addressed comprehensively from the perspective of an individual producer and the user, with the emphasis on the latter. The main focus is the distinction and interplay between *producer's productivity* and *customer's productivity* in the context of a service episode. In the socio-economic setting customer's productivity is generally equalled with effectiveness.

Building on the two paradigms, Section 3 focuses on the research question: *how can the presently separate macroeconomic and socio-economic views be reconciled to build a synthetized (descriptive) approach to the analysis of the productivity of a service firm?* (see Section 1.2). The synthetized framework of service productivity is called the *value-creation approach* (VCA). Complementary to the syntheses presented within the socio-economic paradigm[3], the value creation approach developed here builds on the premises that characterize the productive business activities of a service firm[4]. These

[1] As indicated in Section 2.3, the 'macroeconomic approach' builds on the microeconomic theory of a firm and productivity.
[2] Consequently, service productivity *per se* is seen as a meaningless concept.
[3] Socio-economic syntheses are given e.g. in Gadrey and Gallouj (2002) and Djellal and Gallouj (2008).
[4] Hence, the value creation approach should be seen as a managerial view of how productivity is related to the business activities of a service firm.

premises are manifested in a) the economic goals of the firm, b) the characterization of service productivity and c) the measurement of the productive performance by the service firm. VCA posits that the key to understanding the productivity of service industries and service businesses is to look into the value enhancing goals of individual firms with respect to their markets, customers and technologies. The value creation approach reconciles the conceptualization of producer's productivity utilized in the comparative macroeconomic (neoclassical) analysis with the perceived quality and customer's value, which are examined within a microanalytic setting by service management and marketing. VCA assumes that the underlying objective of the firm is to enhance long term profitability and the value of the firm, where balancing between effectiveness and scale-efficiency in service production and delivery is the key managerial choice. The discussion starts with a short historical overview of service productivity in Section 3.2. The essence of the macroeconomic and the socio-economic paradigms are presented in Sections 3.3 and 3.4, respectively. The logic of the synthesis and the other premises of the descriptive value creation approach are discussed in Section 3.5.

3.2 Some historical perspectives

The key aspects of the present policy-based debate on service productivity date back to 1940s (Fourastié, 1949; Clark, 1951). Given the distinct features of services, the major concern was the statistical observation, which indicated an inferior performance of service industries relative to the progressive manufacturing sector (Baumol, 1967). Moreover, the heterogeneity of service industries posed a methodological challenge for the measurement of service inputs and outputs. The prevalence of statistical and macroeconomic perspective on service productivity is conveyed by the cited paper by Fuchs and Wilburn (1967)[5]. With some *ad hoc* studies e.g. by Levitt (1976) and Sherman (1984) a wider academic and managerial interest in service productivity evolved towards the end of the 1980s. The need for a higher accuracy in the calculation of service productivity were fostered by the expansion of the service sector, which by the mid-1980s accounted for over 70 % of the total employment in the USA (Mark, 1982). Hence, "the increased importance of the service sector over the last two decades

[5] Fuchs and Wilburn (1967, preface) note that "…we know from preliminary study that substantial differences in rates of growth of productivity exist within the service sector. It may be that an analysis of such differences would provide some insight as to why services as a group tend to improve their output per man less rapidly than do the goods industries. Furthermore, there are a number of important conceptual problems concerning the measurement of output and input in service industries which are likely to be brought out more clearly by a consideration of detailed industries. Finally, the analysis of changes in productivity over time in selected service industries may provide some guidance for the study of inter-country differences in productivity at a given point in time".

and current concern over productivity growth, have stimulated interest in productivity measures for this expanding sector" (op. cit. p. 3).

The methodological progress in the calculus of the output of the industries strengthened the view that productivity growth in the service sector is much weaker compared to the more *progressive* manufacturing sector. As maintained e.g. by OECD (2005) the weaker productivity growth of services is attributable to a high labour-intensity of production, low expenditure on R&D, as well as low volumes of international trade and regulated, often non-competitive markets[6]. The statistical or industry perspective to service productivity corresponds to what Metcalfe and Miles (2006) call *assimilation or the macroeconomic school*. The basic idea here is that most economic attributes of services are *regarded* fundamentally similar to those of manufacturing sectors. If there are differences, these are more a matter of quantitative placement on a number of continua. Both services and manufacturing can be effectively studied and statistically documented according to the methods and concepts developed for manufacturing. "Such a perspective characterises a great deal of economic and statistical thought, and the work of many quantitative analysts of innovation, trade, growth and productivity. In terms of measurement, the implication is that at most, minor modifications to conventional survey and other instruments will be required" (Metcalfe and Miles, 2006, p. 61). The macroeconomic school with its dynamic reflections is discussed at further length in Section 3.3.

Towards the end of 1980's the complexity of service output gained a growing academic interest among the scholars of service marketing and service innovation (Gadrey, 1988). In particular, the perspectives of service marketing put forward the intrinsic value of customer relations and the quality of service perceived by the customer (Gummesson, 1988) as the main criterion in assessing service productivity. The urgency of improved measurement of service performance was accompanied by an upswing of service innovation research in the 1980s (Salter and Tether, 2006). As the characteristics of service innovation differentiate it from the innovations in manufacturing, new analytical tools were needed, accordingly[7]. In reference to the characterization by Salter and Tether (2006), the demarcation school in service innovation focuses on the organizational design and innovation in knowledge based-

[6] Accordingly, the faster growth of productivity in manufacturing draws e.g. on higher capital-intensity. The reasoning stressing the controversy is still prevalent (OECD, 2003; 2005a).
[7] For the innovations of knowledge-based services, in particular, the role of hard technologies plays a less prominent role (Tidd and Hull, 2003).

services[8]. Such a view was supportive of the parallel ideas in service productivity as well (Gadrey and Gallouj, 2002).

Demarcation or the socio-economic school maintains that service activities and performance are highly distinctive from manufacturing (Metcalfe and Miles, 2006). "They are often poorly understood, but what is known makes it clear that in many respects their dynamics and features…require novel theories and instruments. This [demarcation] approach is displayed in many case studies of services activities, such as specialised studies of innovation, internationalisation, and productivity in services" (op. cit. p. 60). This suggests that new instruments are required for investigation of service sector or that the results of established instruments need to be interpreted in new ways. In reference to Gummesson (1995) demarcation is intrinsically a matter of redefining services and seeing them from the customer's perspective; activities render services, things render services. The shift in focus to services is a shift from the means and the producer perspective to the utilization and customer perspective. The socio-economic school is discussed at further length in Section 3.4.

3.3 The macroeconomic approach

The basic elements in the macroeconomic (statistical) analysis of service productivity, or the assimilation school, are the neoclassical theory of production, mathematical economics and econometrics as well as the industry statistics. The unifying features of the macroeconomic school are the statistical and quantitative techniques, which are applied at a high level of economic aggregation. Hence, while the empirical data employed in the statistics is collected from individual firms and their productions sites, the data is aggregated to show the productive performance of industries, economic sectors (manufacturing and services), and the entire economies. It is also central to note that the statistical conclusions of the *macroeconomic* productivity derive actually from the neoclassical *microeconomics,* where the productivity of a firm denotes the *efficiency* in transforming the inputs to the amounts of outputs (Kreps, 1990; OECD, 2001). The main assumption of the neoclassical theory is that the productivity of firms in an industry is unchanged in short run market equilibrium. Productivity growth of the firms and industries thus imply that markets are in disequilibrium, which may take place

[8] Increasingly, scholars in service innovation work in the *synthesis* tradition. Synthesis recognizes the importance of both technological and organizational forms of innovation and the complementarities between them (Salter and tether, 2006).

in a long run (Varian, 1984; OECD, 2001) [9]. The main focus in assimilation is, however, the practical policy implications. As productivity (efficiency) is seen as the major determinant of competitiveness, the main focus is on how productivity levels and growth rates change over time in different industries, and within the specific industry in different countries. Based on econometrics the macroeconomic analysis aims explain the differences in the observed productivity growth rates and to come up with policy recommendations. A prominent example is the debate whether and why services display a 'productivity gap' relative to the manufacturing sector. Accordingly, the discussion in the following sub-sections is geared to the statistical presentations of the productivity of services and the main conclusions thereof.

3.3.1 The benchmark of productivity levels and growth

The neoclassical theory of labour productivity and the total factor productivity (TFP) is applicable to a comparative analysis across countries and industries. Based on industry data of national accounts comparisons are made for the *levels* and the *growth* of productivity. In the level accounting, productivity is usually measured by the current value added of production relative to the quantity of labour inputs, measured most often by the hours worked (Inklaar et al., 2006). Whereas the cross-industry comparisons of the labour productivity levels reflect mainly the differences in the technological characteristics of industries, the inter-country comparisons of industries enable and are used for the assessment of the productivity differentials within a specific industry. For instance, the Finnish data shows that manufacturing and services are evenly distributed in high and low productivity industries (Viitamo, 2005). Consistent with other observations as well (Inklaar et al., 2006), the Finnish evidence shows that one of the highest ranking industries in productivity levels is financial intermediation (inclusive of the banking services). This contrasts with the general policy-based argument that the marketed services are lagging behind the manufacturing sector in the productive performance. One of the main conclusions on the international comparisons of the productivity levels is

[9] In case of a firm, industry or economy, the growth of labour productivity (LP) with respect to time, dLP/dt, can be decomposed into the summed changes in the capital-labour ratio d(K/L)/dt called capital-deepening, and total factor productivity dTFP/dt. The change in capital deepening is the impact on productivity, which comes from the substitution of capital for labour, while the change in the total factor productivity measures the impact on labour productivity caused by the disembodied technical change. The total factor productivity measures the output per unit of some combined set of inputs. A change in total factor productivity reflects a change in the output that cannot be explained by a change in the quantities of the examined inputs. As a result, total factor productivity reflects the joint effects of multiple factors, including new technologies, economies of scale, managerial skills, and changes in the managerial practices and organizational design.

that the overall advantage of the US economy relative to the EU has increased since the end of the 1990s (Van Ark, 2006). In particular, the statistics show that *the gap is to a high extent caused by the decreased levels of productivity of the market services in the leading EU countries relative to the USA*. The US market services, which show the highest productivity advantage over the EU 15, are banking and ICT-producing services, such as software production (Van Ark, 2006)[10].

From a competitiveness point of view, more relevant information can be obtained from the productivity growth. The standard neoclassical growth accounting framework suggests that the growth of the real output (value added) between successive periods can be decomposed into the increase in the quantity of the productive services of inputs, most notably capital, labour and intermediate inputs, and the increase in total factor productivity (TFP) indicating technological change. Neglecting the impact of intermediate inputs and transforming the relation into a productivity formula, the decomposition suggests that the growth of labour productivity (value added/hours worked) is attributable to the increase in TFP and capital-deepening, measured by the capital-labour ratio. In the calculus of productivity growth, the time series of current value added are deflated to get proxies for the annual changes in the real outputs. In more sophisticated models capital-deepening is further decomposed into ICT and non-ICT components, and the reallocation of hours is added to measure the shift of labour services between productive and less productive industries[11]. A positive change in labour quality in turn implies a shift of employment towards workers with higher wages and hence, by assumption, higher marginal productivity (Inklaar et al., 2006). With regard to international comparisons, one of the main conclusions derivable from the statistical analysis is that *the EU is lagging behind the USA in the labour productivity growth of the market services.* Moreover*, the productivity growth of market services has been markedly slower than the productivity growth of the manufacturing sector in the EU*.

[10] International intra-industry comparisons of productivity levels, in particular, are hampered by the deficient and incomparable data, and the lack of robust techniques in transforming the current value added into a uniform comparable scale (Inklaar et al., 2006). Country-specific 'structural' differences in the industries matter as well. In that case the outputs that are compared may actually be incomparable. At the higher levels of industry aggregation the biases are less effective and thereby general conclusions on the productivity differentials can be drawn.

[11] The models differ by the extent of decomposing the sources of growth. Drawing on *firm level statistics*, a microanalytic application of the growth accounting model illustrates the impact of company structures on the productivity of industries (Malinranta et al., 2007). In this setting the overall growth of productivity can be decomposed into productivity growth within the incumbent companies, the productivity impact induced by reallocation of production among the incumbent firms, and the productivity impacts generated by the exit of low-performing firms from the industry, and the entry of high-performing firms into the industry (OECD, 2003). Empirical evidence demonstrates that all these components, reflective of *Schumpeterian creative destruction,* are effective in industry-specific productivity growth (OECD, 2003).

The comparison of the growth of the real output of the market economy[12] in the EU and the USA shows that the meager growth of TFP in the EU 15 has been the major explanation for the superior performance of the US economy in the 2000s. As illustrated in Figure 8, the competitive advantage of the US economy is pronounced in the distributive trade as well, where the technological advance and the utilization of ICT (information and communications technology) have been extensive. In particular, on the basis of the growth accounting method it can be concluded that for the financial and the business services, as well as personal and social services, the contribution of TFP has been negative in the EU 15. This is also highlighted in Figure 8.

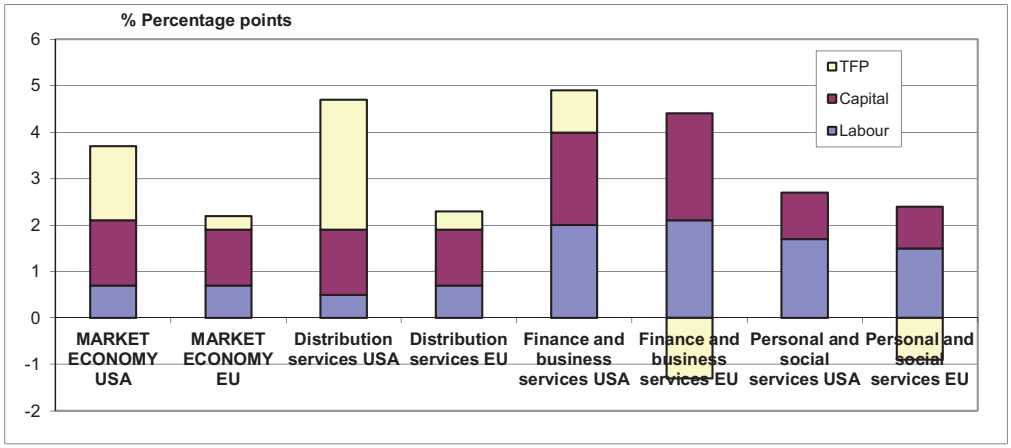

Figure 8. Contributions to the growth of real value added in services, 1995-2004 (Inklaar et al., 2006).

3.3.2 The argument on the 'stagnancy of services'

The economic development of the OECD countries up to the end of the 1990s shows an imbalanced growth between the manufacturing and the service sectors. That is, the labour productivity of the manufacturing sector has shown higher growth rates than services in the majority OECD countries, which has coincided with the reallocation of labour from the manufacturing sector to the service sector. Such a development has created a gloomy picture on services as a 'stagnant sector' in the advanced economies (Wölfl, 2003; OECD, 2005a). The potential stagnancy and its wider economic implications

[12] The production of the market economy equals to the GDP (gross domestic product), excluding the public services.

were addressed – and anticipated - by Baumol (1967) much earlier. According to Baumol's *cost disease theorem* an unbalanced growth across productive sectors induces resource reallocation towards the less dynamic sector, eventually slowing down the aggregate growth of production and productivity in the economy. Apart from the zero growth steady state, the model and the scenario outlined by Baumol (1967) seem to fit, at least from a sectoral perspective, with the historical evidence on many OECD countries. In reference to the assimilation reasoning and the growth accounting framework, the underlying explanation for the unbalanced growth draws on the *quantifiable* differences between manufacturing and service sectors. Hence, the observed weaker productive performance of services is attributable to a high labour-intensity and intangibility of production, the associated difficulties in exploiting information and communications technologies (ICT), as well as barriers to innovation activity, international trade and competition (OECD, 2003; OECD 2005a).

The proposition on the *stagnancy of services* requires further qualifications, however. In deviation to the EU there has been a marked shift in the major Anlgo-Saxon countries[13] towards a service economy in the 2000s. In these countries the contribution of market services to the labour productivity of the market sector (market economy) exceeds the respective contribution of the manufacturing sector (Inklaar et al., 2006). An important determinant explaining the divergent development is the intensity of competition and the liberalization of the markets. With respect to product market regulation (PMR-index) and employment protection legislation (EPL-index) the Anglo-Saxon countries are the most pro-competitive of the OECD countries (OECD, 2005b). Hence, the suggested stagnancy of the service sector concerns mainly the continental EU, and is attributable to regulation and other restrictions on the common service markets. With the geographic differences, the statistics show a high variance in productive performance across the service industries. This may also reflect the existence and the influence of the *asymptotically stagnant services* that are neither completely stagnant nor completely progressive (Baumol et al., 1984)[14]. For instance, telecommunication, banking and finance with a marked increase in the ICT capital deepening in the 1990s and 2000s, have shown a substantial productivity growth comparable to the most progressive manufacturing industries (Wölfl, 2003; Viitamo 2005). In the service typology by Salter and Tether (2006), banking and insurance companies are systems firms with "highly developed division of labour, sophisticated technologies (including

[13] The referred Anglo-Saxon countries are the USA, the UK, Canada and Australia.
[14] The identification of this intermediate industry category refines the original argument in Baumol (1967).

ICT), and complex organizational forms" (op. cit. p. 13). Hence, the fact that *banking and insurance industries share the characteristics of manufacturing provides a qualified support to the assimilation argument*. It also indicates, however, that these industries deviate from the *traditional* labour-intensive services.

In reference to the unbalanced growth model of Baumol (1967), the deduction on the aggregate productivity slow-down caused by stagnant services assumes that the services are produced for final consumption. As Baumol (2002a; 2002b) notes, the inference looses validity if the services are used as intermediate inputs (business services) in other industries[15]. The positive *indirect effect* of intermediate services on the aggregate productivity of the economy has been demonstrated empirically by Wölfl (2003)[16]. In particular, Wölfl identifies a *positive impact for the intermediate use of ICT-based financial and business services on the productivity growth of the manufacturing industries.* More generally, the service sector has been regarded as the main case of the so called *Solow paradox*. The paradox refers to the empirical observation by Solow (1987) that the diffusion of ICT in the 1980s and 1990s *seemed* to have a negligible effect on the productivity of the economy. The paradox appears to be distinctive for services, where ICT investments are more extensive, and the labour force is on average more educated than in the more productive manufacturing sector (OECD, 2003; Wolff, 2003). A plausible counter-argument maintains, that the sectoral statistics do not reveal the actual productivity impacts of ICT at the firm level. This has been demonstrated by a number of econometric studies based on firm level data (OECD, 2004). For instance, the evidence of Finnish firms shows that the positive impact of the labour with ICT skills on the firm's productivity is greater in services than in the manufacturing sector (Malinranta and Rouvinen, 2004)[17].

On balance, ICT may have aggravated the problems of measuring productivity "as it allows greater customization, differentiation and innovation in the services provided, most of which is difficult to capture [even] in the statistical surveys" (OECD, 2003, p. 57). Baumol (2002) notes, that technical

[15] Oulton (1999) has demonstrated that in the case of intermediate services, which constitute a substantial share of the employment in the economy, a shift in labour force in the service direction will add to aggregate productivity growth. This may be the result, even if the productivity growth of the intermediate services is low (Baumol, 2002b; Oulton, 1999).
[16] More specifically, the intermediate demand for services exerts a substantial influence on the total factor productivity, or the technical efficiency of the economy. This is a prime example of the causality investigated by the endogenous growth theory.
[17] The authors observed that manufacturing firms benefit from ICT-induced efficiency in *internal* communication, whereas service firms benefit from efficiency in *external* communications.

progress often provides services of far higher quality than in the past, which is the progressive side of the production. However, the lack of substantially labour saving technology condemns their cost to rise continually and persistently far faster than costs in other sectors of the economy. In a similar vein, innovations in some services may bring about industry-wide externalities resulting in a totally new technological regimes and higher quality of the services. Owing to intensive competition, prices of the improved services may be unaffected, however[18]. As noted by Inklaar et al. (2006), these observations raise new questions of the old debate on the need to adjust productivity measures for user's convenience and adjustment for inputs for utilization rates. This implies that there exist apparent biases in the measurement of service productivity in the macroeconomic approach[19]. In conclusion, the unqualified argument on the stagnancy of services put forward by the assimilation regime cannot be unambiguously validated with the empirical data and the econometric analyses. As suggested by the strong interdependencies between manufacturing and service industries, the question may be irrelevant as well. Instead, a central and robust conclusion provided by the standard macroeconomic analysis is the association of relatively high labour productivity levels with a slow productivity growth of market services in the EU. As noted by Inklaar et al. (2006), this may be caused by regulation and excess capacity in the EU's consumer service markets. The empirical evidence on the product market and labour market regulation in the OECD countries is supportive of such a conclusion.

3.3.3 Implications of the endogenous growth theory

The neoclassical growth accounting framework generates interpretable results in a comparative setting and the equilibrium conditions which the neoclassical approach draws help guide measurement of parameters that would otherwise be difficult to identify (OECD, 2001). Hence, if the assumptions of a hypothetical equilibrium world are contrasted with the real world imperfections, a spectrum of sources

[18] For example the introduction of CAD (computer aided design) and CAE (computer aided engineering) in business services brought about radical changes over the array of industries.

[19] A distinct line of explanation for the apparent stagnancy of services points to biases in *productivity measurement*. In particular, doubts on the reliability of measurement are cast by zero or negative productivity growth rates of business services. Hence, the observed under-performance of the market services seems to result from the biases in computing the components of service productivity indicators (Wölfl, 2003; Griliches, 1994). On the input side, a specific source of computational problem is part time labour, which is characteristic of many service industries. Moreover, the way how constant price value added is derived influences the computational productivity of services and their contributions to the GDP (Wölfl, 2003). Compared to manufacturing, it is difficult to isolate the price effects that result from the changes in the quality or mix of services from pure inflatory effects. Depending on the type of deflator used, the productivity growth-paths show high variance in the market services. In many service industries the value added is made up of wages, which implies that labour productivity growth may be 'automatically' close to zero (Djellal and Gallouj, 2008).

for productivity growth can be identified. As stressed by organizational economics, growth and productivity are driven by innovation and technological change, which is possible only in the presence of scale economies and information asymmetries. Market imperfections are therefore necessary conditions for any innovations and productivity growth to take place (Nelson and Winter, 1982; Dosi et al., 1998). The main shortcoming of the neoclassical theory is the assumption that technological innovation is purely exogenous, affecting the entire industry instantaneously. In the growth accounting framework industries are monolithic entities isolated from the wider economic context, where firms actually operate. Growth accounting ignores the inter-industry linkages, firm-specific advantages, and dynamics of competition, which are the underlying sources of economic progress (OECD, 2001). The *endogenous growth theory*, which gained a wider acceptance since the mid-1980s, also stresses the importance of TFP as the main source of economic growth (Romer, 1986; 1994). In contrast with the neoclassical theory, the endogenous (new) growth theory abandons economic equilibria and examines factors explaining the growth of technological change. In reality, all economic progress results from complex interdependencies between firms and their business environment.

Accordingly, whereas the endogenous growth theory lies outside of the theoretical scope of 'assimilation', it provides an analytical extension towards more realistic macroeconomic framework for service productivity. More specifically, demarcation contrasts with the neo-classical regime, but shows a high degree of consistency with the premises of the endogenous growth theory. The new growth theory posits that knowledge and technology are characterized by increasing returns which drive the process of growth (Cortright, 2001)[20]. Knowledge is seen as a non-rival and non- excludable public good. Once provided for one person, knowledge services are equally available to all. This implies that free market economy tends to under-invest in public goods and knowledge. Therefore, *market failure* provides a common rationale for government funding of the production of many *public services,* like

[20] Given the assumption of increasing returns to scale in technology and knowledge, the opportunities for economic growth are practically unlimited. In comparison to traditional goods and services, the market for knowledge has a different competitive dynamics and is supportive of what economists call monopolistic competition (Chamberlain, 1933). Businesses and firms compete to gain a monopoly position with differentiated products and services that can be augmented by quality and variety. While competitive, markets are essentially dynamic, which cannot be modelled by a smooth adjustment towards a unique neoclassical equilibrium. History and path-dependencies mould the characteristics of industries and firm-specific advantages, which are thus subject to evolutionary change (Nelson and Winter, 1982). Creative destruction of businesses, as pointed out by Schumpeter (1942) is assigned a prominent role in enhancing technological change and productivity (Romer, 1994). Within a strand of the endogenous growth theory, called the neo-Schumpeterian approach (Aghion and Howitt, 1992), monopolistic competition of innovating facilitates the creative destruction of industries and TFP growth in the economy (Malinranta and Ylä-Anttila, 2007)

defence, education and public research and development. The government has a dual role in the production and dissemination of public knowledge with substantial externalities and safeguarding the appropriability of the returns from private innovation. The latter issue is related to property rights protection and is of particular importance for knowledge-based services (Salter and Tether, 2006; Teece, 1986)[21]. While a focused analysis of services has been limited in the endogenous growth theory as well, empirical studies indicate that service activities play a prominent role in enhancing total factor productivity at the industry and economy level. These influences are reducible to the conceptualization of KISAs (Knowledge-Intensive Service Activities) and their role in intra-firm and inter-firm innovation processes[22]. Depending on their organizational context i.e. the issue of make-or-buy[23], KISAs play several roles in knowledge creation[24]. They serve as a *source* of innovation when they initiate innovation activities in client organizations. KISAs serve as *facilitators* of innovation when they support an organization in the innovation process. Finally, they serve as *carriers* of innovation when they aid in transferring existing knowledge among or within organizations (Miles, 1999)[25].

Given the diversity of knowledge creation patterns, the KISA-approach involves an implicit notion that all forms of service activities can potentially contribute to TFP. *This conforms to the endogenous growth arguments* as well[26]. An interesting case in such diversity are systems firms (Salter and Tether,

[21] A precondition for an effective economic policy is an institutional environment that supports technological change (Romer, 1994). While formal and informal institutions shape the incentives for the creation of new knowledge, institutions also have to change over time to produce the incentives and rules required by new markets and technology. Adaptive efficiency of institutions, as suggested by North (1990), is conducive to a competitive techno-economic business environment. To give an example, the growth study of OECD (2005c) identified four dimensions in the business environment that explain the enhancement of total factor productivity (TFP) in the OECD economies. Institutional determinants that foster 1) the utilization of ICT, 2) innovation, 3) human capital, and 4) entrepreneurship, explain almost 60% of the variation in the pick-up in TFP growth from the 1980s to the 1990s in the OECD countries (excluding the United States). Innovation, which is the common denominator to all these growth drivers, is according to Baumol (2002a) predominantly a service activity. "…and what is more important that innovation for overall productivity growth?" (ibid. preface).

[22] According to OECD (2006) "KISA refers to the production and integration of service activities undertaken by firms or public sector actors in the context of manufacturing or services, in combination with manufactured outputs or stand-alone services. Typical examples of KISA include research and development, management consulting, information and communications services, human resource management and employment services, legal services, accounting, financing, and marketing-related service activities" (op cit. p. 7).

[23] A more detailed analysis of the organizational setting of KISAs is provided e.g. in Viitamo (2003).

[24] The concept of KISA involves the idea that the internal and external services can be analyzed with the common analytical framework.

[25] The role of KISAs is parallel to the role of KIBS (Knowledge-Intensive Business Services) as discussed e.g. by Gallouj (2002) in the context of inter-firm relations. Owing to a broader perspective, the activity-based analysis of KISAs is more general with regard to the processes facilitating TFP growth.

[26] It needs to be noted that the KISA argument is not explicitly present in the basic endogeneous growth models. The KISA argument can just be extrapolated.

2006) represented by *financial services and banking*. As noted above, the ICT-driven capital deepening in the production of banking services has contributed directly the growth of labour productivity and TFP of the financial services and thus the market service sector. These influences are further leveraged by the indirect TFP- enhancing effect of the financial and the advisory services provided by banks, which are used as intermediate inputs by a number of *downstream* industries. Showing high knowledge-intensity the advisory services perform the three knowledge creation functions of KISAs identified above. In particular, the characteristics of the banking industry as a hybrid between classical services and manufacturing, and its integral role in national innovation systems reflect the evolving change in the service innovation paradigm from demarcation to synthesis. According to Salter and Tether (2006) this shift recognizes the major changes that occurred in managerial practise, the shift away from manufacturing vs. service companies towards organizations focused on the realization of value through offerings of solutions. This shift requires incorporation of many tools and theories from outside traditional innovation studies, including organizational behaviour, social networks, marketing, strategy and communications studies. Greater attention has been placed on organizational innovation and how new organizational practices may shape the innovation process in service industries (Salter and Tether, 2006).

3.3.4 Summary

The macroeconomic framework or assimilation represents the statistical and hence the 'official truth' on the productivity of service industries. The macroeconomic approach builds on an internally consistent and deductive analysis of the neoclassical theory of a firm and production. Growth and level accounting enable decompose the contributions to labour productivity systematically and consistently into the effects of capital deepening, other sources of growth and the total factor productivity. In the mainstream of the statistical analysis, the economy and industries are treated technically as if it they were a single firm. This simplification aims to explain the observed productivity growth. For instance, innovation and technical advances, which are supposed to be exogenous, are seen to diffuse instantaneously among new and old establishments within an industry. As a result, a new equilibrium will be attained at a level where the total factor productivity (TFP) of the industry is higher[27].

[27] OECD (2001) notes further that what emerges as a conclusion is the complementarity of approaches: (growth) accounting and productivity measurement allows one to quantify – in a systematic and consistent way – the proximate sources of

With the supplementary assumption that new technology is adopted by new establishments, productivity growth occurs through entry and exit, and this leads to re-allocation of resources and production. Neoclassical micro-level studies on firm dynamics, entry and exit and re-allocation of resources highlights the question of how innovation and Schumpeterian creative destruction translate into industry-level productivity growth. In general, the neoclassical equilibrium assumption fits uneasily with the notion of innovation and productivity growth, however. Evolutionary and organizational analysts (Dosi et. al., 1998; Nelson and Winter, 1982) for instance, argue that innovation and technical change occur as a consequence of information asymmetries and market imperfections. Innovations and information asymmetries are one and the same phenomenon. Such asymmetries can scarcely be termed market imperfections when they are necessary conditions for any technical change to occur in a market economy.

The general point made by the evolutionary and organizational economists is that equilibrium concepts are inappropriate for the measurement of productivity change. If equilibrium truly existed, there would be no incentive to search and innovate, and there would be no productivity growth. These considerations lay at the core of the endogenous growth theory, where the total factor productivity and technological progress are regarded as endogenous variables. Technological progress in the economy or the industry is explained predominantly by the exogenous improvements in the of the firms' framework conditions (business environment). Through the prevalence of knowledge-intensive service activities (KISA), the new growth theory links the macroeconomic approach to the synthetized view on service innovation and the socio-economic view on service productivity. The inter-linkage is further established by the parallel shift in focus from the given organizational setting of services to the number of characteristics of service activities and processes.

The benefits of the new growth theory are acknowledged by socio-economic scholars as well. Gadrey (2002) notes, however, that "recent economic analyses (based on the evolutionary and neo-Schumpeterian approaches), which are more sensitive to the "black box" of the firm…and more inclined to accept a broader definition of innovation, have not succeeded in ridding themselves of this technological bias. In such analyses services are generally dominated by the suppliers of their technical

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growth. It has explanatory power in that it captures the workings of supply of, demand for and substitution between categories of measurable inputs.

equipment" (Gadrey, 2002, preface). Accordingly, in reference to the recommendations of OECD (2001) the macroeconomic analysis needs to be complemented with institutional, historical and case studies if the objective is to explore the underlying causes of growth, innovation and productivity change (see Section 5). The strengths and weaknesses of the macroeconomic paradigm are summarized in Table 1.

Table 1. Strengths and weaknesses of the macroeconomic paradigm.

Strengths	Weaknesses
Sound theoretical basis	Supply- and efficiency-orientation
Simplification of complex reality, and internal consistency between causes and effects	Assimilation of productive activities with a black- boxed production function
Consistency between theory and empirical data	Unrealistic assumptions of neoclassical theory and equilibrium (the problems are mitigated in the endogenous growth theory)
Comparable results across industries and countries	Inability to explain total factor productivity in a credible and comprehensive way
High potential in the analysis of endogenous growth, and the higher quality of data	High level of aggregation, disregard of effectiveness and customized quality (This also holds for the endogenous theory)
A uniform and quantifiable measurement of competitiveness	Ambiguity in interpretation of inconsistent findings (paradoxes), dependence on deficient and incomparable data

3.4 The socio-economic approach

Unlike assimilation, the demarcation school does not constitute a coherent framework for the analysis of service productivity. As pointed out in Section 3.4, demarcation draw on various disciplines of service research, such as service marketing and service innovation, and quality management, which represent focused sub-fields in service management. The approach consisting of these sub-fields with the shared focus on service productivity is called here *the socio-economic school*. Originally, the socio-economic school was dominated by the demarcationist approaches to services but to date synthetized accounts on services are increasingly common in the conceptualization and the measurement of service productivity as well[28] (cf. Gadrey and Gallouj, 2002; Djellal and Gallouj, 2008). As pointed out by Metcalfe and Miles (2006), demarcation regards services as distinctive and hence it disregards the

[28] As pointed above, scholars in service innovation work in the *synthesis* tradition. Synthesis recognizes the importance of both technological and organizational forms of innovation and the complementarities between them (Salter and tether, 2006).

theoretical premises of assimilation[29]. More fundamentally, demarcation questions the accounting methods of the contemporary macroeconomics. Gadrey (2002b) for instance, see that as far as the manufacturing industry is concerned, increasing variety, product innovations that reduce product life cycles and in some cases the introduction of individualised or 'customised' products, together with the sale of integrated packages (products/services/after sales), have all served to weaken measurement conventions based on quality standards that were comparable over time. The difficulties and uncertainties of the *conventions* are further compounded in the service sector. While some service industries provide standardised services, many others do not readily lend themselves to the application of the traditional industrial concepts. Gadrey (2002b, p. 2) asks "what do terms such as growth and productivity gains mean when applied to services such as consultancy, education, health, social welfare, research or insurance?" If the main pillars of contemporary developed economies are services, permanent innovation, knowledge and the new information and communication technologies, it requires us to move away from the economic growth paradigm towards a new paradigm based on the evaluation of economic and social development…we need to shift away from the economics of measuring flows and costs towards the socio-economics of judging improvements in state, quality and individual and collective well-being (Gadrey, 2002b).

The above considerations imply that the key variable in assessing economic performance is *effectiveness*[30]; the realization of the benefits of goods and services that customers expect. Gummesson (1995) for instance, insists that services should be redefined and seen from the customer perspective: the shift in focus to services is a shift from the means and the producer perspective to the utilization and the customer perspective. However, as with the 'neoclassical world' based on the producer's efficiency, the 'socio-economic world' of effectiveness that is guided by customer's needs, is a hypothetical ideal. In reality, customers' effectiveness and quality are always constrained by the imperfections of markets, uncertainty of preferences, as well as the technological opportunities available for the production of goods and services. Hence, regardless of the priority given to the customer's view, most socio-economic models recognize the necessity of analysing productivity from

[29] More specifically, demarcation contrasts with the neoclassical regime, but shows a high consistency with the premises of the endogenous growth theory.

[30] It needs to be noted that the term effectiveness in this context refers to the socio-economic i.e. the traditional customer-centric interpretation of the concept (cf. Tangen, 2005). This definition differs from the 'producer's perspective' which is introduced in Section 2.4.8 and used in the value creation approach.

the holistic perspective of service episode. Prominent examples are Sundbo (1999; 2002) on service modularization and Grönroos and Ojasalo (2004).

3.4.1 Transformation of inputs to outputs

Owing to their discontinuity and non-repetitiveness service processes cannot usually be prescribed in terms of smooth neoclassical production function. Gadrey (2002a) notes that the production function of most services can be analyzed as a combination of three set of functions, or *purposes* each being associated with different types of technologies, organizations and efficiency criteria. *Informational functions* (1) are direct components of the delivered service management functions internal to an organization. This recognizes the fact that information and knowledge are essential ingredients of service output and input. The *functions of material logistics* (2) are by definition characteristic of specific services, such as transportation and retailing. The *direct service functions* (3) are associated with the face-to-face contact with clients and involve care, assistance and advice to customers. Whereas the explicit form of the physical production function for services is not known or does not exist, service production can be described as a generic process where inputs are transformed into outputs. Characteristics of most manufacturing processes as well, transformation in services is an irreversible process as the outcome of the process cannot be re-transformed back into inputs. For the goods production the transformation is inherently physical, leading to a new tangible outcome. Services transformation is directed to an existing object - physical or non-physical - resulting in an improved state of the object. Gadrey (2002a) identifies four types of objects in service transformation[31] which are

- goods and other technical systems which are owned by the customer and which the provider repairs, transports[32], maintains and secures,
- coded and standardized information (including money in its pure symbolic form) which the provider transfers, processes or manages on behalf of the customer,
- the dimensions of the customer; body and health, intellectual capacities, spatial locations, and
- the collective knowledge and competencies of organizations which are improved under the request of the organization.

[31] Transformations conducted by customers themselves are excluded from the typology here. In other respects the typology is applicable to all service activities.
[32] In particular, transportation and communication can be understood as transformations over space or location.

The typology of service transformation and the relations between the key elements are illustrated in Figure 9. The *objects* of transformation are characterized by the *initial state* preceding the *transformation*. Service transformation, which the customer usually participates in, is conducted by an independent[33] service provider. The combination of *internal and external resources* (labour, capital, energy and information) expended in the transformation defines the service production *technology* with respect to each type and object of transformation. The outcome of the transformation is reflected by the *final state,* which may restore or improve the original state[34]. Examples of restoring transformations are health care and maintenance services, while an improving transformation is characteristics of knowledge-based business services[35]. The output of a service producing firm is determined by two dimensions, the quantity of services, which is often highly obscure, and the outcome of a single transformation process, i.e. the final state or quality. For the characterization of the quantity of services, Gadrey (2002a) suggests a distinction between the *number of cases* and the *case-mix complexity,* which approximate the service output variation. Whereas the index of the former measures the number of clients served within a unit of time, the index of the latter accounts for the degree of the complexity of a problem solved in each case of transformation. Hence, instead of pursuing economies of scale (cost-based strategy) with high customer flow (frequency), the service provider can increase output by reducing the frequency and solving more complex problems as well. At the optimum the service provider may differentiate between the customers' preferences and select a mix of complexity of services showing the best *fit* with the capabilities of the service provider.

The third component of service quantity identified by Gadrey (2002a) is *service intensity*, which is regarded as a residual consisting of the dimensions of quantity not captured by the index of case complexity. Service intensity refers to the amount of resources devoted to 'face-to-face interaction' with the customer (customer service), and together with the other two indices it determines the overall quantity of the services provided by a firm. It can be seen that none of the Gadrey's components alone is equivalent to the effectiveness concept developed in Section 3.5. In the light of that definition effectiveness is a sub-dimension of complexity of the case (technical aspect) and service intensity

[33] An independent service provider refers to a separate economic unit e.g. a firm (cf. Hill, 1977).
[34] Through the process of depreciation, the original state weakens and leads to the initial state.
[35] Note that transformation of information as defined by Gadrey (2002a) is not included in the model here. Transformation of information improves the state of individuals and organizations, and this leads to an improved knowledge base of the customer.

(social aspect). For both components effectiveness measures the extent to which the service (process and outcome) is tailored to an individual case or customer.

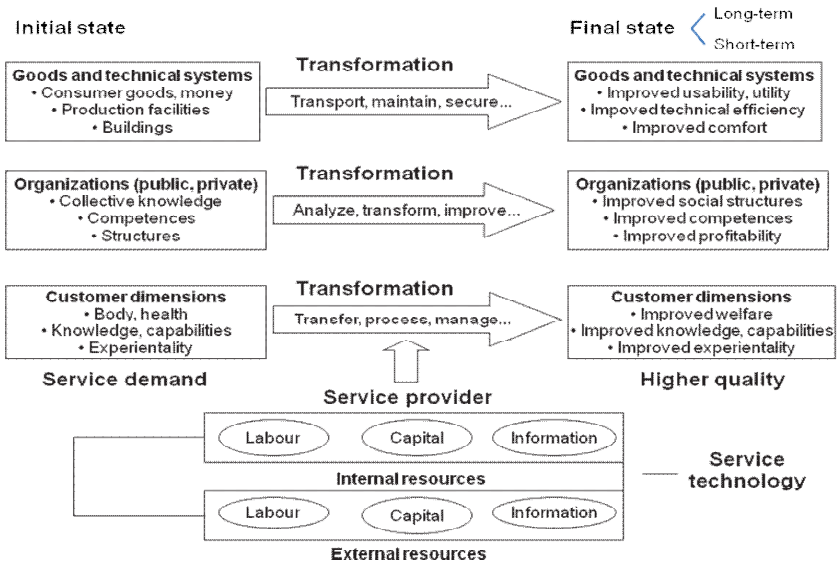

Figure 9. The main dimensions of service transformation (modified from Gadrey, 2002a).

In Figure 9 the *outcome of a service* process is reflected by the final state, or quality, which determines the total value added distributed between the provider, the customer and the society (Sundbo, 1999). A distinction is made between short-term and long-term outcomes, of which the latter may be unknown at the transformation stage. The quality of a service can be assessed objectively or subjectively. In the case of *objective* quality assessment, the specification of the contract *ex ante* is compared with the outcome of the service delivered *ex post*. Accordingly, the quality of the service can be defined as a degree of fulfilment of the specifications of the service contract. In economics this is sometimes called *efficacy*[36]. Objective quality assessment can be used for standard business services and product-related consumer services e.g. maintenance. *Subjective* quality assessment is the norm, when neither the provider nor the customer can specify quality standards prior to the production and delivery. In subjective quality assessment, the customer has certain expectations on the service *ex ante,* and these

[36] In many cases there are only two consequent states, success with the realized utility, and failure, which implies an unchanged utility for the customer.

expectations are compared with the actual service outcome (Sundbo, 1999). Subjective quality assessment is characteristic of customized business services and consumer services, which are usually differentiated across service providers[37]. By the same token Gummesson (1988; 1998) notes that traditionally the analysis of quality has built on the dichotomy between manufacturing and services. The technology-based interpretation applied in manufacturing equals quality to the conformance to specified requirements. A customer-driven (subjective) interpretation prevails in services where quality refers to fitness for use. According to Gummesson (1988) the two definitions can be united in the concept of customer-perceived quality. It consists of technical or output quality (technical service), which is a matter of properly producing the core benefit of the service, and functional or process quality, i.e. the way in which the service is delivered (customer service). Conceptually, both types of qualities can be approximated by a utility coefficient, which measures the ratio between the realized level of utility and the level of customer's expectations or the contract specifications. With values between 0 and 1 of the coefficient, the customer is not fully satisfied, while for values exceeding 1, the customer receives a higher utility than specified in the contract, or expected by the customer (McLaughlin and Coffey, 1990)[38].

3.4.2 The user-producer perspective

The key premises for the analysis of service productivity are the intangibility of the service outcome, and customer involvement as a co-producer in the service production process (Nachum, 1999, Gummesson, 1998). These premises, according to the socio-economic view, cannot be captured by the standard macroeconomic framework discussed above. Owing to the impossibility of partitioning the service output into measurable units, service quantification is usually difficult to operationalize in practise (Grönroos and Ojasalo, 2004; Gadrey, 2002a). It should be noted that the producer-oriented productivity is not rejected *per se*, but such a productivity measure is inadequate to account for the effectiveness of a classical service[39]. The producer-based productivity concept is deficient also because the production of service is conducted within an *open system* (Grönroos and Ojasalo, 2004; Scott and

[37] Based on the data on financial and maintenance services, Parasuraman et al. (1988) have identified distinct dimensions of quality, which customers employ in assessing service performance. These dimensions are tangibles (facilities) of the provider, reliability, responsiveness, assurance and empathy.
[38] The notion of perception refers to the observation that *gaps* may exist between the service provider's perception of the quality and the customer's perception (Gummesson, 1988; Zeithaml et al., 1985).
[39] Furthermore, the quantification of the growth of the current value added of service through deflation entails a further bias, as the true quality of the service output is thus disguised (McLaughlin and Coffey, 1990; Vuorinen et al., 1998).

Davis, 2003). The openness follows from the customer's involvement as an input provider. While customer preferences are incorporated into the manufactured products, traditional production systems in manufacturing are closed systems, and traditional productivity models and measurement instruments are developed for such systems (Grönroos and Ojasalo, 2004). In such closed systems where customers are not directly involved in design and production processes, these assumptions make perfect sense, of course. "In service contexts, where the service process…to a large extent is an *open system*, they create confusion, lead to misleading measurements and may guide decision making astray" (Grönroos & Ojasalo, 2004, p. 416)[40]. In practise service processes may involve several contributors and beneficiaries, which are not compensated for their inputs or charged for the gained benefits and spill-overs. These external effects lie at the core of socio-economic thinking. In reality there exist innumerable hybrid organizations (networks), which are open to a varying degree, and provide flows of services not recorded in the firm's financial statement. Furthermore contemporary companies are networks, nor delimited hierarchies, and the productivity and quality issues affect all members of the network, not just the provider and the customer (Gummesson, 1998)[41].

Service co-production, in particular when production and consumption coincide, provides a rationale for differentiating between the producer's and customer's productivities (Parasuraman; 2002; Johnston and Jones, 2004). The point made by Parasuraman (2002) is that if the productivity growth of the service is interpreted and managed by the producer (*manufacturing* perspective), which implies enhancing the number of customers relative to a given quantity of the producer's resources[42], and separately from the customer's productivity, defined as a ratio of the service output experienced by the customer to the inputs provided by that customer as a co-producer, the two productivities are at odds

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[41] Intuitively, customer participation is a matter of degree, which thereby determines the extent to which the production system is closed or open. For instance, in the tendency towards *service digitalization*, where the service is performed exclusively by the customer, the production system is transformed from an open system into a closed system. Service technology, accompanied by undocumented co-involvement of several parties is, however, a source of inherent measurement problems. It is difficult, if not impossible, to define production technology, least of all assess the contribution of individual providers to the overall productivity. In particular, as the contribution of the client is not accounted or compensated by the providing firm, it appears as a negative utility or sacrifice incurred by the client (Ravald and Grönroos, 1996). While problematic, the measurement is not invariably regarded as a major shortcoming in the socio-economic analysis, since the main purpose is rather to demonstrate the mechanisms influencing the productivity and profitability of an individual service.

[42] This formulation corresponds to the definition of total factor productivity in the neoclassical analysis.

with each other. Improvement in one type of productivity is invariably accompanied by deterioration in the other. This follows from the assumption that the inputs of the producer and the customer are substitutes[43], and the stylized fact that increases in the number of cases per unit of time (producer's output) will decrease the utility (experience) of a single customer (customer's output)[44]. Instead, if the focus of the producer is geared to the quality of the service, and if the producer's objective is to enhance productivity, where the nominator is replaced by sales or profits the trade-off between the producer's and user's productivity vanishes. All else being equal, Parasuraman (2002) hypothesizes that a higher level of producer input will lead to higher levels of service quality, which enhances the output of the customer as well as the output (profits) of the producer. Figure 10 sums up the main points of Parasuraman (2002). Effect 1 captures the notion that as the producer channels more resources into service provision, the customer input should decline (the substitution effect). Effect 2 suggests that the extent to which changes in the producer's inputs trigger changes in customer input will depend on the way the company allocates the available inputs, i.e. *doing right thing* (McLaughlin and Coffey, 1990). If the producer increases its inputs but allocates them inappropriately, the corresponding reduction in customer input will be lower than if the producer's inputs are allocated appropriately (Parasuraman, 2002). Finally, effect 3 is the leverage of quality through the customer's output on the producer's output, i.e. the sales and profits.

Parasuraman (2002) assumes that the increase in the producer's input will always have a positive effect on the customer's productivity in the case of a single service. While the overall effect on the productivity and profitability of the producer remains thereby indeterminate in the model, the effect may be assumed to be increasingly positive when the allocation of the producer's input improves. By assumption, the allocative improvement diminishes the need for the customer's input, but it may also be expected to enhance the quality of the service. In conclusion, an improved allocation of producer's inputs, *ceteris paribus*, may enable higher productivity for both parties, even if the quantity inputs of the producer channelled to production are kept constant. Assuming that resource allocation is partly customer-specific, a corollary is that greater variety (differentiation) in terms of customer requirements (customization) does not necessarily reduce operational productivity (producer's) productivity

[43] If the inputs of the producer are diminished, the inputs of the customer have to be increased.
[44] In this sense the customer's productivity equals to customer-perceived value, which can be expressed as the ratio between the perceived benefits and perceived sacrifices (Monroe, 1991; Ravald and Grönroos, 1996).

(Johnston and Jones, 2004)[45]. This way the positive effect of an improved allocation of inputs on the overall productivity growth questions the basic argument of demarcation that a faster flow of customers per unit of time (higher efficiency) increases the producer's productivity but reduces customer productivity (Johnston and Jones, 2004; Parasuraman, 2002).

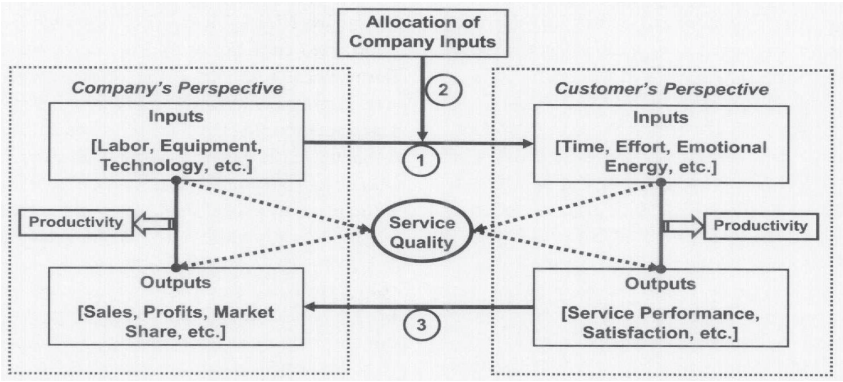

Figure 10. Service productivity from the dual perspectives (Parasuraman, 2002)

A more pragmatic approach to the relationship between service quality, productivity and profitability is provided by Gummesson (1998). In his analysis a comprehensive quality assessment draws on relationship marketing, which stresses loyalty, customer retention, and long term relationship as a key to sustainable profitability (Ravald and Grönroos, 1996). With a standard physical productivity definition – quantitative output-input ratio (McLaughlin and Coffey, 1990, Gadrey, 2002a) - Gummesson (1998) maintains that a careful analysis of the *triplets* - quality, productivity and profits of the provider - makes service operations more efficient. The deduction starts from quality defined as "doing things right from the beginning and doing the things that customers need and want" (op. cit. p. 6)[46]. If quality in this sense can be improved, it has positive effects on profits via *two* channels, as depicted in Figure 11. When the functioning and reliability of the firm's processes improve, the *image* in the market, customer retention and the firm's share of the customer's purchases are boosted (left

[45] The productivity growth for the producer is fostered if the customization can utilize economies of scope in the modularization.
[46] Note that this expression involves both components of productivity, scale-efficiency and effectiveness.

section in Figure 11). These changes stimulate sales volume growth, differentiate the producer from the competitors and make the producer less dependent on price competition.

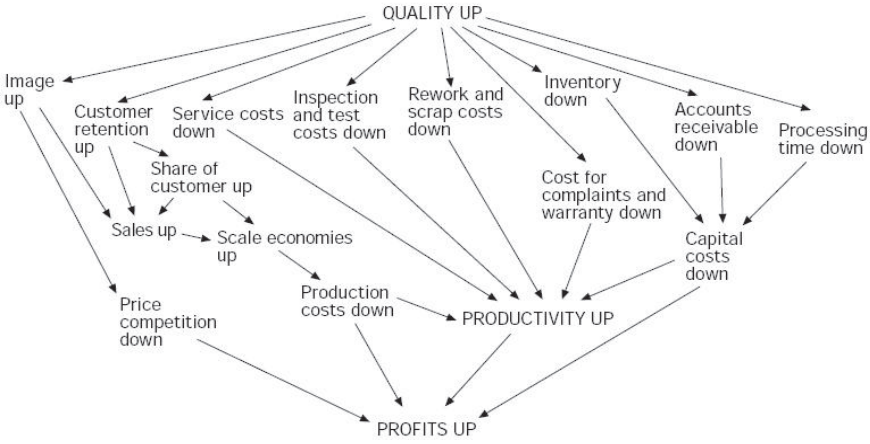

Figure 11. The 'triplets' of quality, productivity and profits at play (Gummesson, 1998).

Through the *cost reduction* effect (middle and right sections in Figure 11), improved quality of production enhances the producer's productivity with an additional leverage on its profits. To make the point further, Gummesson (1998) notes that the overall productivity and quality of a service is determined by the producer's work being done independently of the customer, the customer's work being done independently of the producer, and the work the two parties do in interaction. Therefore, a more effective utilization of the triplets assumes that interactive productivity and quality are fostered through relationship marketing (Henning-Thurau et al., 2002; Ravald and Grönroos, 1996), and integration of the left section of quality enhancement in Figure 11 with the middle and the right sections. According to Gummesson (1998) the concept of interactive productivity and interactive quality emphasize the role interdependence and mutual benefit from interaction between the provider and customer. Interactive quality and productivity are generated not only by labour and capital as in traditional, internally oriented measurement, but also by customers and their knowledge and willingness to participate in the service production and delivery process[47].

[47] A number of authors have suggested customer relationship lifecycles with virtuous circles or profit chains, based on the following pattern: good internal service quality → satisfied employees → employees stay → good external service quality

3.4.3 Learning-induced productivity

The productivity models of Parasuraman (2002) and Gummesson (1998) outline the essence of the socio-economic theorizing of service productivity. *If the efficiency of service production is enhanced on the basis of constant quality assumption by the producer, without the recognition of customer's direct and indirect involvement in the process, this may result in a lower perceived quality by the customer, and ultimately a lower profitability to the producer.* Accordingly, productivity, quality and profitability are inseparable triplets and the basis of sustainable competitiveness of any service business. These are the premises on which Grönroos and Ojasalo (2004) build their analysis as well. Their approach differs conceptually, however, as they define service productivity in terms of two components, *internal efficiency* and *external efficiency*. Whereas internal efficiency measures how efficiently a firm converts resources internally, external efficiency is defined as the firm's capability to produce a certain level of perceived service quality with a given structure of resources (Grönroos, 2000). As the inputs used in service production and the perceived quality of the customer are interdependent, so are external and internal efficiency as well.

The extent to which the provider and the customer interact in service production, defines service technology and *three classes* of services accordingly. For *back office* services (1), the service provider produces the service in isolation and is thus *mainly* responsible for the realization of internal and external efficiency. An opposite holds for the *digitalized* services (2) produced exclusively by the customer with facilities usually provided by the service provider. In the most common case the service is *co-produced* by the customer and the provider (3) (service encounter or classical service), generating interaction-induced effects on external and internal efficiency (Grönroos and Ojasalo, 2004)[48]. In this setting service productivity is a function of three exogenous variables. The more efficiently the service organization uses its own resources as input into the processes and the better the organization can educate and guide customers to give process-supporting inputs to produce a given amount of output, the better the internal efficiency (op. cit.). Moreover, the higher the perceived quality, determined by the functional and technical dimension of the quality (Gummesson, 1988) that is produced using a

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→ satisfied customers → customers stay → high profitability (Grönroos, 2000; Gummesson 1998). The logic seems indisputable but the outcome is not automatic; satisfaction does not by itself lead to retention and profits. The provider must actively maintain the customer relationship to make it sustaining and provide incentives for repurchase loyalty.

[48] In fact the first two cases do not meet the criteria of a classical service (see Section 2.4).

given amount of inputs, the higher the external efficiency. The third variable is the management of demand or *capacity efficiency,* which is influential, because the service provider cannot use inventories to cope with excess capacity or excess demand. The productivity model can be expressed in the functional form,

Service productivity = *f* [internal (**cost**) efficiency, external (**revenue**) efficiency, **capacity** efficiency].

The socio-economic reasoning of Grönroos and Ojasalo (2004) implies that a higher internal efficiency, associated with the alteration of the resource mix in particular, may lead to deterioration of perceived quality, external efficiency, and hence service productivity. Grönroos and Ojasalo (2004) suggest that the growth of service productivity draws on a mutual learning process, where the provider and the customer get used to each other and learn how to interact with each other so that mistakes, service failures, quality problems, information problems and the like can be minimized (op. cit.). Their view on the mechanisms of the learning process on service productivity is illustrated in Figure 12. When the relationship continues and deepens, the customer gets more experience of the service provider and the service process. Learning enables a more effective participation in the production, thus improving the internal efficiency, as well as an improved match between the expectations and experience of the customer. Similarly, the provider learns the customer's competences required for a more efficient production and the customer's needs for the design of more tailored services.

With an improved knowledge on the customer's characteristics, capacity utilization can be better matched with the market demand. The idea of learning-induced productivity growth is instructive in several ways. Applicable to all the three service categories discussed by Grönroos and Ojasalo (2004), mutual learning is logically more effective in the context of classical services with face-to-face interaction. It is clear that the differences in the learning potential are strongly influenced by the openness of the organizational setting as well. Back-office services performed by the provider and the digitalized service performed by the customer exhibit a high degree of closeness where technological standardization sets constraints to co-production and stresses the prevalence of internal efficiency. Another source of constraints on learning stems from the markets and the market strategy of the service

provider[49]. Depending on the complexity of the problems to be solved, the resources available and the number of customers, the provider has to decide on *how much learning* is economically feasible in each customer relationship.

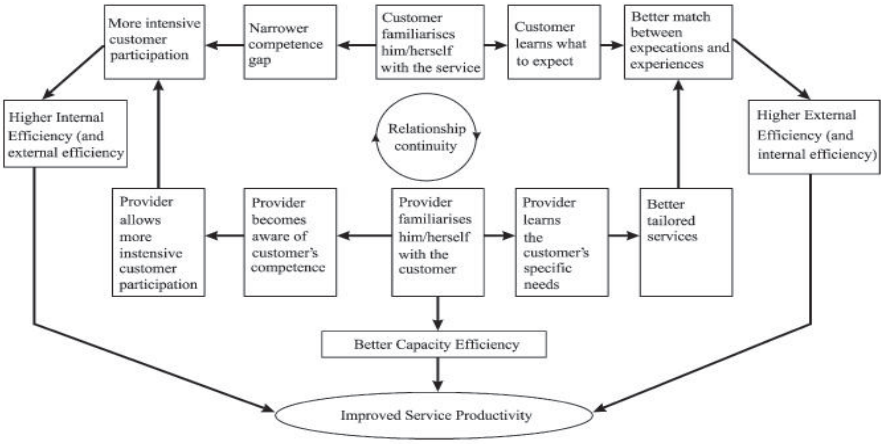

Figure 12. Learning and productivity growth (Grönroos and Ojasalo, 2004).

Relatedly, the strategizing motive of learning to narrow the competence gap between the user and producer is strongly influenced by gap of perceived quality. In the presence of uncertainty and opportunism associated with bilateral exchange, the prospect of persistent quality gap may impede the commitments needed to narrow the competence gap (Williamson, 1985). If the relationship breaks up, the productivity may fall dramatically as the learning process is started with a new customer. In the spirit of relationship marketing Grönroos and Ojasalo (2004) note that customer retention is important for service productivity. The longer the customer stays with a supplier, the higher the profitability of the customer relationship. With regard to the components of service productivity defined by Grönroos and Ojasalo (2004), the principles of relationship marketing imply that if foresighted, the provider should give up a fraction of the current internal efficiency in favour of external efficiency and perceived quality to secure the continuance of the customer relationship and the future profits. The

[49] The authors note that by increasing productivity, the economic results are assumed to improve. As long as this indeed is the case, managing productivity makes sense. If improved productivity does not lead to better economic results, increasing productivity does not make sense (op. cit.)

economic feasibility of such a strategy assumes that the discounted costs are less than the discounted gains.

3.4.4 Summary

Whereas the socio-economic view contrasts with the premises of the neoclassical macroeconomics, in general, it shows a distinct consistency with the endogenous growth theory. This is reflected by the analysis of knowledge-intensive service activities, in particular. The main contribution of the socio-economic approach is the genuine attempt to conceptualize service productivity realistically in the actual context, and to account for the specific characteristics of service activities in the operations of a service firm. This also helps identify the relevant dimensions by which services actually differ from manufacturing. The company perspective is guided by the practical needs of the management to enhance competitiveness and performance. Through the holistic treatise of the producer's and the user' productivity, the socio-economic approach holds a substantial potential for a more robust modelling of service productivity, and for inter-disciplinary extensions of the analysis as well. Its microanalytic perspective is associated with an unsystematic and fragmented theoretical basis, however, which directs the foci on special cases. This hampers generalization and the generation of testable hypotheses for quantitative analysis. The implicit focus on the consumer services and the emphasis of the customer's perspective leads to a simplistic treatment of service quality. This is characteristic of service marketing, in particular. Moreover, a wealth of analysis in the socio-economic setting is centred on the alleged trade-off between producer's operational efficiency and the perceived quality and value of the customer. This is the main inconsistency in the socio-economic reasoning, which follows from the overemphasis of the customer's perspective.

In the spirit of a 'synthetized' view, it is contended here that the variety in the determination of perceived quality and variety in the openness of the production processes are generic and 'continuous' characteristics of all industries and economic activities. This is implicitly suggested in Grönroos and Ojasalo (2004) as well. For instance, in service processes where the firm more or less only provides customers with a highly standardized infrastructure, such as telephone operator, and where customers interact with each other only in this environment, the service provider becomes a closed production system resembling manufacturing. As long as the infrastructure functions without problems, traditional

(manufacturing) assumptions for understanding and measuring productivity apply to a large extent. Consequently, the assumption of the trade-off between efficiency and the perceived quality seems to be more appropriate for consumer services than for business services. For consumer services the service process is central for the perceived quality, whereas for business services a higher emphasis is given to the productive outcome of the service and the impact on the customer's processes. In that case the service processes may assume lower priority and higher flexibility, and the productivity targets of the seller and buyer become more aligned. As long as the expected (desired) outcome is known and identifiable *ex ante*, a higher emphasis is given to operational efficiency of the service. In effect, according to the intergative perspectives that evolve within the socio-economic approach (e.g. Sundbo, 1999; 2002) there exists a continuum of characteristics that link the consumer services and the business services. The strengths and weaknesses of the socio-economic paradigm are summarized in Table 2.

Table 2. Strengths and weaknesses of the socio-economic paradigm.

Strengths	Weaknesses
The firm level view rooted in the practical needs of the management	Unsystematic and fragmented theoretical basis, an implicit focus on specific cases
Managerial implications to the opportunities to enhance service performance	Over-optimistic assumption on the alignment of interests between the service provider and the customer
Microanalytic focus on efficiency and effectiveness	Implicit focus on the consumer services, and customer's perspective, a simplistic treatment of quality
High potential for a more robust modelling of service productivity	Limitations to quantitative analysis and generation of testable hypotheses
High potential for new inter-disciplinary research that account for organizational aspects	Limited operationalization of productivity to allow comparative analysis

3.5 The value creation approach

In deviation to several areas of service research e.g. in the research of service innovation, where the convergence of demarcation and assimilation has made a way toward synthesis (Gadrey and Gallouj, 2002), the theoretical and empirical analysis of service productivity has been split into the competing '*schools'*. Hence, a natural point of departure to the synthesis is to assess the *consistency* between the two approaches. The main distinction is related to the ways of interpreting the characteristics of manufacturing and service activities. More specifically, the question is whether the degree of tangibility and customer's participation in the production and delivery should affect the definition and the measurement of service productivity. For the macroeconomic framework the answer is no, as the

computation of productivity draws on standard accounting conventions applicable to all business firms, and the official statistics thereupon. The answer given by the socio-economic view is yes, since service productivity results from a close interaction and co-production between the producer and the customer, whose separate contributions are difficult to distinguish and measure. In general, co-production within an open system is a realistic but from the perspective of measurement an impractical assumption, whereas a supply-based productivity within on closed system is unrealistic but from the perspective of measurement a practical assumption. Paradoxically, the premises of the theoretically and deductively oriented assimilation are highly compatible to the industry statistics, while the premises of the empirically and inductively oriented demarcation are highly incompatible to the industry statistics and the measurement of service productivity.

The *inconsistencies* of the macroeconomic approach become increasingly apparent, when the focus is shifted from the economy and industry down to the level of a firm and a service episode. At the highest level the productivity of business activities in the economy totals up to GDP (the gross domestic product) per hours worked. The calculus of the GDP draws on the conventions of national accounts and the financial statements of firms. They provide the official approximates of the transactions and the flows of goods and services between the economic sectors. In this regard the value-added generated by a firm includes the economic outcome of scale-efficiency and effectiveness, which the firm is able to appropriate from the transactions with other firms and consumers. Factors influencing the prices of goods and services determine how economic benefits are ultimately distributed between the producers and the users[50]. Owing to the intangibility and possible externalities of the business services, their impact on the customer's value creation process is difficult to observe, and therefore the pricing of services has to be based on other criteria than their actual productive contribution[51]. For instance, from the inherent uncertainty associated with the outcome of highly tailored services follows that the service provider often incurs a 'negative risk premium'. This tends to lower the price of the transacted service. In a similar vein, the overall impact of a service on the customer's processes may materialize long after the delivery of eth service and the completion of the transaction[52]. Finally, a substantial gap may exist between the perceived value of the customer and price of the service. This may result from high

[50] As noted by Wölfl (2003) the present accounting conventions may lead to underestimation of the actual value added of business services, and thus overestimation of the value added of the customer industries such as manufacturing.
[51] An example is a pre-determined hourly tariff.
[52] The influence of the service on the customer's operations may ultimately exceed what has been originally agreed on or expected.

negotiating power on the customer side, which is associated with a fierce price competition between the service firms. This further suppresses the prices of the services down[53].

3.5.1 Towards the synthesis

The above discussion points out that apart from the apparent biases entailed in the macroeconomic measurement of service productivity, there exists *no major inconsistencies* between the two paradigms as they draw on differing premises. It is acknowledged in both paradigms that the productivity of services is difficult to capture quantitatively at any level of economic activity. In particular, if the socio-economic approach is contrasted with the endogenous growth theory, the differences diminish *analytically* as well. For instance, the synthesis of service innovation research is compatible with the argument that innovation externalities are the major source of endogenous economic growth. The productivity of firms, industries and economy originate from the complex interaction between the producers and the users of services and goods, which is most realistically captured within the business management framework. Hence, it can be concluded that *the socio-economic approach (implicitly) focuses on the microeconomic dynamics of endogenous growth and productivity*. Nevertheless, the comparison of the micro-theoretic foundations of the neoclassical and the socio-economic approaches reveals a discrepancy in the assumptions on technology, competition, as well as human rationality and the nature of information. Whereas the neoclassical analysis of the technological change – i.e. total factor productivity - rests heavily on the equilibrium assumptions of the competitive markets, perfect information and profit maximization, the modelling within the socio-economic approach is unconstrained in this respect. It aligns with the more realistic (inductive) premises of strategic management and organizational approaches, where firms and managers are assumed to rationally oriented *profit seekers* in imperfectly competitive markets. More importantly, as pointed out in service innovation and marketing, the ultimate objective in service transactions is not *always* the deliberate short-run profit maximisation *per se,* but an enhanced learning, experimentation and the joint value-creation by the customer and the producer in the long run.

[53] A common shortcoming (challenge) of the macroeconomic and the socio-economic approaches is that they fail to isolate the productivity of single inputs used in service production. The growth accounting method is based on a restrictive assumption of additive contributions of inputs to the production process. This implies that there are no complementary effects between the inputs other than those lumped in total factor productivity. For the socio-economic approach, the problem is reversed and stems from service co-production. This makes the measurement of the productive contribution of individual inputs virtually impossible. More generally, the higher the intangibility and complexity of the service input, the more difficult it is to isolate its contribution from other effects on service outcome.

Building on the premises of the macroeconomic and the socio-economic schools, the value creation approach (VCA) – that is discussed in the following sub-sections - assumes that the overriding objective of the firm (service provider) is to enhance the long term profitability – and hence the value of the firm. In competitive markets, value creation is reducible to the management of productivity (efficiency and effectiveness) and the customer's perceived quality and value. In this setting customer's perceived value of the service is influenced by the customer's perceived quality, which follows from the overall productivity of the service. The logic of VCA is presented in the subsequent steps. The role of productivity in a firm's value creation system is highlighted in Section 3.5.2. This is followed by the detailed analysis of service productivity in the context of service transaction in Section 3.5.3. The dynamic aspects of productivity and the managerial choices in the value creation are discussed in Section 3.5.4. This is complemented with the discussion of an appropriate index for the measurement of the productivity by the service firm in Section 3.5.5.

3.5.2 The domains of a firm's value creation

From the managerial perspective, productivity represents one of the *strategic means* available to a service firm in its pursuit of high profitability and the value of the firm. This is highlighted in Figure 13. In modification to Van Ark, B. and G. Jong (2004), *productivity domain* involves three components, efficiency, effectiveness and technological progress as discussed in Section 2.4.8. The *activity domain* focuses on number of different service activities produced and delivered by the firm. The firm's composition of activities is influenced and characterized by the *economies of scope*, whereas the volume of production of each service follows from the *economies of scale* of the existing technology and the size of respective markets[54] (See Section 2.4.8). The array of the inputs of a firm, i.e. the resource mix needed in the conduct of the activities, is subject to economies of scale and scope as well.

Whereas the feasibility of value creation through productivity is context-specific and is contingent on the expected profitability of the other means of managing *prices* and the scope of the *activities*, the *pattern* in the utilization of the value-creation tactics is also contingent on the industry characteristics,

[54] In that case the firm needs to decide how to allocate resources in production lines to achieve high cost-efficiency and scale-efficiency (cf. Panzar and Willig, 1981; Baumol et al., 1988).

such as competition and technology, as well as innovativeness and the capabilities of the firm itself. For instance, selecting a specific product mix means implicitly a commitment to a certain price-cost strategy characteristic of an industry. A closer examination shows that in a competitive market situation[55] the managerial choices in regard of prices and activities are to a high extent guided by productivity considerations as well. For instance, through economies of scale and scope (e.g. in resources) the composition a firm's activities affects and is affected by, the productivity of each service activity. Moreover, the optimum scale of production in each activity highlights the relative importance of scale-efficiency relative to effectiveness. Economies of scale and scope are further related to the economies and profitability of *vertical integration*[56].

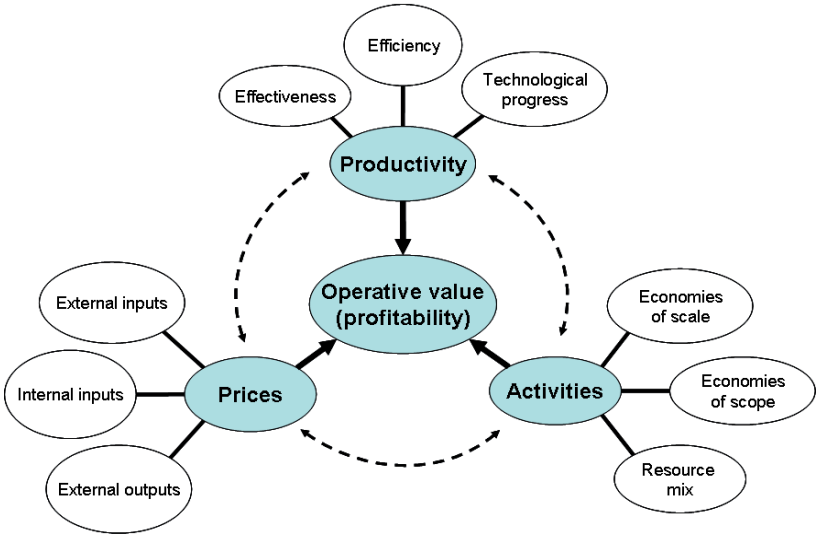

Figure 13. The domains of the value of a service firm (adapted from Van Ark, B. and G. Jong (2004)[57].

Apart from the market power of the firm, the *prices* of the inputs and the service outputs reflect the firm's capability to differentiate from the competitors and to offer superior value to the customers (cf. Porter, 1985). In particular, the discussion in Section 3.5.5 will point out that the prices of inputs and

[55] This is an implicit assumption throughout the productivity analysis.
[56] In general, vertical integration of activities means that subsequent stages (activities) of the value chain of a product or a service is controlled and owned by a firm.
[57] External inputs in the figure are the inputs sourced from the market, whereas external output is the output sold to the service market. Internal inputs are the inputs of the firm.

output of a service reflect the firm's technology and the characterstics of service productivity[58]. Technological progress to boost productivity entails complex chain effects between the three domains. On balance, while productivity is seen as the main catalyst in the firm's value creation process, it is distinctively guided by the opportunities and the constraints of the markets, technology and the capabilities of the firm. Such a view conforms to the cited argument by Penrose (1959) as well. The productivity activities of a firm are governed by its 'productive opportunities', which comprise all the productive possibilities that its 'entrepreneurs' see and take advantage of. A theory of growth of firms is essentially an examination of the changing productive opportunities of firms[59].

3.5.3 Service productivity model

The above premises of the value-creation framework and the conceptualization of productivity in Section 2.4.8, enable the conceptualization of the technological aspects of service productivity and establishment of the functional relationship between scale-efficiency and effectiveness. An appropriate point of departure is the socio-economic argument that there is an inherent trade-off between production efficiency and perceived quality of customer (Parasuraman, 2002; Grönroos and Ojasalo, 2004). Anderson et al. (1997) suggest more plausibly that there exist two categories of quality, the one that meets customer needs, called *customization quality*, and the other called *standardization quality*. Customization and standardization are two mutually dependent, often conflicting, aspects of quality. Anderson et al. (1997) note that when productivity is interpreted synonymously with production efficiency, customer satisfaction and productivity is less likely to be compatible in a situation where customer satisfaction is relatively more dependent on customization – the degree to which the firm's offering is customized to meet heterogeneous customers' needs - than standardization, and when it is difficult (costly) to provide high levels of customization and standardization simultaneously (ibid.). Anderson et al. (1997) demonstrate that these conditions are prevalent in service industries, whereas in case of manufactured goods, customer satisfaction is distinctively more dependent on standardization quality. In the spirit of Vargo and Lusch (2004) it is put forward here that the characteristics of goods

[58] High unit prices and unit costs of a service are associated with high effectiveness whereas for high scale-efficiency it is the opposite.

[59] According to Penrose (1959) it is never the resources themselves that are the inputs in the production process but only the services that the resources can render. The services yielded by resources are a function of the way they are used – exactly the same resources when used for different purposes or in different ways and in different combinations with different types or amounts of other resources provides a different service or set of services (op. cit.).

per se do not make standardization more important for customer satisfaction. It is the relative willingness of the customer to accept standardization that allows firms to deliver services through goods, and thus increase their productivity and profits. Accordingly, Vargo and Lusch (2004) make a fundamental qualification on Anderson et al. (1997) that *customer-perceived quality is always the driving factor, and the willingness to accept a trade-off between standardization quality and customization quality, usually for a commensurate trade-off in price (inclusive of other sacrifices) is eventually a form of customization* (Vargo and Lusch, 2004)[60]. Thus, given the actual variation (differentiation) in customers' preferences with respect to standardization and customization, customer satisfaction and productivity can attain compatibility universally.

The compatibility between productivity and customer satisfaction (in the competitive markets) assumes moreover that 1) there exist *markets* and prices capable of trading some level of standardized quality for some level of customized quality for the differentiated service, 2) there exits a technology that enables service provision within acceptable levels of standardization and customization by the markets, and 3) service technology and productivity can be defined as a co-product of scale-efficiency and effectiveness. *As result the 'subjective' trade-off between service productivity and the perceived customer value suggested by the socio-economic view is displaced by the 'objective' trade-off between customization (effectiveness) and standardization (scale-efficiency) in the value creation approach.* The co-determination of the producer's productivity and the customer's productivity in the case of service delivery is presented graphically in Figure 14. The productivity model builds on the standard assumptions of the neoclassical theory of firm and consumer (cf. Kreps, 1990; Varian, 1984). They are discussed in more detail in Section 2.3.1.

The presentation in Figure 14 assumes that the production possibilities of an established service firm can be approximated by a continuous and concave functional relationship between scale-efficiency and effectiveness. The curves with the symbol S indicate the provider's constant and maximum levels of productivity, whereas the curves with the symbol I indicate the customer's constant levels of

[60] Some customers prefer to engage in relatively high levels of co-production (tailoring), and some prefer to have the offering firms provide services more directly. When customers make trade-offs, they are not necessarily making value trade-offs. Goods and services are appliances, and the customer must add mental and physical effort to co-create value. This effort is part of the total cost of ownership and use of an appliance. However, because the firm does not pay for the consumer's effort, it does not enter into the firm's financial statement and determination of profit and productivity (cf. Vargo and Lusch, 2004).

productivity. The continuity of the surface S reflects the inherent flexibility of service technology. The concavity reflects the impact of economic scarcity and the diminishing marginal rate of technical substitution (MRTS) between effectiveness and scale-efficiency (cf. Kreps, 1990). Accordingly, along the surface S there is a trade-off in using the provider's resources most productively at any point of time: part of effectiveness has to be given up to obtain higher scale-efficiency. This holds for the moves in the opposite direction as well: sacrificing scale-efficiency for higher effectiveness. It is realistic to assume that the productivity surface S evolves through provider's learning and experience of how to attain customer satisfaction in different types of customer segments. For simplicity reasons, a situation is considered where the provider has no prior preferences with respect to scale-efficiency and effectiveness.

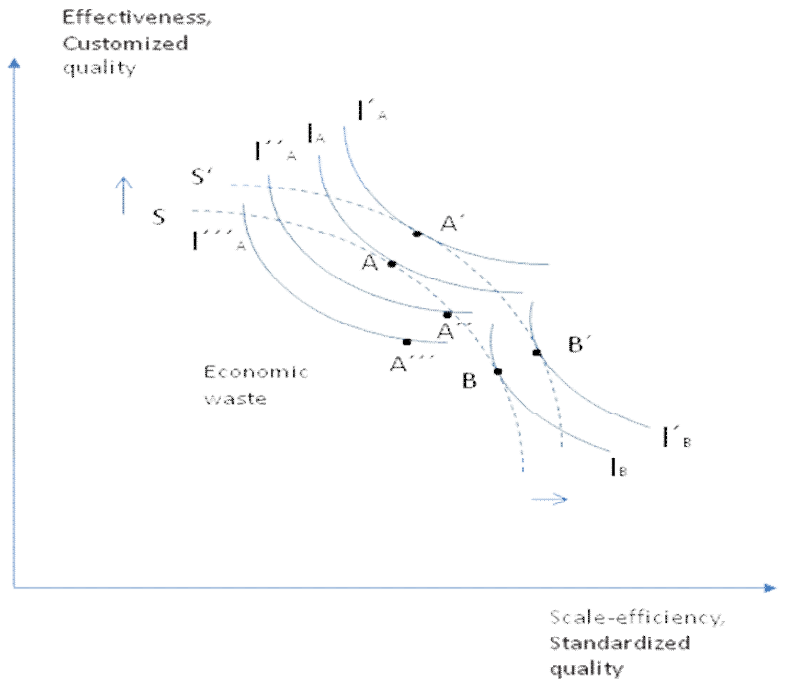

Figure 14. The co-determination of the provider's and the user's productivity.

The surface (frontier) S also describes the best practice service technology available to the provider. The principal objective of the provider is to stay on the productivity frontier S, where the maximum level of productivity and the right balance between effectiveness and scale-efficiency for different

customers and customer segments is reached. To exemplify, if the preferences of a customer regarding a service change so that a higher level of customization is required, the provider has to allocate more resources to serve this customer. In Figure 14, a move of the symbol A to the left on the frontier S illustrates this situation and customer type. It implies a higher uncertainty in the service outcome and a diminished opportunity to utilize economies of scale (replicability and standardization). The provider's overall productivity may remain unchanged, however. This is possible if scale-efficiency is enhanced in the service of other customers (assuming fixed amount of customer time and other resources). This implies that more standardized services are offered to the customers of type B in Figure 14, i.e. the point B moves to the right on the surface S.

As regards the customer's (user's) productivity, the analysis restricted to those customer's preferences that concern the choice between customization and standardization. This choice has been considered essential by several researchers (cf. Anderson et al., 1997). In Figure 14, the degree of customization quality is assumed to be a linear function of effectiveness, while the degree of standardization quality is assumed to be a linear function of scale-efficiency. (For simplicity they are presented on the same axes in the figure.) The convex surfaces I_A and I_B display the trade-off for a customer's preferences with respect to the characteristics of a service. They correspond to the consumer's indifference curves of standard microeconomics (cf. Kreps, 1990), on which the consumer's utility – or in our case the perceived quality of the service – remains constant. I_A and I_B may be called 'constant customer's productivity frontiers'. That the customer's perceived quality along this productivity frontier remains unchanged reflects the stylized fact that high customization, which may be preferred by the customer *per se*, also entails higher sacrifices to the customer. It implies a higher uncertainty in the service outcome as the predictability associated with the standardized service quality is lost. Customization is also usually associated with more intensive customer participation, which entails costs in the form of time and other resources. The position and the curvature of the indifference curves characterize customers' demand and preferences with respect to the service quality.

In Figure 14, the area below the surface S is, by definition, inefficient (unproductive) and thereby reflects the waste of the provider's resources. Correspondingly, the move towards S indicates an improvement in the use of resources and an increase in the *operative cost-efficiency* of the provider. Productivity growth which is manifested in technological progress and innovation may shift the

provider's productivity frontier outward from S to S′. For the exogenous factors inducing such a shift, Anderson et al. (1997) note that appropriate applications of *information technology* may improve both customer satisfaction and productivity simultaneously. It is realistic to assume that the outward shifts of the surface S are typically asymmetric and demonstrate the impacts of learning, improved skills of the service professionals, improved quality of the complementary inputs, or the re-organization of the service processes. In most cases such innovations are associated with cost reductions as well. It is apparent that the extent to which the provider's technology is smooth and continuous, as indicated by the frontier S, is an empirical matter and depends on the industry. Service firms might be specialized in the production of specific types of services for specific types of customers. In such a situation, A and B in Figure 14 may represent the situation of two different firms in a service industry, whose technology is approximated by the frontier S.

In the first-best equilibrium[61], such as A and B in Figure 14, customers attain the highest possible level of perceived quality (customer's productivity) and also the provider's productivity is the highest possible, given the service technology S. Equilibrium A is also the point of tangency between the two productivity curves. The slope of the tangent at that point indicates the relative market prices linked to scale-efficiency and effectiveness (cf. Kreps, 1990). The first-best equilibrium can also be attained after a service innovation, which shifts the production frontier outwards (S'), if the level of customer's productivity increases in the same proportion. This is highlighted by the indifference curves I′A and I′B. In reality, equilibrium prevails only exceptionally and mainly in a short run. In more realistic situations, the production of services shows some cost-inefficiency and takes place below S, such as point A′′′. Moreover, changes in the relative prices linked to effectiveness and scale-efficiency (the slope of the tangent) move the short run equilibriums along S.

Thus, the provider's strategy to increase its own productivity *unilaterally* does not necessarily generate the first-best solutions for A or B. For instance, an improvement from A′′′ to A′′, which maximizes the provider's productivity (as the surface S is reached), results in only sub-optimal improvement to the customer's productivity. The improvement is indicated by the distance between the productivity curves I′′′A and I′′A. However, there is still a distance between the productivity curves I′′A and IA, which shows that there is a mismatch compared to the service level agreed and expected by the customer

[61] This is the point where the producer's and the user's productivity frontiers are tangent to each other.

(symbolized by A). In other words, the distance between A and A´´ describes the degree of mismatch in supply and demand and the degree of loss in effectiveness (cf. Tangen, 2005). In this case customer's perceived value[62] can be increased with the higher levels of customer's productivity characterized by higher degree in effectiveness.

3.5.4 The operative value of a firm

The value-creating strategies of profit-seeking firms conform to the general objectives of relationship marketing. This implies establishing, maintaining and enhancing the relationships with customers at profit in a way that the objectives of the producer and the customer are met (Ravald and Grönroos, 1996; Gummesson, 1998). Within the socio-economic setting, customer value can be enhanced several ways of increasing perceived customer benefits e.g. quality, or reducing perceived sacrifices by cutting off relationship costs for the customer. These costs include the input costs and all kinds of transaction costs incurred by the customer. *In the specific situation examined here, customer's perceived value of a service is influence by the perceived quality, which manifests the producer's productivity of a service.* In the generation of the customers' perceived value, it is convenient to assume that the producer assesses the profitability of each customer relationship in terms of the customer life time value (CLV), which equals to the net present value of the annual profits derivable from each customership in the presence of an infinite planning horizon (cf. Hogan et al., 2002). In that case the life time value of customers for a firm equals to the operative value of the firm. It can be presented by the following formula[63]:

$$\textit{Operative value of the firm} = \sum_i CLV_i = \sum_i \left[m_i / (k_i + d - g_i) \right] - \sum_i a_i ,$$

where m is the constant net margin (profits – retention costs) generated by customer i in each successive period, k is the discount rate, and d is the rate of defection (opposite of retention). Variable g indicates the growth rate of sales to the customer i, while a_i measures the acquisition cost of customer i in the first period. When summed over all i customers, CLV becomes an expression of the *expected*

[62] Perceived value of a service is more complicated phenomenon to measure that perceived quality of a service. In general perceived value, which is higher than the price of the service, is influenced by the customer's overall context (cf. Vargo and Lusch, 2008).

[63] The key assumption here is that the overall objective of the firm is to increase its net present value, which is determined by the discounted streams of profits (see e.g. Dobrovolsky, 1971).

future profits of the firm, where *k* involves the economic risks associated with the individual customer, and *d* refers to the probability of defection. Should the customer relationship terminate as a result of defection, the producer has to find a new customer with the acquisition cost a_i, which has to be exceeded by the expected flow of the annual profits $m_i/(k_i + d - g_i)$. Conceptually, CLV provides an approximate for the net present (financial) value created for the producer and the customer, which involves the discounted effects of service productivity - scale-efficiency and effectiveness - as well (see Section 3.5.2). This assumes that the *price the customer is willing to pay for a service* is a 'good approximate' for the customer's perceived quality of the service, and hence the supplier can be switched by the customer if the price set by the producer exceeds customer's perceived quality. As the relationship is established and the mutual trust evolves, the management of customer's perceived quality and hence perceived value (cf. Parasuraman et al., 1988) becomes increasingly important for the producer. In the long run the risks and the defection rate *d* may thus decrease, which exerts a positive impact on CLV and may thus allow for lower prices and annual profits m. For newly established relationships associated with a higher uncertainty, the producer may have to balance the higher annual profits with the customer's perceived value and the higher probability of defection. If the producer plans to raise annual profit *m* through a higher scale-efficiency, customers may defect in the subsequent period, if their perceived value and quality diminishes at the same time. This may occur, when a firm's attempt to increase scale-efficiency entails an *unacceptable* decrease in effectiveness (cf. Parasuraman, 2002; Ravald and Grönroos, 1996) or degradation in the service quality. Similarly, an attempt to increase *m* through a higher effectiveness may result in defection, when the higher price asked by the producer exceeds the perceived quality of the service or simply when the customer prefers standardization quality to customization quality.

The point made here is that the management of a firm's value through the productivity and the pricing of services are fundamentally inter-temporal and dynamic optimization problems. Scale-efficiency and effectiveness have to be matched with the customers' preferences on service quality as much as possible (Anderson et al., 1997) while the pricing of the services must be matched with the perceived value (quality) of the customer. These requirements are subject to the changing business relationship, competition and mutual learning which bear implications to service productivity. In this sense, the firm's offering should be seen as a value carrier and in order to achieve a sustainable competitive advantage, the firm must provide an offering which the customers perceive…a greater net-value than

the offerings of the competitors (Ravald and Grönroos, 1996). The firm's pursuit of established customer relationships with long expected (infinite) duration and growing value of sales often favours the strategy of 'moderate annual profits and pricing' as well as meeting the customer specifications on service productivity. The producer will incur a high loss in the overall productivity and profitability, if an established customership terminates, and new customers need to be found. Accordingly, customer retention and profitability indicates the value of firm is ultimately reducible to the productive value of the firm's resources. In particular, the specification of CLV implies that *when customer loyalty increases (defection decreases) with the customization of the service, which is a plausible assumption, then the customization strategy may be as profitable in a long run (measured by the net present value of a firm) as the standardization strategy even though the service markets is competitive and the unified price is determined by the low-cost standardized service.* In most service industries, customers and the capability of managing customer relationships become the strategic assets, which the value of the service firm builds on. A skilled customer management becomes particularly important in situations where the firm's service technology is highly flexible[64], and the customer base is heterogeneous with respect to the preferred mix of scale-efficiency and effectiveness.

3.5.5 Index for the firm's productive performance

To be operational, the definition of service productivity requires a compatible method of measuring the productivity of a service (firm). Consistent with the above premises and implications, there exists a specific *service productivity index, which is applicable in the empirical analysis as well*. From the intangibility of the service outcome and the option for customization follows that the measurement of the overall service productivity is highly sensitive to how customer's perceived quality is accounted for. Hence, given the notion that service quality, productivity and profitability constitute inseparable *triplets* (Gummesson, 1998), the most viable index for productivity of the service firm producing *marketable services,* is inevitably *financial* (cf. Grönroos and Ojasalo, 2004). It is argued here that the index which shows consistency with the logic of the value creation approach, relates revenues of the sales and the cost of production (R/C). The R/C productivity index can be derived from the firm's

[64] Flexibility implies that moves along the surface S in Figure 14 are possible.

accountancy and it shows high comparability longitudinally (in time) as well as horizontally (with respect to competitors)[65]. Further justifications for the argument are provided below.

On the basis of the linkage between productivity, price recovery and profitability (see Figure 6 in Section 2.4) a change in service productivity R/C equals with a change in profitability. Profitability can be decomposed into change in (technical) productivity and change in *price recovery*. This interpretation conforms e.g. with Grönroos and Ojasalo (2004) and Sahay (2005). As noted by Grönroos and Ojasalo (2004) purely financial measures have not normally been used for measuring service productivity. However, the authors see that financial measure seem to be the only ones that manage to incorporate the quality variations caused by the heterogeneity of services and the effects on perceived quality by consumer participation in the service process. In a similar spirit Sahay (2005) notes that a service organization strives for productivity to achieve the goals set for the business, and the fundamental goal is to make profit in the markets. The relationship between service productivity and the ratio between revenues and costs R/C is also highlighted in Jackson and Peterson (1999), who examine the productivity of manufacturing (assembly line) processes as a time-based function. In their formulation, productivity is a function of time-based efficiency E_{tncy} defined as a ratio between assembly time t_a and total time t_{tot}, and time-based effectiveness E_{tness} defined as a ratio between value-adding time t_{va} and assembly time t_a. Accordingly, the productivity of a manual assembly line P can be expressed by the equation (1),

$$(1)\; P = E_{iness} \times E_{tncy} = \frac{t_{va}}{t_a}[\%] \times \frac{t_a}{t_{tot}}[\%] = \frac{t_{va}}{t_{tot}}[\%].$$

The maximum of P (100 %) corresponds to a specific point on the producer's productivity surface S shown in Figure 14. If t_a is known and fixed, there is no technical trade-off at the maximum of P. The other production points along the ray between origin and the surface S are by definition, inefficient. If t_a is a continuous variable indicating technological flexibility and transferability of resources

[65] This definition is consistent with the generic productivity definition in Anderson et al. (1997) as well. In that formulation productivity E is defined as a ratio $E = \frac{Dp}{Dc + FC}$, where D is the quantity demanded, p is unit price of the output, c is unit variable costs, and FC is fixed cost. The calculation of the productivity index R/C is not dependent on price indices, as both the numerator (revenues) and the denominator (costs) are monetary values of the same period.

($0<t_a<t_{tot}$), the formula (1) at the maximum level of P is conceptually consistent with the assumption of a continuous technical trade-off shown in Figure 14. Hence, it can be concluded that equation (1) is also applicable to a number of standard services, when a) time is a significant constraint for the capacity utilization, b) when service production is based on closed or rational systems (see e.g. Thompson, 1967) with negligible customer participation, and c) when prior knowledge on the time components t_{va}, t_a and t_{tot} is readily available. For most services these conditions are not fully met, however. Total capacity is often indeterminate, there exists high uncertainty on the service outcome, and customers may be involved in the production processes. Therefore, an appropriate modification of the equation (1) is an input-output function, where the productivity of service *i* is defined by the equation (2),

$$(2)\ p_{it} = e_{iness} \times e_{incy} = \frac{r_{it}}{s_{it}} \times \frac{s_{it}}{c_{it}} = \frac{r_{it}}{c_{it}} [\%].$$

In the equation (2) r_{it} denotes the revenue generated by service *i* in period *t*, and c_{it} is the associated cost of producing service *i* in period *t*. The continuous variable s_{it}, which is determined by the shape of the surface S, can be interpreted as the real (financial) value of the services provided by the inputs in period *t*. The productivity of a firm in period *t* is attained by summing over the type of services it produces, and is given by equation (3),

$$(3)\ P_t = E_{tness} \times E_{tncy} = \sum_i (e_{iness} \times e_{incy}) = \frac{R_t}{C_t}.$$

In deviation to the equation of the time function (1), the equations for the input-output functions (2) and (3) are not subject to prior constraints, i.e. there is no upper limit to service productivity. This follows from the fact that revenues and costs are the co-products of prices and quantities. Whereas quantities are subject to technical constraints, prices are not, since they are determined by the quality of inputs and outputs and possible market power. In a hypothetical situation, where *the market prices of the differentiated service outputs reflect the perceived quality of the customer and effectiveness, and where the unit costs of inputs reflect the marginal productivity of the inputs* (the neoclassical production

efficiency), equations (2) and (3) imply that the financial index of the productivity of a firm is determined by the technical productivity indicated by the producer's surface S in Figure 14. In that case the service market may approximate 'perfect competition' which is characterized by several producers with identical technological opportunities (Kreps, 1990). In a more realistic case, the service market approximates 'differentiated competition', where the competing firms show differentiated (specialized) opportunities subject to the technological trade-off within the industry. The extent to which input and output prices actually reflect the effectiveness and the scale-efficiency of services, is an empirical matter. In reality, the parity is typically violated by market imperfections, such as monopoly power, imperfect information, bounded rationality or regulation. In that case the revenue component *R* in the productivity index becomes *primarily* a proxy of the internal effectiveness of the firm indicating the capability to allocate profitably across the firm's service activities, and *secondarily* a proxy of the perceived quality of the customer (the indifference curve), i.e. the customer's productivity.

On balance, the revenue-cost ratio provides a workable and analytically consistent index for the measurement of service productivity. Effectiveness is thereby indicated by the revenues, the willingness of the customers to pay, given the scale of operations, costs and the available resources. Similarly, scale-efficiency indicates the ability to cut down costs through the economies of scale, given the customer specifications and the mix of services provided. Assuming that the service firm implements cost-based pricing, a higher effectiveness and lower scale-efficiency along the frontier S implies higher unit price and unit cost, whereas in the opposite direction both are diminished. The net effect on R/C depends on the technology and the characteristics of the output and input markets. Hence, when the goal of the firm's management is to *increase*, *maximize* or achieve an *acceptable* economic performance for the firm, the distinction between the productivity and profitability of service business becomes blurred. For the discussion of the acceptable levels of performance, useful insights can be derived from organizational theory (Thompson, 1967). In that setting, business firms are seen as open systems[66] characterized by incomplete knowledge on the cause-effect relation (with respect to productive performance) and the incomplete standards of desirability with respect to economic objectives. As a result *organizations subject to norms of rationality measure their fitness for the future in satisficing terms* (op. cit).

[66] Related to the discussion in Section 3.4, openness is manifested by customer's participation in the production.

The point made by Thompson (1967) is that the productivity of an open organization is conceptually feasible only for the relative assessment of performance. In particular, if the environment, where the firm operates is *stable – or seen as stable by the management* – the firm seeks to demonstrate fitness [competitiveness] for the future action demonstrating historical development (ibid.). In such a case the reference group is the organization (firm) itself and the assessment of the acceptable economic result is thus based on the growth of the productivity in the preceding periods. In the situation where the firm faces a *dynamic* business environment, Thomson (1967) proposes that firms seek to score favourably in relation to comparable (competing or similar) organizations (firms)[67]. With respect to the productivity indicator R/C the two modes of benchmark – *longitudinal* and *horizontal* – outlined by Thompson (1967) are independent of the scale of operations, which reflects an implicit assumption of constant returns to scale. For instance, if costs (C) are increased by 5 %, to keep productivity constant requires 5 % increase in revenues (R) as well. The possible effect of economies of scale (size of the firm) in the benchmarks can be controlled by a scale coefficient. More generally, the robustness of the productivity index can be enhanced through a similarity-coefficient γ, which delimits the impacts of the differentiated characteristics of the firms that are compared. For instance, in controlling the impact of the service portfolio (scope), input mix, market share or market segment, the focus is geared to the remaining uncontrolled characteristics that may explain the differences in productive performance between periods and firms[68]. Formally, the productivity indices for firm *i* in the longitudinal (P_{Li}) and horizontal (P_{Hi}) comparisons can be defined by equations (4) and (5), where *n* denotes to the number of reference firms,

(4) *Longitudinal service productivity index for a firm in period t* $= P_{Li} = \dfrac{R_{it} / C_{it}}{(R_{it-1} / C_{it-1})}$,

[67] Thompson (1967) notes that historical improvement may be relevant for all organizations, for environments are never so unstable as to negate the past completely. But in dynamic task environment there is considerable uncertainty about what the organization may be called upon to achieve in the future, and improvement on obsolete criteria may be of little consequence. Lacking absolute criteria of fitness, and being unable to assume that improvement over its past capability is a reflection of its future, the complex organization then turns to social references to demonstrate that it is doing as well as or better than others in the league.

[68] In principle, a similarity index is needed for a longitudinal analysis as well. As suggested by Thompson (1967) the dynamics of the business environment, i.e. the dissimilarity of the subsequent periods, is the principal reason why horizontal index is preferred over the longitudinal index. This will be demonstrated empirically in Section 5.

(5) *Horizontal service productivity index for a firm in period* $t = P_{Hi} = \dfrac{R_{it} / C_{it}}{\dfrac{\sum_{i \neq j}^{n} \gamma_{jt} (R_{jt} / C)_{jt}}{n}}, \ (0 < \gamma_{jt} < 1).$

3.5.6 Summary

Drawing on the conceptual synthesis of services and productivity, this section has developed a descriptive framework, which elaborates the main characteristics of service productivity from a synthetized perspective of service management and economic analysis. In deviation e.g. to service innovation, where the convergence of the theoretical schools of demarcation and assimilation has shown a progress towards *synthesis*, the analysis of service productivity is split into the two theoretical 'schools' with differing epistemological bases. In recognizing the strengths and weaknesses of the macroeconomic and the socio-economic schools, the value creation approach (VCA) takes an 'entrepreneurial stance', to productivity. In this setting, the overriding objective of the management is to enhance the long term profitability and the value of the service firm. In competitive markets this objective is reducible to various forms in enhancing scale-efficiency and effectiveness. The logic and the main elements of VCA are highlighted in Figure 15.

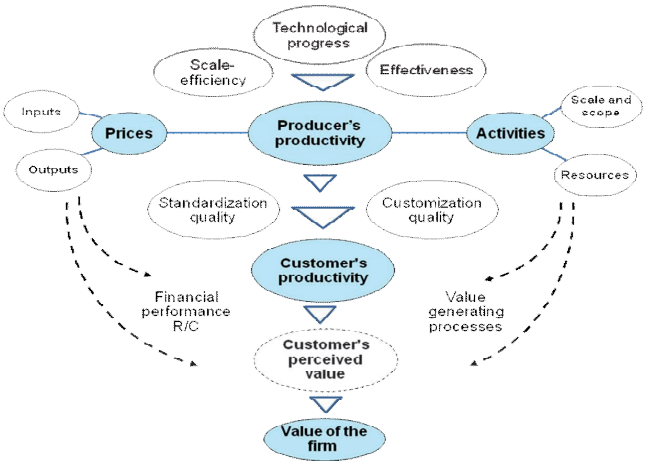

Figure 15. The main elements of the value creation process in VCA.

In general, a firm's value can be enhanced through a number of ways, including the productivity of the service process and the outcome, the scale scope of activities and the resources, as well as the prices of the outputs and inputs. VCA points out that producer's productivity, which consists of scale-efficiency, effectiveness and technical progress, is the *principal* source of the firm's value creation process. The realization of the productive outcome of the service episode is manifested in the customer's productivity, which is a specific combination of perceived customization quality and standardization quality. Ultimately, productive performance and value creation is contingent on how the firm's activities and the *resources* available to the firm are employed and how the customer is involved and used as a productive asset. This is also highlighted in Figure 15 (the dotted arrows on the right side). Assuming that input and output markets are competitive, the productivity in service production and the firm's capability of creating value can be evaluated with the cost-income ratio R/C (the dotted arrows on the left side). It also measures the profitability of service business. Accordingly, the firm's value, which is indirectly influenced by the customer's perceived value as well, reflects the productive performance of the firm[69]. In this setting, customer value is endogenous, influenced by the managerial choices of the profit-seeking entrepreneur, and the customer's specific context.

In deviation to the socio-economic paradigm, which assumes a trade-off between customer's perceived quality and procurer's efficiency, VCA maintains more objectively that the productivity of any service activity can be approximated by a concave trade-off between scale-efficiency and effectiveness at the highest possible level of productivity showing full employment of a firm's resources. In this setting, the key issue is not only the level of service quality, but also the optimal employment of a firm's resources with respect to the customers' preferences on the characteristics of service quality. Contingent on their flexibility and redeployability, a firm's resources can be used in the production of few number of customized services, or high number of standardized services. Reflecting economic scarcity, and the technological constraints and opportunities of a service firm, the productivity surface evolves through the firm's learning and experience of how to attain customer satisfaction in different customer segments. Such a trade-off, which is ignored in the established theories of service productivity, is characteristically continuous for intangible and labour-intensive services.

[69] The perceived value of a service is a complex experiential phenomenon, which is outside the main focus here.

In VCA customer's productivity is manifested in the perceived quality of a service which is decomposed into the standardization and the customization components. These components are interlinked through a *convex* trade-off. Within the suggested productivity model customization quality is a growing and linear function of the actual effectiveness, whilst standardization quality is a growing and linear function of the actual scale-efficiency. Hence, the level of customer's productivity follows directly from the actual productivity of the producer. Reflected by the convex indifference curve, the modelling of customer's productivity provides analytically improved and more realistic description of customer's preferences compared to the traditional uni-dimensional analysis of customer perceived value in the socio-economic analysis. Hence, higher customization of a service for the client implies a lower standardization of the service, which leaves the level of the net perceived quality unchanged along the indifference curve. This follows from the underlying assumption that high customization leads to higher sacrifices as the uncertainty of the service outcome increases and higher customer participation is needed in the production of the customized service. In reality customers differ in their preferences on service quality, which implies that their indifference curves are dissimilar as well. Some customers prefer customized service whereas some customers prefer standardized version of the same service.

In the value creation approach, service quality is implicitly concerned in all managerial decisions that change productivity. Cost-inefficiency, i.e. the deviations from the first-best productivity frontier, implies a decrease in the customized quality or (and) the standardized quality. It is also shown that the unilateral efforts by the producer to enhance productivity will in most cases lead to sub-optimal productivity for the customer. Managing productivity and the pricing of the services through the producer-user interaction, is fundamentally continuous, inter-temporal optimization. With the prevailing technology and costs, scale-efficiency and effectiveness need to be optimized and balanced to attain high customer satisfaction (perceived quality and value), retention rate and hence high present value of the revenues from the firm's customerships. The flexibility of a firm's resources (most often human) and service technology, which evolve through the interaction with the customers, determines whether and how the differentiated customers can be served through the differentiation of the service offering. Customer retention and profitability indicates the value of firm is ultimately reducible to the productive value of the firm's resources. The dynamics of VCA implies that when customer loyalty (retention) increases with the customization of the service, which is a plausible assumption, then the

customization may be more profitable strategy *in a long run* than standardization, even in the situation where the competitive price of the service is determined by the low cost and standardized service.

The *measurement* of service productivity should reflect the distinction between manufacturing and service, which is put forward in the socio-economic approach. Nevertheless, the method examined here is a reflection of the macroeconomic approach. Noting that quality, productivity and profitability constitute inseparable objectives in the production and the delivery of intangible, *marketable* services, it is concluded that the most viable index of service productivity is the *financial* revenue-cost ratio, R/C. Derivable from the standard accountancy of a firm, R/C shows high comparability longitudinally and cross-sectionally. In particular, R/C accounts for the technological trade-off, i.e. the possibility that various combinations of effectiveness and scale-efficiency may yield a same level of service productivity and profitability. High effectiveness implies high unit prices and high unit costs of services, whereas high scale-efficiency implies the opposite. In conclusion, the opposing cases may generate the same level of financial productivity. As long as the actual prices paid by the customers for the services fails to measure customer's productivity adequately, which usually is the case, the revenue-cost ratio can be considered as *a valid index for the productivity of a service firm.* Further analysis calls for supplementary, non-financial indices, which better account for customer's productivity, and value.

The main implication of the productivity analysis is that a service firm can attain the highest level of productivity with *various, concave combinations* of scale-efficiency and effectiveness. All points below the constant-productivity frontier indicate a waste of a firm's resources. The argument is contingent on the flexibility of the firm's resources and the technological opportunities of the other firms in the service industry. Assuming that the preferences of the customers on the service characteristic are differentiated by segments, that the service market is competitive, and that the service technology of an industry is *identical* for all the constituent firms in the industry, in the short run there may exist an industry equilibrium with be several differentiated firms (by market segment) producing on the different points of the productivity frontier.

If competition is effective, firms locating below the frontier will exit from the market and the frontier reflects the supply and demand of the service industry. In a more realistic case, it can be assumed that the firms of the service industry are differentiated by the service technology as well. This is depicted in

Figure 16. As a corollary, if there exists several firms in the competitive service industry with different technological opportunities, and the customers' preferences on the service are segmented, *the supply and demand of a service industry at a specific point of time may be characterized by the locus of concave productivity frontiers of the most productive and differentiated service firms.* The resulting productivity frontier in Figure 16 defines the array of industry strategies and approximates thus the existing technological opportunities of the industry. This is a central implication, which is further elaborated in Section 4.

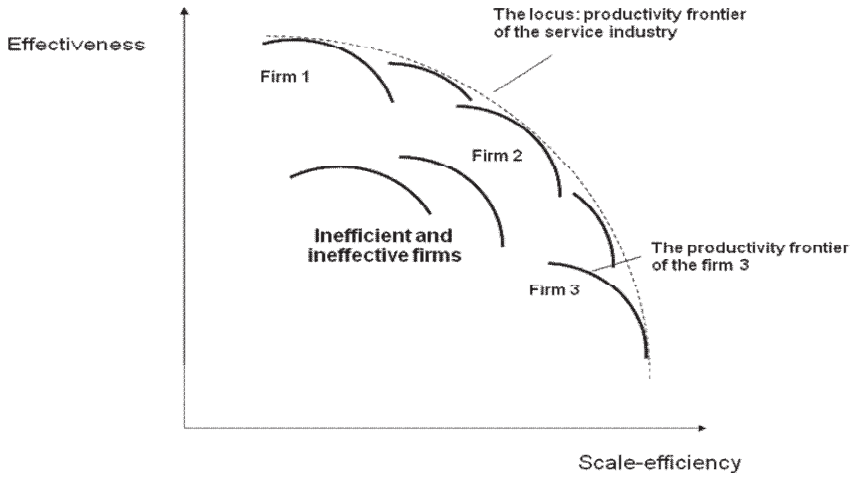

Figure 16. Illustration of the productivity frontier of a service industry in VCA.

4 Service productivity - extension to strategy and organizational design

4.1 Introduction

The productive performance and hence the success of the value creation strategy of a service firm is manifested in the revenue-cost ratio and its relative changes. Compared to the levels of productivity, it is more difficult to observe and approximate the *composition* of a firm's productivity in terms of scale--efficiency and effectiveness. This may require industry-wide information on the production possibilities and *comparable* information on the technologies of the service firms competing in specific markets (segments). Supplementary to the development of quantitative (direct) indicators that characterize productivity is to look into the specific characteristics of firms' strategies and organization (indirect qualitative indicators), which provide comparable information on the relative importance of scale-efficiency and effectiveness in the firms' business operations. As pointed out above, it is reasonable to assume that *the technological core* of a service firm is reflected by its *strategy,* which is further characterized by the *organizational design* of a firm[1]. Hence, this section focuses on the research question, *how can the synthesized (descriptive) approach to service productivity be supplemented with the (explanatory) approaches of strategic management and organizational design?* (see Section 1.2). The rationales are straightforward. While strategy and organization lay at the heart of the constituent theories of a firm and the competitive advantage, they are 'implicitly' involved in productivity and the productivity growth of a firm as well. These considerations are made more explicit in development of the 'extend value creation framework' in this section.

Strategic management provides a viable approach to the analysis of productivity, which lies behind the sustainable competitiveness of a service firm. In the spirit of 'economics of realism' and the premises of the descriptive value creation approach, the academic literature in strategic management assumes (implicitly) that the principal concern of the corporate management is profitability and the value of the firm. As with entrepreneurial firms, corporate management is interested in enhancing physical productivity of the processes as long as it is conducive to higher *profitability* and the value of the firm compared to the other tactics available to the firm. *It is shown here that the two main schools of*

[1] This assumes that the management of a firm is skilled and rational enough and the framework conditions of the industry are stable and predictable enough.

strategic management - the structuralist and the resource-based views - provide a plausible framework for explaining the productivity of a service firm. In this setting, the competitiveness and the modes of the productivity of the *services* delivered externally by the firm are a function of the external business environment, the *internal services* of the firm's activities, as well as the resources and the assets it controls. While much of the academic debate is focused on the apparent contradiction between the structuralist and the resource-based views, Section 4.2 points out that the two approaches can be merged through the premises of the dynamic capabilities theory of a firm. It will be shown that the 'merged view of strategic management', that is implicitly suggested in Løwendahl (2005) and further developed in this thesis, is an appropriate depiction of the value creation strategy of a service firm and derivable from the premises of the descriptive value creation approach to service productivity. The consistency of the 'merged view' with the descriptive value creation approach is illustrated with the earlier studies on the professional services which exhibit generally high knowledge-intensity[2]. The evidence of professional services is contributory to the empirical case study (see Section 5) as many of the banking services share the characteristics of professional services.

The mainstream of *organization theories* and approaches are directly or indirectly concerned with the firm's competitiveness and productivity as well. As with the other theories of firms, the study of organizational strategy seeks to answer the question "why do some organizations perform better than others" (Scott and Davis, 2003, p. 310). Logically, as the focus is geared to organizational performance and organizations that pursue private interests, the distinction between organizational theories, strategic management and economics of organization becomes blurred. The search of organizational fitness constitutes the core focus of transaction cost economics as well. In addressing the 'efficient' boundaries and 'efficient' organization of internal transactions of a firm, transaction cost economics provides practical implications for the analysis of service productivity as well. Organizational mode stands for a firm-specific resource that provides services to the productive processes of firms and other organizations[3]. For a service firm, organization is an integral part of the service technology. Given the importance of organizational innovations to a firm's competitiveness, *Section 4.3 shows that the descriptive value creation approach to service productivity is consistent with the main implications of*

[2] See the discussion of knowledge-intensive business services (KIBS) in Section 3.4.
[3] Grant (1991) notes that the key in the relationship between resources and capabilities is the ability of an organization to achieve co-operation and coordination within teams of resources. This requires that an organization motivates and socializes its members in a manner conducive to the development of smooth-functioning routines.

the organizational design – including organization theory and transaction cost economics. In the spirit of the contingency theory (see Section 2.3.2), the objective is to show that organizational choices of a firm affect productivity, and are affected by productivity considerations. The analysis establishes the inter-linkage between the organizational approach and strategic management as well. The multidimensionality of organizational productivity requires a detailed analysis, respectively.

4.2 Competitive strategy in service productivity

The main theoretical approaches to the strategies management of a firm are the *structuralist approach* and the *resource-based view of a firm* (Rumelt, 1991). The essence of the structuralist approach is manifested in Michael E. Porter´s extensive work in the fields of strategic management and competitiveness (Porter, 1980; 1985; 1998; McGahan, 2004), the logic of which is reducible to the *conflicting* objectives of the competition policy and the profit-seeking business firms. As firms seek for a position where they can best defend themselves against competitive forces of the market, or can influence them in their favour (Porter, 1980), strategizing[4] is also generally associated with anti-competitive behaviour. The *resource-based view* (e.g. Wernefelt, 1984; Peteraf, 1993; Barney, 1991; Barney; 2001; Grant, 1991) provides a more objective but abstract explanation of competitive advantage differences in firms' profitability. In contrast to the strategic positioning and extraction of monopoly rents put forward in the structuralist framework, the resource-based view (RBV) holds that the observable patterns of competition and market structure reflect rather 'economizing' of differentiated firms. Entrepreneurial competition and strive for a productive allocation of firm-specific resources are conducive to an increased productivity and competitiveness in an industry. Consequently, the attention is shifted away from product market barriers to (non-strategic) factor market barriers, which delimits the flow of resources in the economy and firms' access to them (Rumelt et al., 1991). As profit opportunities of any kind will be instantaneously discovered and exploited by the resource possessing firm (Sheehan and Foss, 2007), the resource-based view is not a theory of value creation (Priem and Butler, 2001). It does not open up the 'black box' of understanding how resources contribute to the value creation (Sheehan and Foss, 2007). It is contended here that the shortcomings of both approaches can be remedied through their integration with the *dynamic capabilities* theory of a firm (Teece et al., 1997). The analysis of competitive strategy in Section 4.2 starts with the discussion

[4] In this setting, strategizing, which protects from competition deteriorates the relative position of the competing companies.

of the Porterian generic strategies in Section 4.2.1, which lies at the core of the strcturalist approach. This is followed by the highlight of the resource-based logic and the integration of the two approaches within the dynamic capabilities framework in Section 4.2.2. Section 4.2.3 illustrates the integrated approach in the professional services, whereas Section 4.2.4 discusses the practical implications to service strategy and productivity.

4.2.1 The Porterian strategies

The logic of the structuralist approach derives from industrial organization, which until the 1980´s was dominated by the structure-conduct-performance (SCP) paradigm (e.g. Scherer, 1980). In *Competitive Strategy (1980),* Porter equalled the *structure* of an industry with the determinants of rivalry, which are reducible to a *five forces* external to a company. The *conduct* results from the implementation of the company strategy, which may take several forms[5]. *Performance* is reflected by the ability of a firm within an industry to earn, on average, rates of return on investment in excess of the cost of capital[6] (Porter, 1985). Prior to starting its operations, a firm is faced by two strategic choices, whether and when to enter a particular industry and *how* to compete in that context once it has been entered (Scott and Davis, 2003). The essence of formulating a competitive strategy is to relate the company's strengths and weaknesses to its environment, that is, the structure of the industry. Porter (1980) identifies three generic strategies aimed to create a defendable position and outperform competitors in the long run. These strategies are 1) *cost leadership*, 2) *differentiation,* and 3) *focused strategy*.

Cost leadership is based on the utilization of scale economies, cost reduction through experience, and a tight cost control of the functional activities of the firm. Through differentiation[7], the firm provides something regarded as unique within the industry and valuable by the customers. Differentiation allows the firm to command a premium price or to gain equivalent benefit, such as buyer loyalty, in cyclical downturns (Porter, 1985). Focused strategy is used to serve a particular buyer group, product segment or geographic market. Based on cost leadership, differentiation, or both, *focused strategy rests on the*

[5] The main forms are offensive, defensive, anticipatory and diversifying strategy.
[6] The conclusions of the model are not distorted if alternative performance indicators are used instead.
[7] Porter (1980; 1985) makes no explicit assumption whether differentiation in his analysis is horizontal or vertical. When products are different according to features that can't be ordered, a horizontal differentiation emerges in the market. Vertical differentiation occurs in a market where the several goods that are present can be ordered according to their objective quality from the highest to the lowest. It is possible to say in this case that one good is better than another (http://www.economicswebinstitute.org/glossary).

premise that the firm is able to serve a narrow target more efficiently and effectively than competitors with an industry-wide scope (Porter, 1980).

As with service management and marketing, productivity of the physical processes is not regarded as a primary goal of a firm within the structuralist approach. Following the reasoning of the SCP paradigm (Scherer, 1980) the primary goal of the company is high profitability and the high return on invested capital[8]. Accordingly, the productivity of the firm's processes is pursued as long it is conducive to the firm's financial goals[9]. In a similar vein, the strategy of a firm is valuable to the extent it creates value to the customer over the costs incurred by the firm. In this way the structuralist approach creates a link between the operational efficiency in a spirit of the neoclassical theory, and the financial productivity concepts advocated by the value creation approach (VCA). Within the struturalist framework the price of the product and service, which the customer is actually willing to pay, is lower than the total buyer's value. In the selling firm's productivity indicator, measured with unit value of sales per production costs, the *nominator* is the selling prices P, and the *denominator* is the production costs C. For the business-to-business transactions, which Porter implicitly assumes, the buyer's value of a product and service can be symmetrically increased by reducing the buyer's *costs* or improving the buyer *performance* through the characteristics of the intermediary product and service it purchases.

Intuitively, with the strategy of cost leadership, the selling firm increases the buyer's value by reducing the buyer's cost, which equals to the purchasing price of a standardized service or product. Higher buyer's value associated with differentiation and the 'premium price' may lead to cost reduction in the buyer's processes or increase in the performance of the buyer's output (higher quality). Hence, the strategy conducive to the productivity of a selling firm determines the productivity impact of the intermediary product and service to the buyer's production processes, as well. In conclusion, the comparison of buyer's value with respect to seller's costs lays the basis for the overall productivity

[8] "A firm is profitable if the value it commands exceed the costs involved in creating the product. Creating value for the buyers that exceeds the costs of doing so is the goal of any generic strategy. Value instead of cost must be used in analyzing competitive position since firms often deliberately raise the cots in order to command a premium price via differentiation [customization]" (Porter, 1985, p. 38).

[9] This is not to say, however, that Porter ignores the importance of productivity entirely. In his *Competitive Advantage of Nations* (1990) Porter maintains that the productivity of industries and firms is the key determinant of the prosperity of nations. Similarly, operational efficiency is analyzed in his later work, *On Competition* (1998).

analysis within the 'standard' structuralist framework[10]. This is analogous with managing scale-efficiency and effectiveness within the value creation approach (VCA) to service productivity.

As a further demonstration of the analogy with the value creation approach, Porter (1998) notes that a sustainable strategic position requires trade-offs. Porter (1998) argues that competitive performance necessitates a 'fit' between the strategic goals and means, as well as between the firm's activities, and the actual actions taken to conduct a chosen strategy. This implies that the strategic position is not sustainable unless there are *trade-offs* with other positions (Porter, 1998). A trade-off occurs when some of activities or actions potentially available are mutually incompatible. More of one thing cannot be attained without less of another. Given the generic strategies of differentiation and cost-leadership which characterize a firm's productivity, Porter's reasoning implies that at the highest attainable level of productivity, there is a 'continuous' trade-off between *cost leadership*[11] and *differentiation* for a specific industry and a relevant market[12]. Differentiation is costly as higher uniqueness pursued by a firm is associated with higher expenses relative to the competitors with the low cost strategy. In this regard there is a distinct analogy with the value creation approach. Since the strategic options and associated technologies are by assumption continuous, the analysis is consistent with the VCA model on service productivity, as well.

Porter (1998) assumes that there exists a trade-off between the competitive strategies that are conducive to higher 'operational effectiveness'. This is highlighted in Figure 17. An increase in the operational effectiveness implies higher productive value to buyers with the given cost structure, or lower unit costs with a given buyer's productive value, or both simultaneously. Distinctively, operational effectiveness defined by Porter (1998) parallels to the functional form of service productivity in Figure 15 as a co-product of scale-efficiency and effectiveness. As both perspectives address the duality between production efficiency and the non-pecuniary value perceived by the customer, they show *analytical* consistency in highlighting the strategic alternatives to a service firm. The 'continuity' of the

[10] Porter himself does not address the dual perspective of the seller and the buyer explicitly.
[11] More specifically, the strategy of cost-leadership in the Porterian model refers to unit cost reduction based on the utilization of economies of scale in the production process.
[12] The value of differentiation in Figure 17 is measured by the customers' preferences (perceived quality), and the shape of the productivity frontier reflects a diminishing marginal rate of substitution for the constituent strategies given the technological constraints of the industry.

trade-off is a plausible assumption for services, which show generally higher technological flexibility (divisibility) in resources than for manufacturing; the implicit focus within the structuralist framework.

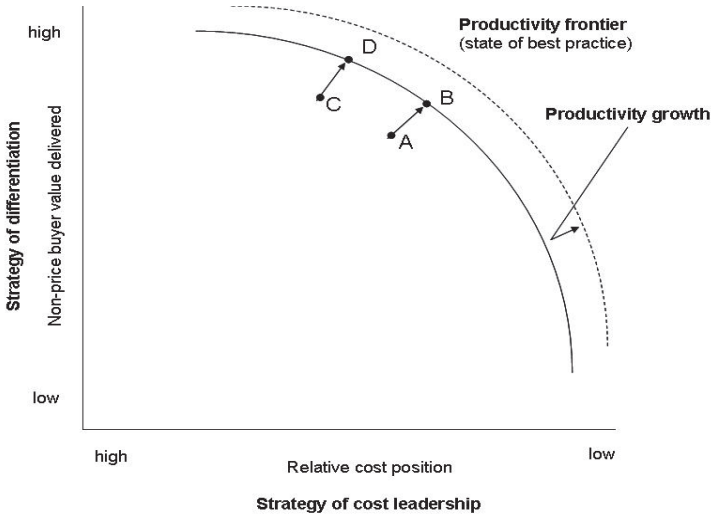

Figure 17. Operational effectiveness vs. strategic positioning (Porter, 1998).

In deviation to the micro-theoretic analysis in Figure 14, however, where the trade-off between scale-efficiency and effectiveness describes the *technology* of a service firm, the Porterian productivity model depicts the *strategic* options with respect to cost-efficiency and the degree of product differentiation available for the firms of a specific industry. A better counterpart to the Porterian productivity model in Figure 17 is the VCA industry model in Figure 16, which provides a *more rigorous* depiction of the productive strategies of a service firm. This follows from the *stylized fact* that scale-efficiency and effectiveness are more viable concepts to define the productive trade-off, particularly in services. *First*, the Porterian cost-leadership strategy on the horizontal axis in Figure 17 actually refers to the utilization of the economies of scale, as all points below the productivity frontier exhibit the potential to improve the operative cost-efficiency[13]. Showing differing levels of scale-efficiency, points D and B in Figure 17 represent the best practises and the increased operational cost-efficiency resulting from the moves from points A and C. *Second*, the 'client-centric' effectiveness is a

[13] Operative cost-efficiency is the other main component in the Porterian cost-leadership concept.

more appropriate description of the outcome, which the customer trades off than the 'producer-centric' differentiation. From the producer perspective, differentiation is fundamentally aimed to satisfy the needs of a 'representative customer' of a specific customer segment, whereas effectiveness involves customization for an individual client. Consequently, effectiveness implies 'characteristically' a higher value for an individual customer than the segment-based (horizontal) differentiation.

In recognition of the strategic trade-offs in the value creation by a firm, the continuous productivity frontier suggested by Porter (1998) needs a further qualification as well. In his original writings Porter maintains that 'stuck in the middle' between cost leadership and differentiation unavoidably leads to poor competitive performance (Porter, 1980). In that case firms are unable or unwilling to make explicit choices about how to compete[14]. For a *focused* strategy instead, 'stuck in the middle' is a minor problem as competitive advantage stems primarily from the specialized knowledge on a specific customer segment or a spatial market. Accordingly, the assumption of a continuous productivity frontier in Figure 17 rejects the stuck in the middle –argument, which is criticized in the field of relationship marketing as well. For the maintenance and profitability of long-term customer relationships, Ravald and Grönroos (1996) note that the strict dichotomy between differentiation and cost leadership should not be regarded as a general template in making explicit strategic choices. An optimal strategy is always a combination of cost leadership and differentiation, but the highest priority is to provide value targeting on the right customers, whom the company is able serve profitably (Ravald & Grönroos, 1996). Within the 'neo-structuralist' framework this implies that the feasible strategy is automatically a *focused strategy* and the choice of the customer segment[15].

For the refinement of *Competitive Strategy* (1980) Porter´s subsequent work in *Competitive Advantage* (1985) provides an explanation of how competitive advantage of a firm is actually created to attain a superior market position and performance. With the shift of the focus from the industry level down to the firm level, *strategizing* gives way to *economizing* on the internal competitive advantages. The core

[14] "Stuck in the middle is an extremely poor strategic situation…The firm stuck in the middle is almost guaranteed low profitability. It either loses the high-volume customers who demand low prices or must bid away its profits to get this business away from low-cost firm" (Porter, 1980, p. 42).

[15] Actually, the generic strategies are not independent in Porter's original framework, either. This is simply because the profitability of differentiation depends on how much the value perceived by the buyer exceeds the cost of differentiation. In particular, differentiation aims to create the largest gap between the buyer value created (the price premium) and the cost of uniqueness in the firm's value chain. The cost of differentiation will vary by value activity, and the firm should choose those activities where the contribution to buyer value is greatest relative to the cost. This implies pursuing low cost sources of uniqueness as well as high cost ones that have high buyer value (Porter, 1985).

of *Competitive Advantage* (Porter, 1985) is an *activity-based* view of a firm. The activity-based view follows the logic that argues that firms are not paid for products *per se,* but rather they are reimbursed for the activities they perform to provide products to consumers (Sheehan and Foss, 2007). Porter (1985) specifies that activities are what firms do, and they define the resources and capabilities that are relevant. Activities provide the connection between factor markets and product market positions. Hence, competitiveness and strategy of a firm are reducible to the performance of functional *activities* such as production, logistics and marketing, which entail costs and generate value to the customer. Nevertheless, while competitive advantage and profitability of a firm build on the managerial and organizational capability of implementing the generic strategies of cost leadership and differentiation in each activity, it is particularly strategy that makes most resources and capabilities valuable, and their value is diminished by different strategy (ibid.).

The activity-centric view in Porter (1985) is operationalized through the firm's value chain depicted in Figure 18. It consists of the sequence of *primary activities*; inbound logistics, operations, outbound logistics, marketing & sales, and service. Operations are defined as a collection of activities, such as machining and packaging, related to the transformation of inputs into final products. Hence, operations are equals conceptually to the traditional production function of a neoclassical firm. The value chain also contains a number of *support activities* which maintain and enhance the smooth running of the value chain and channel resources into the activities. In this setting services consist of activities to enhance and maintain the value of the product including installation, repair, training etc. Characteristic of the production processes of manufacturing companies the main purpose of services is to sustain and enhance smooth running of the operations, and the other primary activities[16]. From a wider perspective however, it is easy demonstrate that the value chain analysis is applicable to service productivity within the value creation approach (VCA). In particular, the output of a firm's activities can be interpreted as internal services of a firm needed to provide value to the customers (Penrose, 1959). Hence, the productivity of a firm within the framework depicted in Figure 18 is determined by the productivity of the internal service activities, which are operative in the firm's value chain. Whereas the Porterian question of why some firms within an industry perform better than other lies in their differing

[16] Interpreted within Gadrey's (2002a) framework of service transformation the services in Porter´s value chain represent a specific mode of service transformation of physical objects. Consequently, lacking generality the value chain perspective may be insufficient for a number of service industries. Løwendahl (2005) suspects that the value chain is difficult if not impossible to adapt to professional service firms lacking a linear production process with input, transformation and output.

capabilities to manage uniqueness (differentiation) and cost advantage for a specific activity (Porter, 1991)[17], for the value creation approach (VCA) of service productivity a parallel question is the capability to manage *scale-efficiency* and *effectiveness* of the internal service activities. Relevant for the competitive advantage is the complementarity, or 'fit' of the activity set of a firm. Porter (1991) notes that managers can identify attractive competitive positions, and use benchmark data on rival's activities to gauge how successful their firm may be in capturing the advantage. The value chain of a firm is the basic tool for understanding the strategic role of technology as well. The central argument raised by Porter is that technology is embedded in each value activity of a firm. Every activity uses some technology to combine purchased inputs and human resources to produce some outputs (Porter, 1985). Within the VCA this implies that the primary activities as well as the supporting activities are conducted by a specific production function, which reflects the *effectiveness* and *scale-efficiency* of the underlying service technology.

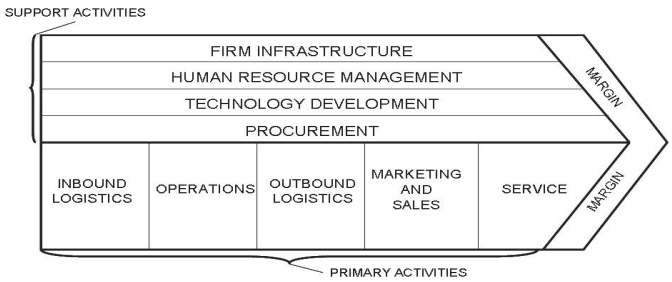

Figure 18. The generic value chain (Porter, 1985)[18].

As the competitive position and advantage of a firm is contingent on the efficiency and effectiveness as well as the composition of its activities, the firm-specific differences in their strategies and profitability – through higher value and lower costs - is determined by the *activity drivers*. As noted by Pearce and Robinson (2005) activity drivers constitute the underlying source of competitive advantage, and make competitive advantage operational. The same set of drivers determines both relative cost and differentiation (Porter, 1985). The most central drivers of an activity include its scale, cumulative

[17] "The basic unit of competitive advantage is the discrete activity. The economics of performing discrete activities determines a firm's relative costs not attributes of the firm as a whole. Similarly, it is discrete activities that create buyer value and hence differentiation" (Porter, 1991, p. 102).
[18] The value chain displays total value and consists of value activities and the profit margin (Porter, 1985).

learning in the activity, linkages between the activity and others, the ability to share the activity with the other business units, the pattern of capacity utilization in the activity over the relevant business cycle, the location of the activity, the timing of investment choices in the activity, the extent of vertical integration in performing the activity, the institutional factors affecting how the activity is performed, e.g. regulation, and the firm policies how to configure the activity independent of the other drivers (Porter, 1991). With the interpretation of Sheehan and Foss (2007) the (Porterian) activity drivers are generic, structural factors that are more or less under management control which impact the cots incurred or value delivered by an activity. In conclusion, drivers are inequivalent to firm's resources, but they are domains of 'levers' where the dynamic capabilities of the firm and management can be used in the value creation process. In Porter's terminology the capabilities correspond to the *control* of the drivers and *reconfiguration* of the value chain.

4.2.2 The resourced-based view and the dynamic capabilities

For the normatively oriented structuralist approach, there exists a competing paradigm of strategic management, stressing firm-specific characteristics as the ultimate sources of a firm's competitive advantage (e.g. Barney, 1991, 2001; Grant, 1991; Peteraf, 1993)[19]. The *resource-based view* (RBV) provides a more objective but also highly abstract explanation for the persistence of profit differentials in the competitive markets. In contrast with the pursuit for strategic positioning and monopoly rents put forward in the structuralist framework, the resource-based view implies that observable patterns of competition and market structure should rather reflect *efficiency* of the economic system. That is, entrepreneurial competition and strive for a productive allocation of firm-specific resources are conducive to an increased aggregate productivity and competitiveness of the economy[20]. As the differences in performance tend to signal the differences in the resource endowments, the attention is

[19] A great deal of the analysis within the resource-based paradigm focuses on the duality of input and output markets, and hence, the apparent controversy with the Porterian theory. This can be called a *chicken-egg dilemma*. As Wernefelt (1984) notes, resources and products are two sides of the same coin. In particular, given the characteristics of product market activities it is possible to infer the minimal necessary resource commitment. Conversely, given the resource profile of the firm, it is straightforward to choose the needed product market activities (Wernefelt, 1984).

[20] The development of the resource-based explanation to a distinct school of competitive advantage and strategy owes substantially to the intellectual inheritance of Edith Penrose. In her path-breaking work *The Theory of the Growth of the Firm* (1959) Penrose delineates a coherent theory of the management of a firm's resources, productive opportunities, growth, and diversification. In their retrospective assessment Kor and Mahoney (2004) note that Penrose provides an explanatory logic to unravel causal links among resources, capabilities, and competitive advantage, which contributes to the resource-based theory of competitive advantage.

shifted away from product market barriers to the non-strategic factor market barriers, which delimits the flow of resources in the economy and firms' access to them (Rumelt et al., 1991)[21].

While Porter's firm level analysis in Competitive Advantage (1985) can be seen to reflect a parallel shift as well (Sheehan and Foss, 2007)[22], the resource-based school maintains that firms build enduring advantages only through efficiency and effectiveness of firm-specific assets and capabilities (Teece et al., 1997). Teece (1982) notes that a firm's *capability* lies upstream from the end product – it lies in a generalizable capability which might find variety of final product applications. The difference between resources and capabilities is usually a matter of degree. In general resources are inputs of the production process, including e.g. the skills of individual employees, patents, brand names, finance etc (Grant, 1991) under the control of firm. *Assets* refer to a sub-set of resources owned by a firm (McGahan, 2004)[23]. Few resources are productive in their own as productive activity requires the cooperation and coordination of teams of resources (Grant, 1991). A capability is the capacity for a team of resources to perform some task or activity. While resources are the source of a firm's capabilities, capabilities are the main source of its competitive advantage (Grant, 1991)[24]. Within the resource-based models capability is commonly equalled with the ability to execute and perform, which is based on human or organizational skills (Amit and Shoemaker, 1993). In this regard capabilities are close equivalents to *competences* (Løwendahl, 2005, Prahalad and Hamel (1990)[25]. Of a particular importance for the productivity growth are *dynamic capabilities* as defined e.g. in Teece and Pisano (1998) and Teece (2009). According to Teece and Pisano (1998) the term dynamic capabilities emphasizes the key role of strategic management in adapting, integrating, and re-configuring internal and external organizational skills, resources, and functional competences toward a changing environment.

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[21] As suggested by Hoopes et al. (2003), RBV can be regarded as special case of a broader approach called 'competitive heterogeneity'. In that framework resources and capabilities play a key role but they do not explain all persistent performance differences. Accordingly, there are other sources of heterogeneity as well.

[22] Porter's (1985) activity-based view is closer to Chicago perspective as the rents earned are not due to exercising market power but rather being more efficient than rivals (Foss and Sheehan, 2007).

[23] The business assets involve difficult-to-trade knowledge assets possessed by the firm, the complementary assets as well as reputational and relational assets, which are external to the firm. Technological know-how, financial assets as well as locational assets and business assets are influential to the firm's market share and profitability at any point in time (Teece and Pisano, 1998). Of the business assets some are critical for the success of the industry – the core assets (McGahan, 2004) – while some assets are distinctive indicating the competitive advantage of the firm.

[24] Like assets resources are 'stock' of endowments, while capabilities imply 'action' (Sheehan and Foss, 2007).

[25] Consequently, there is a hierarchy of a firm's capabilities, on the top of which are what Prahalad and Hamel (1990) call *core competences.* Prahalad and Hamel (1990) define core competences as collective learning in the organization, especially how to coordinate diverse production skills and integrate multiple streams of technologies.

Given the omnipotence of the resource position, the process of strategy formulation by a firm can be highlighted through the *five-stage procedure* displayed in Figure 19. The procedure involves 1) the analysis of the firm's resource base, 2) the appraisal of the firm's capabilities, 3) the analysis of the profit-earning potential of the firm's resources and capabilities, 4) the selection of the strategy, and 5) the extension and upgrading of the firm's pool of resources and capabilities. Identification of the firm's resources involves the appraisal of strengths and weaknesses relative to competitors, as well as the identification of opportunities for better (more productive) utilization of the resources. The identification of the firm's capabilities in Stage 2 is attended with the assessment of the capabilities of the competing firms, i.e. what the firm does more effectively than rivals. The realization of competitive advantage of the firm is contingent on its sustainability and also the *appropriabilty* of the returns (Teece, 1986; Teece et al., 1997)[26]. This is central for the appraisal of the rent-generating potential of the resources and capabilities in Stage 3. The issue of appropriability concerns the distribution of returns of the resources in circumstance where the property rights cannot be explicitly defined[27].

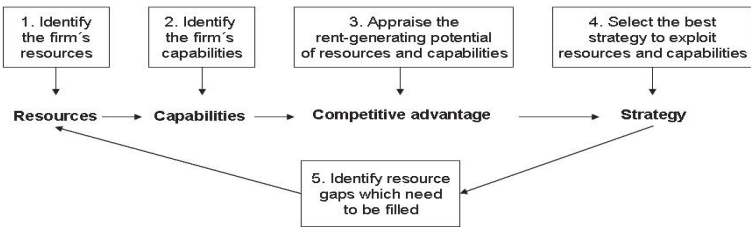

Figure 19. The resource-based approach to a firm's strategy (Grant, 1991).

At Stage 4 it is not specified how to select a strategy which best exploits the firm's resources and capabilities. In general this is the major shortcoming of the resource-based view. In particular, it does not open up the 'black box' of understanding how resources contribute to the value creation (Sheehan and Foss, 2007). Stage 5 in Figure 19 adds dynamics to the standard resource-based analysis. Filling

[26] In Grant's model the sustainability of the competitive advantage is determined by high durability and low transparency, transferability and replicability of the resources and the associated capabilities from the industry point of view.

[27] This is typically the case where the technology is owned by the firm and the human capital is owned by an individual employee. Thereby, the more the performance of employees is contingent upon other resources and organizational routines of the firm the more control the management and the firm can exercise over the returns of the resources (Løwendahl, 2005). As Grant notes, a firm's dependence upon skills possessed by highly trained and mobile key employees is particularly important in the case of professional service companies where the employee skills are a distinct resource (Grant, 1991).

the gaps involves the maintenance and augmentation of the resource base to buttress and extend the competitive advantage and strategic opportunity set[28].

It is clear from Figure 19 that if the planning procedure from Stage 1 to Stage 4 is reversed, it approximates the causality of competitive advantage within the structuralist framework. *The point made here is that the structuralist and the resource-based views are strongly complementary and thereby they are required simultaneously to explain competitive advantage, and hence service productivity and productivity of a service firm* (cf. Løwendahl, 2005). The key role in the integrative analysis is played by the dynamic capabilities theory by Teece and Pisano (1998), Teece et al. (1997) as well as the antecedent ideas of Penrose (1959). For Penrose the firm is an administrative unit distinguishable by its productive resources, the disposal of which between different uses and over time is determined by an administrative decision by the *management*. In particular, management is seen as a distinctive resource, which through the capacity and quality of the managerial services determines the productive co-deployment of other resources[29]. This demonstrates an axiomatic view on the relation between good management and economic performance. Hence, for Penrose *it is never the resources themselves that are the 'inputs' in the production process, but only the services that the resource can render* (Penrose, 1959). The main implication of the Penrosean analysis is that the performance of any resource can be approximated by the amount and quality of the productive services it actually provides[30]. The performance of the services of the resources materializes through their employment in a productive *action* which is contingent on the technology and managerial and organizational capabilities (skills) of the firm. Capabilities are part of the managerial technology (skills), which transforms the productive potential of resources into profitable action. In reference to the dynamic capabilities theory Teece and Pisano (1998) note that managers coordinate or integrate activity inside the firm. How *effectively* and *efficiently* internal coordination and integration is achieved is very

[28] At optimum the strategy should push slightly beyond the limits of the firm's current capabilities to meet future challenge (Grant, 1991).

[29] The capacities of these managers (henceforth, internal managerial capacities) shape the scope and complexity of activities that a firm can undertake. Since internally experienced managers cannot be hired from outside and must be developed within the firm over time, there are limits to the rate at which a firm can expand its activities at any time. A fast-growing firm is thus likely to encounter managerial problems because it cannot adjust its managerial resources to the desired level in a timely fashion. To express these ideas compactly: managerial time and attention are the scarce resources that are the binding constraint on the rate of the growth of the firm. In other words, dynamic adjustment costs place a limit on the rate of developing and deploying dynamic capabilities. The impact of this managerial constraint on the growth of the firm has been cited as the 'Penrose effect' in the research literature and has been empirically examined in a number of studies.

[30] Resources are profit-generating endowments of a firm, the productivity of which cannot explicitly be identified *per se.*

important. This implies that managerial and organizational capabilities are needed to coordinate the firm's activities in the *Porterian value chain*, and in a way which enhances productivity of each activity[31].

Contingent on the 'qualities' of the dynamic capabilities of a firm and its management, *transformation* and *reconfiguration* enables competitive utilization of the services of the internal and external assets for the productive operations of a firm's activities. Assets (resources) are inputs which need to be upgraded and re-bundled to provide the required amount and quality of services to the firm's production function approximated by the composition of the firm's activities (the value chain). As noted by Grant (1991) there is no predetermined functional relationship between the resources of the firm and its capabilities. Symmetrically, this holds for the relationship between the capabilities and activities of the firm. Operated through the managerial skills and organizational routines, the activities need to be up-graded as well. In the theory of dynamic capabilities *learning* is a process through which repetition and experimentation enable tasks to be performed better and more quickly and new production opportunities can be identified (Teece and Pisano, 1998). The notion that learning involves organizational as well individual skills (ibid.) implies that the extent to which capabilities are actually dynamic and conducive to improved productivity of the activities is a function of the patterns of managerial and organizational learning[32]. On aggregate this demonstrates that the inclusion of the aspects of evolutionary theory of a firm by Nelson and Winter (1982) into *the dynamic capabilities analysis provide an analytical 'bridge' between the firm's assets (resources) and activities, and hence between the resource-based view and the structuralist view on competitive advantage.* Apart from the locational resources and learning, the Porterian *drivers* of costs and differentiation in the 'integrated'

[31] In this setting coordination embraces the external activities in relation to other firms as well. In a similar vein, the authors note that in rapidly changing environments, there is obviously value in the ability to sense the need to reconfigure the firm's *asset* structure and to accomplish the necessary internal and external transformation (Teece and Pisano, 1998).

[32] A more detailed analysis of skills highlights the analogy to the value creation approach (VCA) as well. In general, the skill involves the selection of behavioural options but the selection process itself is highly *automatic*. The choice among behavioural options that takes place in the exercise of a skill, and may involve no deliberation, is a constituent of the capability that is represented by the skill. Skills are deep channels in which behaviour normally runs smoothly and effectively (cf. Nelson and Winter, 1982). Skilled acts are regarded as choices embedded in a capability, which overturns the above 'separation assumption' made by the neoclassical theory. In particular, there always exists the option to modify skilled performance by deliberate choice, which expands the potential diversity, flexibility and adaptability of behaviour. Nelson and Winter (1982) raise a central point to highlights the essence of productivity of labour (human capital), and hence *internal services* of a firm. In consonance with the standard decomposition of productivity into scale-efficiency and effectiveness, the authors note that *in a sense there is a trade-off between capability (rule-guided or suppressed choice) and deliberate choice, a trade-off imposed ultimately by the fact that rationality is bounded*. More specifically, their statement identifies implicitly the prevalence of the trade-off between rule-guided (efficiency) and deliberate (effectiveness) choice characteristic of the productivity of an individual skill.

framework of strategic management are the domains, where the dynamic capabilities enhance productivity of a firm's activities. The dynamic capabilities of the highest relevance are the managerial *control* of the productivity drivers as well as *reconfiguration* of the value chain suggested by Porter (1985). If effectiveness and scale-efficiency are substituted for differentiation and cost-leadership, as suggested in the modification of the structuralist approach above, the integrated framework of strategic management and productivity of a service firm can be derived from the generic value creation model. This is depicted in Figure 20. Within the Porterian spirit the model assumes that competitive conduct of the corporate strategy with respect to service productivity is a consistent coordination of the internal activities of the corporation[33]. This assumes that the increase of productivity as well as adjusting the balance between scale-efficiency and effectiveness of each activity is supportive of the corporate goals.

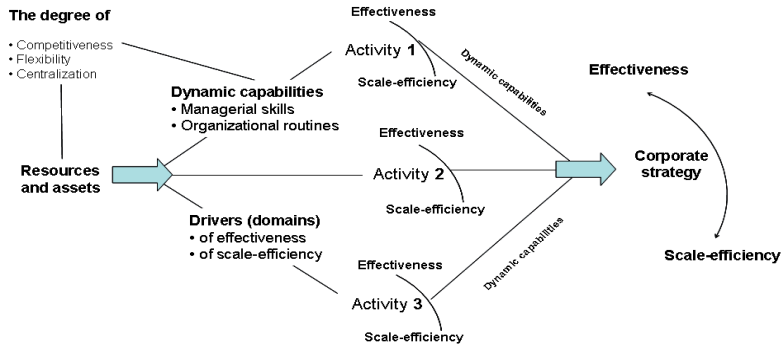

Figure 20. The explanatory VCA as an integrated framework in strategic management.

The consequent issue is then to assess the productivity implications of the integrated model of strategic management for the firm's resources, assets and capabilities. For the competitiveness of firm's resources Barney (1991) maintains that only a distinct sub-set of a firm's physical, human and organizational capital are by definition, a firm's resources. Whereas resource *heterogeneity* and *immobility* are necessary conditions for the existence of competitive advantage, they do not guarantee its sustainability[34]. Barney suggests four additional attributes of firm resources which sustainability

[33] According to Porter (1998) the basic unit of competitive advantage is the discrete activity. The economics of performing discrete activities determines a firm's relative costs not attributes of the firm as a whole. Similarly, it is discrete activities that create buyer value and hence differentiation.

[34] Though sustainability is a key attribute of competitive advantage for Porter as well, it gets little attention in his analysis.

should assume (see also Grant, 1991). The resources must be *valuable*, *rare* and imperfectly imitable to enable sustainable competitive advantage[35]. Moreover, there cannot be strategically equivalent *substitutes* for a specific resource (Barney, 1991). Logically, the same characteristics apply to a firm's capabilities.

Equivalent to the trade-off between cost-leadership and differentiation in the Porterian productivity model, *the resource-based view identifies a trade-off between efficiency and flexibility inherent in the performance of teams and organizational routines,* which is determined by the *transferability of resources* between their alternative uses (Grant, 1991). In the context of the service productivity model outlined in Section 3.6, flexibility of firm's resources and capabilities is also the key determinant in the utilization of the productive trade-off between scale-efficiency and effectiveness. *Horizontal flexibility* (transferability) implies that the production of a service can be tailored to several customers with a horizontally differentiated demand for effectiveness, whereas *vertical flexibility* (transferability) implies that the service firm can serve a specific customer segment with differing combinations of scale-efficiency and effectiveness[36]. The appropriabilty of returns (Stage 3 in Figure 19), and hence managing the balance between organizational routines and individual skills, is relevant for the characteristics of service productivity as well. The accumulation of a firm's capabilities into a number of small teams and individual skills implies *decentralized* employment of a firm's resources with a low interdependence between the relevant activities. Such a production model enables high flexibility and effectiveness with respect to specialization and scale-efficiency. Similarly, the accumulation of a firm's capabilities into organizational routines and complementary activities implies a *decentralized* command of a firm's resources. Such a production model favours repetitive processes and high scale-efficiency relative to effectiveness (see Figure 20).

4.2.3 Supplementary insights from professional services research

Most of the academic interest in strategic management is geared to manufacturing firms with highly standardized processes and tangible resources and products (Porter, 1980; 1085). In many service

[35] There are several factors that inhibit imitation, linking the resource-based analysis with the organizational theories. Among these factors are the unique historical context of the firm (Nelson and Winter, 1982), causal ambiguity between the resources and performance (Williamson, 1985), and social complexity based on tacit information (Thompson, 1967).
[36] This implies flexibility in moving along the productivity frontier.

industries, in contrast, firms operate with unique processes and intangible inputs and outputs. If the survival in the markets assumes responsiveness and continuous adaptation, a commitment to sticky strategies may have an adverse influence on the competitiveness of a service firm. In particular, this holds for professional service firms in which flexibility of adding new clients, services and competent professionals is absolutely crucial (Løwendahl, 2005)[37]. Professional service firms are of *special interest here*[38] 1) as their value creation processes are regarded as the opposite of the manufacturing processes, and 2) both types of processes are utilized in *universal banking,* which is the focus of the case study in Section 5. As the technologies of the service firms draw almost entirely on individual, team-based and organizational knowledge, the production of professional service is to a high extent flexible, decentralized, and unconstrained by the 'physical' preconditions such as plants, buildings or other infrastructure. It is safe to maintain that the evolving business models of professional service firms manifest the evolutionary progress of growing knowledge-intensity in the production of other services as well. This will be demonstrated in the case of the universal banking industry in Section 5. In particular, the focused examination of the professional services is contributory to a theoretical analysis. Based on the empirical findings in Løwendahl (2005) and (Løwendahl et al. 2001), it will be demonstrated that firm-specific assets in the resource-based view and the external market environment in the structuralist approach are equally important sources of the competitiveness and strategy of the professional services firms. It is further demonstrated that the integrated *approach to strategic management by Løwendahl (2005) provides a viable framework for the analysis of the productivity of a service firm, and is thereby consistent with the premises of the descriptive value-creation approach to service productivity (VCA)*.

The strategy and the value creation in the professional services are based on the interplay between the *domain*, *resources* and *delivery*. Reflective of the choices of what is delivered, to whom, where and how, the strategy changes through an evolutionary process of learning and adjustments between the

[37] Løwendahl (2005) notes that strategy is necessary in order to achieve coordinated activities in a highly decentralized and non-routinized structure, where the lack of detailed plans makes an agreement on goals and priorities fundamental. *Yet, service strategy cannot involve a top down formulation and implementation of plans and procedures, or a detailed description of how the goals should be achieved. Accordingly, the strategy of a professional service firm should involve the development and communication of the vision, focal competence areas, explicit goals, and priorities set for market segments. The market segment includes the choice of client groups, as well as the geographic dimension of the market.*

[38] The discussion of professional services here refers to KIBS such as engineering, advertising, consulting, accounting, and juridical services. Among the distinct features of the professional services are a high degree of customization of the services delivered, a high degree of intangibility and knowledge-intensity of the service processes, as well as high interaction of the professionals with their clients.

firm's resource base and the domain[39]. In prioritizing specific clients and projects in the firm's domain, strategy is subject to the chicken-and-egg dilemma. A given pool of processes, employees and knowledge support specific strategic choices in the market, whereas a certain portfolio of clients and projects attracts professionals with specific skills and competences. Knowledge is the most valuable *resource* of the professional service firms (Løwendahl, 2005; Teece, 1998). Knowledge assets play a key role in the processes of value creation for the clients, as well as for the owners of the firm[40]. Through the firm-specific knowledge management system[41] conducive to service innovation, knowledge assets maintain and enhance the competitive advantage (Løwendahl, 2005; Adams and Lamont, 2003)[42]. As pointed out by Penrose (1959) and Teece and Pisano (1998) managerial capabilities play a key role in mobilizing the organizational knowledge, firm's assets and individual skills and assets. This holds also for the external competences, such as loyalty, reputation and track records (Teece et al., 1997) possessed by the clients and the suppliers of the firm. The third element of the strategy linking the resources and the domain, is *service delivery,* (Løwendahl, 2005) characterized by the underlying technologies and knowledge management strategies (Hansen et al., 1999). Within the context here delivery encompasses *Porterian primary activities* (Porter, 1985) of which sales, production and distribution are the most important. In most cases the activities are technologically inseparable (non-specialized) as professional employees may be engaged in all relevant activities simultaneously.

The value creation process contains several sources and processes. Through the value delivered to the clients' processes the service firm receives financial value in the form of revenues and profits. The owners of the firm gain also via the accumulated knowledge and experience, retained in the firm. As with reputation, this source of value creation is of high importance for professional service firms and

[39] Given the high innovativeness, the responsiveness to unique client needs and unpredictability of which target projects will be won by the firm, *strategic management in professional service firms cannot be centred on the development of a detailed long-term plan* (see Section 5.4).

[40] To make the point more specific, it is not the stock of knowledge *per se* (Barney, 1991) that counts, but the services the knowledge provides (Penrose, 1959), and the dynamic capabilities in the utilization of knowledge services (Teece and Pisano, 1998). Løwendahl (2005) suggests competence as an appropriate term for information-based resources which involves knowledge, skills and aptitudes.

[41] The knowledge management system is a firm-based network that enables the acquisition, storage, distribution, and retrieval of organizational knowledge and information (Adams and Lamont, 2003).

[42] The characteristics of the value creation process, productivity outcomes, and the appropriation of the profits are influenced by the ownership and control of the knowledge assets and competences. Organizational competences (capabilities and assets) owned by the firm consist of codified information, culture and routines, whereas employees hold their skills, experience-based knowledge and aptitudes.

demonstrates the inter-temporal aspect of the value-creation process stressed in Section 3.6. Accordingly, if learning is adopted as an explicit company strategy, the value of new projects with only moderate expected profitability may be leveraged to yield a higher discounted value of accumulated human and organizational capital of the firm and hence higher future productivity[43]. The value creation process depicted in Figure 21 is facilitated and constrained by the strategic domain and the existing resource base, which are 'sticky' in the short sun.

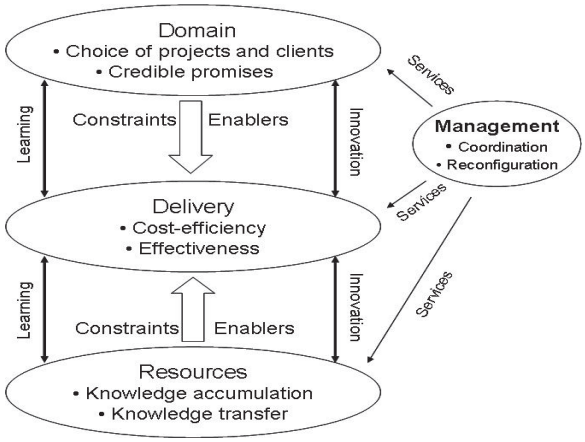

Figure 21. The value creation process in the professional services (modified from Løwendahl, 2005).

Experience improves the productivity of the delivery process, and through *learning* it also enhances the knowledge assets to match better with the requirements of the delivery processes and customer needs. In the long run the constraints are less binding and *innovations* of new technologies as well as extension of the domain towards new customer segments and projects enable more profound reconfigurations of the value creation system. Professional service firms compete simultaneously for resources in the input the market, and for clients in the output market. Through the inter-linkages firm's competitiveness in one of the markets depends on its position in the other. Given the dynamics of

[43] Given the centrality of the knowledge assets and the value creation process for the professional service firms, it is clear that the standard measures of performance, such as return on investments (ROI), are alone insufficient for the measurement of success, the value of the firm, and hence, productivity (cf. Porter, 1998). More important than the historical record on financial performance is the competitive potential embedded in the competences of the firm. Løwendahl (2005) suggests that the evaluation of the firm's competitiveness should be based on weights given to the five p:s, which are profits, processes, projects, people and persuasiveness. Whereas the first two competences are owned by the firm, the competences of people are owned by the employees, and persuasiveness, i.e. reputation, and projects by the clients.

service strategy and the premises of integrated approach to strategic management, is straightforward to show that the competitiveness of a professional service firm within the value-creating context of Løwendahl (2005) *is determined ultimately through the productivity of the firm's activities and the employment of dynamic capabilities (managerial skills) in the coordination and reconfiguration of a firm's domain, delivery and resource base.* These specifications augment the original value creation model of Løwendahl (2005).

The strategic domain encompasses the process of *selling* a credible promise. The replicability (cost-efficiency) and customization (effectiveness) of the selling process is highly dependent on the customer segment, the relational assets (reputation) and the knowledge gap between the firm and the client. The production and delivery technology and the earlier experience on similar projects determine the information available *ex ante*, which influences the outcome of the delivery contract *ex post*. In these circumstances the management of service productivity is *sequential*. Given the desired effectiveness of the services agreed on *ex ante*, the objective of the provider is to maximize efficiency of the production and delivery within the limits of the resources available, *ex post*. Again, the productivity outcome is highly contingent on the accumulated experience embedded in the firm's resources. The *second* process is service *production and delivery* conducted through the interaction with the client. In contrast with tangible processes of manufacturing, the productivity of service production and delivery is guided by the scale-efficiency and effectiveness of an intangible production function. In this process the firm is concerned with both the actual quality of what is delivered, the perceptions of quality by all relevant client firm representatives, and the efficiency of the delivery (Løwendahl, 2005). The key dimensions by which the delivery regimes of professional services differ are the degree of customization of the services – i.e. *effectiveness* – and the extent to which joint efforts by complementary resources (teams) of the firm are needed. A high degree of team production enables standardized and pre-planned coordination of activities and hence, economies drawn on specialization and scale-based production[44], i.e. *scale-efficiency*. For highly customized services, interaction with the customer and the customer's participation in the delivery process is intensive and preplanning of activities and utilization of scale-efficiency is thus limited. The features of technology applied in the service delivery processes determine the complexity of managerial coordination, which tend to increase with the customization

[44] For the discussion on the value creation in consulting companies see e.g. Hansen et al. (1999) and the dichotomy between 'reuse economics' and 'expert economics'.

(effectiveness) and decrease with the importance of routinized teamwork (scale-efficiency) among the professional employees[45].

The third key process shown in Figure 21 is *learning* from the projects and the institutionalization of the learning (Teece and Pisano, 1998) to improve service quality and scale-efficiency with the future clients (Løwendahl, 2005). The essential aspects of learning and innovation are reducible to the characteristics of the firm-specific knowledge management systems and the firm's absorptive and transformative capacities, accordingly (Adams and Lamont, 2003)[46]. The choice of the strategic domain and the associated delivery modes influence the development of an effective knowledge management and enhancement of individual and organizational competences. From the firm's perspective the key issue of knowledge management is whether and to what extent experience-based knowledge of individuals is transferable to a collective knowledge asset of the firm (Nonaka and Takeuchi, 1995). The transferability is contingent on the characteristics of the knowledge itself. Information-based knowledge can be shared, stored and transferred more easily than experience-based tacit knowledge, skills and dispositional knowledge (Penrose, 1959; Nelson and Winter, 1982). An associated challenge for knowledge transfer is the inherent conflict of interest between the employed professionals and the management - and owners (Hamilton et al., 1998). Characteristic of the knowledge-based services is the attempt by professionals to safeguard their individual knowledge asset and competitiveness, whereas the managers of the firm want to utilize the knowledge for the enhanced competitive advantage of the firm, and minimize the dependence on individual professionals[47]. Consequently, if knowledge and experience remain personal and are not shared somehow, the firm can at best expect to achieve constant return to scale with regard to the firm's growth (Teece, 2003).

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[45] In this setting the technological characteristics are predominantly endogenous, since the delivery processes and their interdependencies are influenced by the choice of the strategic domain and the knowledge assets with the associated competences. Accumulated experience and learning, however, decrease the costs of coordination for all forms of delivery technologies. In this regard the notion of path-dependency in enhancing efficiency is instructive (Løwendahl et al. 2001).

[46] According to Adams and Lamont (2003) **absorptive capacity** refers to an organization's ability to recognize the value of new, external information, assimilate the information, and then apply the learned knowledge to own internal product and service outputs. **Transformative capacity** refers to an organization's ability to gather, assimilate, synthesize and re-deploy relevant knowledge and technology previously developed internally into new technologies and processes designed to meet the organization's specific, current needs.

[47] Hence, contrary to the predictions of transaction cost economics, a firm as governance structure cannot dampen high-powered incentives completely (Williamson, 1985). If the competitive advantage is based on organizational competences, individuals professionals are dependent on that knowledge, which delimits his or hers negotiation power with respect to the firm (Hamilton et al., 1998). In the latter case where the competitive advantage is based on the professionals' knowledge the power relations are reversed. In between there exist team and managerial competences which may be embodied in competences of the firm, the employees or the owners of the firm.

In circumstances of information impactedness Teece (1998) postulates that larger organizations will have no specific advantage over small ones and the former will possibly suffer bureaucratic burdens that will sap *productivity*. This may explain why the outsourcing of the KIBS by the user companies often creates small-scale service business[48]. These considerations puts forward the importance of the dynamic capabilities in institutionalizing learning, organizational innovation and managing knowledge in the professional service firms (Viitamo, 2009). Given the internal and external business dynamics of the professional firms and the need of continuous knowledge accumulation, the value creation processes are subject to the Penrosean interplay between the excess capacity in knowledge, firm's growth and productivity (Penrose, 1959). The analogy with the value creation analyzed by Løwendahl (2005) is reflected by the emphasis given to the managerial skills in appropriating competitive advantage from the value creation process.

The value creation model in Figure 21 points out that the different domain-delivery-resource regimes of professional service firms imply different requirements and costs of coordination, accordingly. This is reflected in the search for an optimal 'fit' of the Porterian activities and the relative importance of the activity drivers as well (Porter, 1985). Given the horizontally differentiated patterns of coordination and configuration of the firm's resources and activities what ultimately counts for the competitiveness of a service firm, is the quality of services of the managerial skills (Penrose, 1959). In comparison to the Porterian framework where the strategy is exogenous and 'sticky', the managerial challenge for the professional services with endogenous strategies is distinctively higher. The endogeneity is fostered by the high flexibility of resources, which allows incremental trade-offs between scale-efficiency and effectiveness in the associated service activities.

4.2.4 Service strategies and productivity

The 'complemented' value creation analysis of the professional service firms by Løwendahl (2005) illustrates the applicability of the integrated (synthesized) approach to strategic management. Moreover, it highlights the actual service processes, which are derivable from the premises of the generic value creation approach (VCA). The subsequent task is to show that the empirical findings on the technologies and strategies of the professional service firms (Løwendahl, 2005) are consistent with

[48] The externalisation-internalisation process of KIBS is addressed in a Porterian perspective in (Gadrey and Gallouj, 1998).

the productivity model of a service industry introduced in Section 3.6.5. To make the point further Løwendahl (2005) maintains that the professional service firms are, even within specific sub-industries, highly different. There are several dimensions and sources of *technological* heterogeneity. A distinction can be made between *repetitive and ad hoc services*, which differ in the frequency of the delivery of a specific service. In contrast with the ad hoc projects, repetitive services enable planning *ex ante*. The more pre-planning can be done, the more feasible is a formal organization and routinization of the various supporting activities. A related dimension is the application of *existing solutions* and the development of *new solutions* with parallel implications for the planning *ex ante,* and the feasibility of a formal organization. Repetitive services are most often based on existing solutions whereas infrequent services as based on new solutions. This dimension corresponds to the distinction made between the *codification* strategy and the *personalization* strategy in a consulting firm's knowledge management outlined by Hansen et al. (1999). The codification strategy is based on recurrent use of codified knowledge, stored in databases without the need to contact the person who originally developed it. This opens up the possibility of achieving scale economies. The personalization strategy in contrast, provides creative, analytically rigorous advice on high-level strategic problems by channelling individual expertise (Hansen et al., 1999). In the personalization strategy tailored solutions draw on tacit information in communication and provide thus high effectiveness with the customer.

There exist specific technological dimensions that are relevant for the construction of the service taxonomy on the productivity modes[49]. *Team-based deliveries* utilize complementary skills and division of labour in large projects, whereas *individually provided* consulting services are delivered on e.g. management-for-hire basis[50]. In general the key dimensions reflect the sources of competitive advantage put forward by the *structuralist* and the *resource-based* views of strategic management. The key *resources* utilized in the value creation can be a) *individually* controlled, b) *team-controlled*, or c) *organizationally* controlled. Similarly, the strategic *focus* professional firm's competitive advantage may be built on their superior client responsiveness and the ability to a) handle customer relationship in *target clients and segment,* b) the ability to solve complex problems in the *target projects and*

[49] The taxonomy is highly consistent with the service classification in Silvestro et al. (1992).
[50] Moreover, it makes difference whether the sales process is based on personal contact with the customer, or selling a proposal in a bidding contest. Personal sales requires experience and skills in social interaction, whereas the more distant and objective bidding process requires skills in documentation and demonstration of the expertise of the firm. Finally, the billing of the professional services can be based either on actual man-hours or lump-sum payment negotiated on *ex ante* (Løwendahl, 2005).

problems, or c) the ability to deliver a given set of solutions more efficiently than competitors in *target markets and product* Løwendahl (2005). The differences in the strategic focus imply that comprehensiveness (scope) as well as the extent to which the service offering is *specified* ex ante, differs respectively. The provision of a given set of solution exhibits high specification and limited scope, while for the strategy of maintaining customer relationship, the specification is lower and comprehensiveness higher. Similarly, the different regimes of the control over the human resources imply that the service technologies differ with regard to the specialization, routinization, and the complementarity of resources required in the service production. Service production based on individually controlled resources represents *flexible* and non-specialized technology whereas the opposite is the case for organizationally controlled resources.

The two dimensions with three sub-categories total up nine clusters of service technologies shown in Figure 22, which is adapted from Løwendahl (2005). The author notes that only the clusters that locate along the diagonal (Efficient-Both-Effective) are empirically viable and the most competitive in professional service industries[51]. Client relation strategy (*the south-west corner*) emphasizes the firm's unique ability to understand and help a particular client group[52]. The primary assets of these firms are the professionals' reputation among target client groups and their strong relationships with the key customers, managed by the senior professionals. Since scale-efficiency and effectiveness of the services are managed independently by each professional, possible hazards in quality of services damage mainly the reputation and the productivity of the individual professional. As client responsiveness requires flexible tailor-making, it can be concluded that productivity relies predominantly on high *effectiveness* of the service offering[53]. Flexibility is the dominant feature of the firm's organization as well, and administration and management are primarily regarded as costly overheads. Organizational structure resembles operating adhocracy (Scott and Davis, 2003) as only few activities can be pre-planned and an explicit strategy is assigned a negligible role. From the client's perspective the status of the professional is often like an in-house counsellor hired on permanent basis.

[51] The modes in the corner cells show either insufficient adaptiveness or the lack of coordination and discipline, and they cannot be sustained in the long run (Løwendahl, 2005).
[52] This means that professional competence and the explicit scope of service offering play a secondary and supplementary role. If the firm perceives the potential for an improved service to the existing target clients by adding competences to the team, the firm is likely to hire professionals who possesses those competences, rather than let the client buy those services elsewhere.
[53] The performance of client relation -based firms is primarily measured in terms of client satisfaction and retention of clients and number of 'follow-on contracts' with a given customer (Løwendahl, 2005).

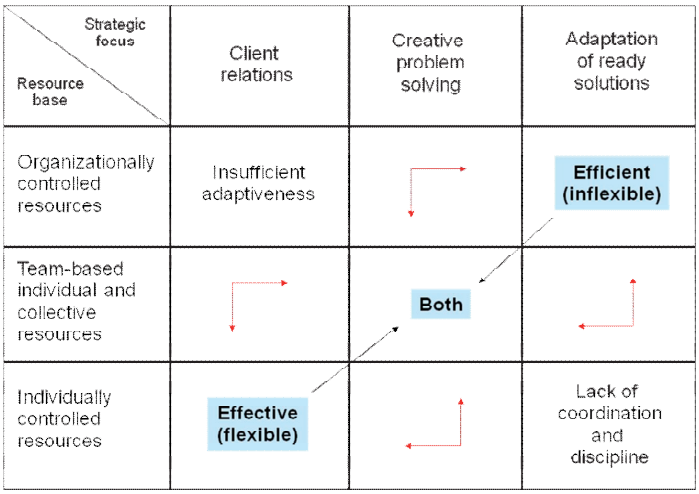

Figure 22. Resources, strategic focus and service technologies (adapted from Løwendahl, 2005).

The service firms with problem solving or creativity -based strategies (the middle cell in the diagonal) in Figure 22 represents a mixed form between the effectiveness-driven client strategies and the efficiency-driven service solution strategies. Complex service projects often include a significant technological innovation, which reflects the fact that problem solving capabilities cannot be converted into organizational capabilities. Instead, project innovations may facilitate team-controlled capabilities in which case the firm cannot completely avoid the dependence on the key professionals. The organizational structure involves both authority and respect based on professional expertise as well as flexibility and adaptation to the decisions of the key professionals. Coordination is achieved through a mutual adjustment as routinization and pre-planning is limited. In reference to Porter (1980) Løwendahl (2005) notes that problem-solving firms are virtually 'stuck in the middle' since the challenges in coordination entails unstable equilibria[54]. Within the Porterian approach the problem solving strategy represents a *focused strategy,* where problem solving is targeted to a specific market segment (Porter, 1980; Ravald and Grönroos, 1996).

Hansen et al. (1999) and Løwendahl (2005) put forward that the competitive advantages and the resulting strategic choices of the professional services are not completely exclusive. Hansen et al.

[54] Performance evaluation is most often based on new innovation and capture rate of challenging projects.

(1999) note that effective firms excelled by focusing on one of the strategies (codification and personalization) and using the other in a supporting role. They did not try to use both approaches to an equal degree. In a similar vein Løwendahl (2005) observes that it seems to be difficult to for any firm to deliver superior performance based on multiple strategies simultaneously. Consequently, it is logical to assume that in reality there is no strict dichotomy between any two regimes as shown in Figure 22. This implies that professional service firms implement the three technological modes in varying proportions such that one of the basic forms along the diagonal in Figure 22 is adopted as the dominant strategy. The conclusion is compatible with the assumption of the *continuous trade-off* between scale-efficiency and effectiveness in the value creation approach to service industry in Section 3.6.4.

With the assumption of 'continuity' and 'organizational smoothness', let us further suppose that there exist three types of service firms representing the three strategic and technological modes within a specific service industry (the relevant market). Depicted in Figure 23, each strategy-technology combination yields the same level of service productivity such that the value created in relation to the value of inputs is same for each firm. Following the reasoning of Løwendahl (2005), the solution-based firms draw their competitive advantage on scale-efficiency, which exhibits high volume and standardization with low unit cost for the services delivered. The opposite holds for the client-based firms, which draw their competitive advantage on high effectiveness. These firms deliver low volumes of tailored solutions with high unit cost[55]. In between there are firms that may be called problem-solving firms. Their competitive edge is based on intermediate volumes of production, customization and unit costs. In comparison to the client-based strategy, it can be concluded that the problem-solving firms are technologically and strategically focused on the balance between effectiveness and scale-efficiency of the service offering.

Figure 23 assumes that at the highest attainable level of service productivity there exists a continuous trade-off between alternative strategy-technology combinations within the industry, such that one regime dominates in each of the firms. The trade-off illuminates the technological constraint of producing and delivering a specific service in the most productive way. In reference to the analysis in Section 3.5 the technological constraint follows from the assumption of the diminishing marginal rate

[55] Hence, effectiveness is assumed to follow from the flexible use of the available resources as defined by (Grant, 1991). Scale-efficiency follows from the specialized use of resources and the consequent routinization.

of technical substitution (MRTS) between (scale-efficiency) standardization and (effectiveness). That is, within certain limits each firm can increase the effectiveness of the service which is associated with a rise in the unit cost, and decrease in the volume of service production (i.e. the number of clients served), and vice versa. In Figure 23 the limits are showed by the three (market) segments which are associated with the equilibrium price lines for scale-efficiency and effectiveness (the shadow prices in Figure 23). In the presence of economic waste, denoting the area beneath the surface, effectiveness and scale-efficiency can be increased up to a point, where the trade-off becomes binding.

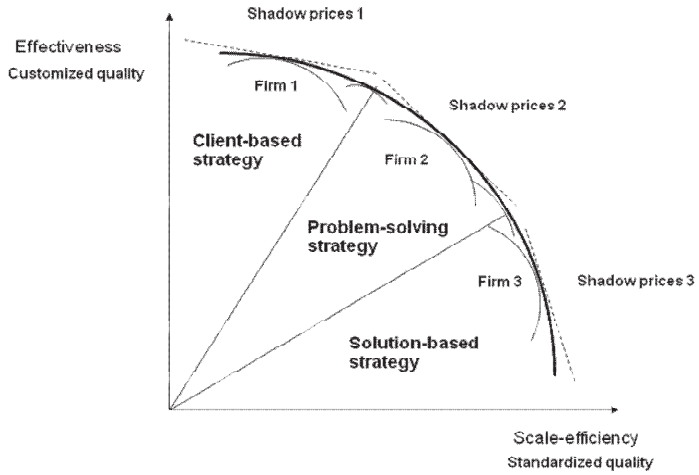

Figure 23. Three alternative technology-strategy combinations based on VCA.

The three archetypes of service firms with their intermediary forms constitute the locus of the 'first best' points of the service industry. Outward shifts of the productivity frontier imply a productivity growth within the industry. The representative firms in Figure 23 are differentiated with regard to the organizational attributes as well (Løwendahl, 2005). In reference to the organizational approach in Section 4.3, the technological regime of the client-based strategy reflects what Thomson (1967) calls *pooled interdependence* (Thompson, 1967)[56]. In that case resources are controlled and clients are

[56] In the simplest case the internal interdependence of an organization is *pooled* in a sense that each task affects the overall performance independently, and they are supported by the whole. A more complex interdependence is *sequential*, where a sequence of tasks can be carried out only after the completion of the preceding tasks. The most complex mode of interdependence is *reciprocal*, implying a situation where each task delivers output to, and receives inputs from the other tasks involved in the process (Thompson, 1967).

served by individual professionals. The organizational form of the firms with the problem-solving strategy and complementary resources in team production reflects *reciprocal interdependence* between the team members. For the firms following the solution-based strategy, service productivity rests on scale-intensive production as well as effective division of labour between the production and sales units (Løwendahl, 2005). The organizational structure of the solution-based firms is usually hierarchical so that the vertically integrated business operations build on the *sequential interdependence* between production and sales (Thompson, 1967).

It is realistic to assume that the shape and position of the productivity frontier reflects monopolistic competition (Kreps, 1990) among numerous, differentiated firms within a specific service industry. If competition is segmented, each segment is associated with an equilibrium 'shadow price line' for effectiveness and scale-efficiency. Contingent on the technological attributes, such as resource flexibility,[57] the firms with the highest productivity (the firms 1, 2 and 3 in Figure 23) may account for a segment (a range) of the industry productivity frontier, or a single point on it. This implies that the productivity frontier allows for discontinuities brought about firm-specific characteristics of the service technology and segmentation of the markets. The existence of a smooth productivity frontier assumes moreover, that firms in the three categories of service technologies show limited horizontal differentiation in their service offering. If customization is associated with substantial horizontal differentiation, the firm-specific productivity frontiers in Figure 23 become mutually incomparable and the firms represent different industries. In conclusion, based on the VCA productivity model of a service industry derived in Section 3.5.6 and the integrated approach to strategic management outlined in Section 4.2.2, the empirical findings of (Løwendahl, 2005) show that productivity of professional service industries can be analyzed in terms of the trade-off between effectiveness and scale-efficiency. Moreover, given the two key dimension by which the professional services differ in Figure 23, it can be concluded that high effectiveness of the service is associated with low specification service offering *ex ante*, an extended scope of the service offering, and low technological specialization of human resources. This implies that the capabilities in the employment of the resources are *decentralized*. In contrast, high scale-efficiency of the service production is associated with high specification of service offering *ex ante*, a limited scope of the offering and marked specialization and routinization of the

[57] The technology of an individual firm is defined in terms of the length and the curvature of the trade-off function.

human resources. This implies that the capabilities in the employment of the resources are highly *centralized*.

4.2.5 Summary

This section has examined how the main theories of strategic management contribute to the explanatory analysis on service productivity and the productivity of a service firm. *If consistent, firm's strategy approximates the key characteristics of the underlying service technology*. Given the micro-foundations of the value creation and productivity laid in the descriptive VCA, it is shown that the integrated (synthesized) approach to strategic management, which incorporates the productive trade-off between effectiveness and scale-efficiency, provides a holistic and robust framework for the analysis of corporate strategy of a service firm. The structuralist and the resource-based approaches to strategic management have substantially influenced the academic and managerial thinking on the sources of competitive advantage of a firm. Both approaches show a marked realism in the modelling of competitive behaviour of a firm. In reality firms do not strategize in a profit maximizing sense[58], but they pursue satisfactory levels of profits. This is enabled by a unique competitive advantage of a firm and control of competition and other determinants of the business environment. Firms dislike competition and may pursue anticompetitive tactics, as the prosperity and survival of a firm hangs ultimately on the profitability and consistency of the chosen strategy. Reflective of managerial realism, *the integrated approach implies that physical productivity may be a viable goal as long as it is more beneficial to the long-term profitability of the firm than the other available tactics*. This is also compatible with the argument of the descriptive value creation approach and the measurement of productive performance by the revenue-cost ratio.

The generic strategies of cost-leadership and differentiation within the structuralist framework of Porter (1980; 1985) are path-dependent. The present competitiveness as well as the strategic options companies hold is contingent on the managerial choices made in the past. As a refinement to Porter's original theory, the presumption of a continuous and concave trade-off between cost-leadership and (horizontal) differentiation in Porter (1998), supports methodologically the characterization of service productivity in the descriptive value creation approach. Within the Porterian analysis, the best-practise

[58] This assumption contrasts sharply with the text book economics.

productivity follows from the mixes of the generic strategies, which manifest the characteristics of the underlying production technology of the industry. The idea of a continuous and concave trade-off thus invalidates Porter's earlier argument that being 'stuck in the middle' between cost leadership and differentiation will be detrimental to the competitiveness of a firm. In effect, the productivity of a service firm within the structuralist framework results from the *focused* strategy, which combines the generic strategies in a specific customer segment. A further comparison shows that the trade-off between scale-efficiency and effectiveness is a more robust description of the productive strategies in a case of service firm than the trade-off between cost-leadership and differentiation in the case of manufacturing processes.

The concurrent implementation of the generic strategies in the firm's internal value chain in Porter (1985) provides a realistic and useful micro-perspective to the analysis of service productivity as well. Any firm's value chain can be decomposed into activities, which employ resources in tangible technologies and in more tangible routines. Hence, the productivity of the firm's overall technological system and routines is reducible to the productivity of the interlinked activities, the services of which depend on the underlying physical technologies and the control of the productivity drivers[59]. The answer to the Porterian question of why some firms within an industry perform better than other lies in their differing capabilities to manage uniqueness (differentiation) and cost advantages in a specific activity (Porter, 1991). Within the descriptive value creation approach (VCA) of service productivity, a *parallel* issue is the capability to manage scale-efficiency and effectiveness of the internal service activities of a firm.

Within the structuralist framework resources are treated endogenously. They exist and are accumulated, because they are supportive of the firm's activities and the exogenously chosen strategy. Hence, apart from the managerial skills and capabilities (the residual of the competitive advantage) the origins of the uniqueness and competitiveness of a firm remains unexplained. These issues are raised explicitly by the approach called the resource-based view of the firm and strategic management. Influenced by the *service-based theory of a firm and production* by Edith Penrose (1959), the resource-based view puts forward the uniqueness of a firm's assets and capabilities as the origin of the firm's competitiveness.

[59] Positive externalities through learning and technological complementarities between the activities indicate 'fit' between the activities and thus enhance the productivity of the technological system.

The resource-based view provides an objective but highly abstract explanation for the persistence of profit differentials within competitive industries. In contrast to the strategic pursuit of positioning and monopoly rents, the resource-based view presumes that market structure rather reflects economic *efficiency* fostered by entrepreneurial competition and innovation. While the structuralist approach stresses the successful employment of the *means* to attain competitive advantage (the cross-sectional perspective), the resource-based view stresses the distinctiveness of a firm's *sources* with which the advantage is created and maintained (longitudinal perspective). The debate which of the approaches is more correct is irrelevant as the uniqueness of resources and market power usually go hand in hand[60]. Analogous to the trade-off between differentiation and cost-leadership within the Porterian productivity model, there is a trade-off between *efficiency* and *flexibility* of a firm's resources identified within the resource-based approach. In this setting, the productivity (potential) of the resources is determined by the extent to which the resources are specialized in productive activities to generate a specific number and specific kinds of services. In general, high flexibility of a firm's resources enables competitive utilization of the productive trade-off between scale-efficiency and effectiveness in the provision of services.

In general, resources are profit-generating endowments, whose productivity cannot be defined in absolute terms. The performance of the services of the resources materializes only through their employment in productive action which is contingent on the technology and the managerial and organizational capabilities (skills) of the firm. The main handicap of the resource-based view is that it lacks the plausible explanation of how the unique resources are transformed into competitive performance of a firm. It is demonstrated here that the analytical shortcoming can be remedied by linking the implications of the activity-based view of Porter (1985) with the *dynamic capabilities* theory of a firm (Teece, 2009). This provides *a holistic and a plausible theory of strategic management of service firm as well.* The dynamic capabilities of a firm enable competitive utilization of the services of the internal and external assets in the productive operations of a firm's activities. Assets (resources) are the productive inputs, which need to be upgraded and re-bundled to provide the required amount and quality of services to the firm's production function. The production function is reflected by the

[60] The structuralist explanation assumes that the ability to follow pre-determined rules of the game in a consistent manner should lead to a superior outcome in the market. Any failures to do so should weaken the market position and profitability of the firm. The point made here is that the more competitive advantage originates from the uniqueness of the firm´s core assets, the more it is possible to deviate from the predetermined rules of the game, and more innovativeness is thereby allowed to attain superior performance.

composition of a firm's activities (the value chain). In a similar vein, there is a functional relationship between the dynamic capabilities and the activities of a firm. Facilitated by the managerial skills and organizational routines, the up-grade of a firm's internal activities is needed to attain high productive performance in the provision of external services. Within the '*integrated theory of strategic management'* the Porterian *drivers* of cost-leadership (scale-efficiency) and differentiation (effectiveness) are the *domains*, where the dynamic capabilities enhance the productivity of the firm's activities. The dynamic capabilities of the highest importance are the managerial *control* of the productivity drivers and the *reconfiguration* of the value chain (Porter, 1985).

As an illustration of the explanatory VCA, it has been shown that the integrated (synthesized) approach to strategic management is a robust framework for the analysis of the productivity of the professional services. Professional services are an important point of reference as their characteristics reflect the evolutionary processes of other service industries, such as universal banking. In deviation to the 'sticky strategies' of the manufacturing firms, a competitive strategy in professional services requires responsiveness and adaptation in the face of external contingencies of the business environment. The integrated approach to strategic management 'confirms' the stylized fact that the value creation in professional services is subject to the *chicken-and-egg* dilemma. A given pool of processes and human capital of the service firm favour specific market strategies, whereas the firm's existing portfolio of clients (customer segment) and market position attract professionals with specific skills and competences. It is shown that the ramifications of the adjusted value creation model of the professional services are consistent with the characterization of service productivity in Section 3.5. Given the two key dimensions by which the professional services differ - the *focus* in the domain and the pattern of the *control* of human resources - it can be concluded that high *effectiveness* in professional services is associated with 1) low specification of the service offering *ex ante*, 2) low limitations of the scope of the service offering, 3) *decentralized capabilities* as well as 4) low routinization and technological specialization of the human resources. A high *scale-efficiency* of professional services in contrast, is associated with 1) high specification of the service offering *ex ante*, 2) limited scope of the service offering, 3) *high centralization* of the capabilities, as well as 4) high routinization and complementarity of the human resources of a professional service firm[61].

[61] The issue of whether and to what extent the adapted value creation process is applicable to other services along the service-manufacturing dimension is empirical. As with the strategic importance of knowledge, service industries differ by the tangibility of the production and the service output, the extent to which human labour, skills and tacit information are

4.3 Organizational design in service productivity

Since Ashby (1968), the notion that there is no such thing as good organization in any absolute sense, has gained a wider acceptance. An organization that is good in one context or under one criterion may be bad under another. This is a central point in the contingency theory (see Section 2.2.3), which implies that organizational attributes and changes are important drivers of competitiveness of any (economic) activity. The mainstream of organization theories is - directly or indirectly - concerned with the competitiveness and productivity of organizations. Hence, given the focal question of why some organizations perform better than others (Scott and Davis, 2003), the distinction between organization theories, strategic management and economics of organization becomes blurred. It is in the interest of the management, those who design and manage organizations that the work of the organization be carried out as effectively and efficiently as possible (Scott and Davis, 2003). The search of the optimal organization is the focused agenda in transaction cost economics (Williamson, 1981; 1985). The prominence of organizational design for the issue of service productivity can be highlighted within the integrated framework of strategic management (see Section 4.2). That is, any organization consists of complementary activities and assets which provide intangible services internally to the organization, and externally to the clients which the organization is designed to serve.

In this setting, *the organization stands for a complementary resource that provides services to the productive processes of firms and non-profit organizations*. Organizations need to motivate its members in the development of smooth-functioning routines. For a service firm in particular, organization is an elementary part of the technology influencing the productive performance[62]. This

required to intervene in the processes, and the markets served. When the business logic is guided by the established rules of competition and standardized service solutions, the focus in the value creation process is more geared to the market imperatives and efficiency considerations (the structuralist approach). When the business logic is based on service customization and flexibility of resources, the process is more driven by firm-specific resources and effectiveness considerations (the resource-based view). In consonance with the Porterian productivity model the examination of service strategies indicate that in the presence of extensive horizontal differentiation the service productivity frontier becomes a *three-dimensional locus* of the industry strategies, which reflect the underlying technologies within a service industry.

[62] Scott and Davis (2003) identify three general types of indicators and dimensions of performance measurement. There exists a set of indicators related to the *outcomes*, where the focus is on the specific characteristics of materials and objects, which the organization has produced. As noted by the authors, such indicators are regarded as quintessential indicators of effectiveness. There are indicators that measure the *process*, and thus focus on the quantity or quality of activities carried out by the organization. The advocates of process measures emphasize the assessment of inputs or energy regardless of outcome, and thereby focus on efficiency. Finally, there are indicators that measure the *structure* which are approximates of the quality of the organization. The purpose of structural indicators, such as the skills level of workers, or the proportion of the faculty with doctoral degrees, is to assess the capacity of an organization for effective performance. Scott and Davis (2003) maintain that the three types of performance indicators can be ranked ordinarily with regard to their *remoteness* to

section makes sense of 'organizational productivity'. It examines how the synthetized (explanatory) value creation approach benefits from the complementary perspectives of *organization theory* and *transaction cost economics*. In the spirit of the contingency theory, *the focal question addressed here is how organizational choices of a firm's management affect the firm's productivity and how the organizational choices are affected by the productivity considerations.* This stresses the interface to strategic management as well. The marked scope and depth of the theoretical considerations in this section aims to highlight the general importance and the multidimensionality of organizational productivity. The Sections 4.3.1- 4.3.4 address the ramifications of the (general) *organization theory* for productivity, whereas the subsequent sections 4.3.5 – 4.3.8 address the main ramifications of *transaction cost economics* for the productivity of a (service) firm.

4.3.1 The systemic paradigms

Organizations are pervasive in modern societies. Organizations set constraints on the coordinated action of individuals, but at the same time they are actors on their own right. Just like individuals, organizations take actions, use resources, enter into contracts, and own property (Scott and Davis, 2003). Organization theory focuses on the structural features and operational routines of an organization and the behaviour of the organization as a collective actor. The schematic presentation of the contingency theory in Section 2.2.3 highlights the key components of all organizations. *Environments* embrace the residual elements outside the organization that influence its ability to survive and achieve its ends. Environments provide resources, opportunities, constraints, demands as well as unanticipated contingencies, to which an organization must adapt. *Strategy and goals* of an organization are the choices of what is to be delivered to whom and how. Given the strategy, and pursuance of predetermined goals, an organization has to perform tasks or the *work* based on human labour and specific technology. Moreover, all organizations are based on *formal* and *informal* structures and practices. Formal structures refer to the explicit codification of how organizations do their work and how their parts relate to each other. Informal dimension is reflective of the culture, norms and values, social networks, power and politics that guide organization's operation and routines.

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the intended outcome. In comparison with effectiveness, which is the purpose of the activity itself, the scope of the processes (efficiency) is removed from the outcome and assesses the economic use of inputs. In this regard the structures (capabilities) are even more distant to the actual outcome. Accordingly, structure measures the organizational capacity to perform the processes needed to attain the intended outcome.

Finally, *people* are the contributory participants the efforts of which are induced by pecuniary and non-pecuniary incentives. The multidimensionality of organizations allows for various definitions, which are contingent upon the contextual focus, scientific background of the analyst, and more fundamentally upon the differing assumptions made on human behaviour. Over the course of the twentieth century, the evolving perspectives discussed below, have clustered under the three *systemic paradigms* with the associated *definitions* on organizations. In this process 'Zeitgeist' has played a prominent role.

Originating from the early contributions to scientific management by Friedrich Taylor (1911) and, the research on bureaucracy by Max Weber (1947), the *rational system paradigm* (1) views organizations as collectivities, which pursuit relatively specific goals and exhibit relatively high formalized social structures (Scott and Davis, 2003). The distinctive features of a rational organization are then high *specificity of goals* and *formal structure*, which both are conducive - and prerequisites - to the rationality of organized action. Thompson (1967) defines a determinate system, which approaches *closure* in the sense that the transition from a state to another is *unique*. Closure of a system implies that variables and their relationship are fully comprehended and controlled, and there is *perfect control* over the transformation itself. Hence, for determinate system the closure may complete or incomplete provided that outside forces acting on it are predictable (Thompson, 1967). For perfectly rational systems there is an analogy with the neoclassical production function, which is by definition a closed system. There are no exogenous influences on the system, and the productive outcome is fully predictable[63]. In reality, however, perfect or technical rationality is a hypothetical optimum, which cannot be reached by any individual or organization. For the rational systems paradigm as well, rationality is a matter of degree and determined by the *extent to* which a series of actions are organized in a way that leads to predetermined goals with maximum efficiency (Scott and Davis, 2003). Accordingly, the rational systems paradigm accepts bounded rationality and the satisficing behaviour of the human economic agents (March and Simon, 1958), which leads to a distinction made between organizational (imperfect) rationality and technical (perfect) rationality. In this setting *organizations are seen as a device to economize on imperfect rationality in the reach of the highest bounded rationality of the system through a closed a system strategy*. As the analysts of the rational systems reasoning focus primarily on the *normative structures* of organizations, structural changes within an

[63] Consequently, a perfectly rational system maximizes productivity automatically.

organization are conceived as deliberately designed measures to attain the efficient realization of the goals. The goals are based on the conceptions of the desired ends (Scott and Davis, 2003)[64].

Rooted in the critique of the rational systems paradigm and the emergence of alternative explanations of organization over the course of the 19th century, competing theories on organizations stressed their unspecified goals and highly informal structure. The *natural system paradigm* (2) views organizations as collectivities whose participants pursue multiple interests, both disparate and common, and recognize the value of perpetuating the organization (Scott and Davis, 2003). The *complexity of goals* and *informality* of the natural systems illustrates the controversy with the rational system paradigm. Rather than focusing on the normative structure and of what organizations ought to do, more urgent is to look into the behaviour of the participants and what they actually do. The organization itself is a major asset and a valuable resource (Scott and Davis, 2003). To highlight the dichotomy further, rational organizations are mechanistic, based on a deliberate design and calculation, whereas natural systems evolve, grow through evolutionary processes, and show spontaneous behaviour[65]. Lawrence and Lorsch (1967) assert that much of the rational-natural dichotomy is reducible to the differing backgrounds and interests of the leading analysts. The practically oriented analysts of the rational school having often background in business management were interested in highly structured organizations such as industrial firms, whereas the analysts of the natural systems with the university background, tended to focus on service firms, professional organizations, schools and hospitals, as well as organizations such as YMCA[66].

More fundamental differences lay in the assumptions on the *human nature*, the interests that guide and the factors that motivate the participants' behaviour in organizations. Central to the natural systems' thinking is the socially and motivationally complex behaviour in its entirety, while the rationalists consider only selected aspects of human behaviour to be important for achieving the goals of the

[64] Along with the organizations, which show high *goal specificity* and *formalisation,* there exists a diversity of other organizational structures, or social collectivities (Scott and Davis, 2003).

[65] Strikingly, the historical trajectory of economics is characterized by an analogous juxtaposition. The premises of the classical and the subsequent neoclassical economics align with the 'mechanics' of the rational system view, whereas institutional economics and the evolutionary school in particular, challenges the perfect rationality and offer a more realistic theory with the premises close to the natural system approach.

[66] YMCA comes from the abbreviation of Young Men's Christian Association. For this study this notion is of central importance, and it supports the general arguments on the duality between manufacturing and services as well. Up to the 1980s manufacturing was not directly contrasted with the private business services, but more with the services provided by the public sector such as education and health care.

organization. The motivational aspects are best highlighted by the human *relations school*, one of the dominant strands within the natural systems approach. McGregor (1960) postulates that contrary to rationalist claim most individuals do not inherently dislike work. Thus external control and threat of punishment are not the only means for bringing about effort towards organizational objectives but the most significant rewards are those associated with satisfaction of ego and self-actualization needs. The underlying argument raised by the human relations school is that given the logic of the natural systems, which characterizes all productive organizations with human capital and labour, there exits a *strong and positive correlation between workers' satisfaction and labour productivity*. High productivity of individual workers in turn enhances the overall labour productivity of teams and larger working collectivities. Employee satisfaction can be enhanced e.g. through supervisory practises and leadership style, job enlargement and rotation as well as worker participation in decision making within the organization (Scott and Davis, 2003).

Common to the rational and natural systems approaches is that they view organizations as *closed* systems isolated from their wider environments and co-participants (Scott and Davis, 2003). Reflective of the global integration of markets and nation-states, which began to accelerate in the 1960´s, there was a tendency to see organizations from a more open systems' perspective. Instead of being sealed off from their environments, organizations are open, dependent on the flows of personnel, resources, and information from outside. Within the *open systems paradigm* (3), organizations are congeries of interdependent flows and activities linking shifting coalitions of participants embedded in wider material-resource and institutional environments (Scott and Davis, 2003)[67]. Tightly or loosely connected, activities must be continuously motivated, produced and reproduced, if the organization is to persist. Organizations are based on interdependencies between their constituent parts. Individuals and subgroups form and leave coalitions, which makes coordination complex and the determination of the boundaries of the organization *arbitrary, and most often a secondary issue*. More generally, open systems represent a systemic mode capable of *self-maintenance* based on throughput of resources from their environment (Boulding, 1956). With the simple systems such as living cells, there are more complex social systems, such as firms and other human organizations. These systems are more sensitive to the environment, more loosely coupled and more dependent of information flows and, more

[67] Influenced by the general systems theory and operation research, the open system paradigm is less concerned with the degree of formality of the structures but views organizations as systems of interdependent activities.

able to grow and change (Scott and Davis, 2003)[68]. For the advocates of the open systems' approach the environment is the principal source of a system's maintenance and the source of the order itself. At the same time environment is the main source of contingencies and uncertainties to which the organization must adapt. Thompson (1967) notes we can, if we wish, assume that the system is determinate by nature, but that it is our incomplete understanding (bounded rationality), which forces us to expect surprises or the intrusion of uncertainty. In a more general setting, the open systems view can be highlighted by the characteristics, which link the natural systems paradigm and the rational systems paradigm. This is presented in Figure 24.

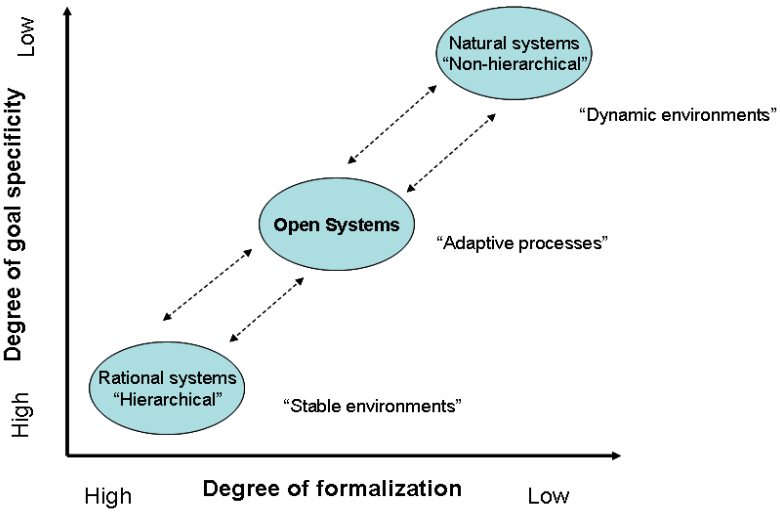

Figure 24. Summary of the three systemic paradigms in organization research.

The discussion on the 'triplets' of the systemic paradigms (rational-open-natural) leads back to the contingency argument by Lawrence and Lorsch (1967), implying that organizations capable of matching their internal characteristics with the external demands (contingencies) of the business environment will gain competitive advantage through effective adaptation. In particular, environments characterized by high uncertainty, e.g. rapid technological change and shifts in market demand, place

[68] More generally, the existing systems (organizations) can be arranged in clusters based on the degree of complexity and associated characteristics. Open systems theorists tend to stress that systems are hierarchies of such clusters, as systems are composed of subsystems and contained within larger systems.

higher requirements for organizational innovations and adaptation than more stable environments[69]. In this regard, the contingency theory can be utilized to mitigate the controversy between the rational and the natural systems paradigms, which represent the opposite ends along the two continua of *formalization* and *goal specificity* of the organization.

The presentation in Figure 24 implies that in (short term) equilibria, organizational forms are mutually exclusive, as the characteristics of the environments differ, and thus determine the optimal form of the organization. The more homogenous and more stable the environment is, the more prevalent will be a formalized and hierarchical organization. Conversely, the more dynamic and uncertain the task environment is, the more appropriate will be a less formal and more organic form of organization[70]. Within the circumstances of dynamic (monopolistic) competition, for instance, environmental attributes will determine which modes of organizations will dominate at each point of time. This manifests the Darwinian evolution in competition which is guided by 'the survival of the fittest'[71]. These considerations suggest that the technologies and organizational structures are strongly inter-linked and critical for any performance evaluation. While the theoretical literature on organizations does not explicitly address the characteristics of productivity, most of the organizational research is implicitly concerned with productivity of organized activity. *It will be further demonstrated in the subsequent sections that organizational approach enables a comprehensive analysis on service productivity as well*. Through the seminal work of Thompson (1967) the organizational approach extends the focus to policy implications of the business management, which are shortly discussed below.

4.3.2 Productivity as rationality

Thompson (1967) concludes that the openness of organizations follows from the parallel conduct of the three regimes (rational-natural-open) in the different domains of control. The *technical* domain (1) of

[69] This is the underlying logic behind the dynamic capabilities theory suggested by Teece et al. (1997), Teece and Pisano (1998) and Teece (2009) as well. The argument rests on the assumption that organizational design and adaptation is one of the dynamic capabilities held by a firm. Consequently, a 'superior fit' may provide competitive edge even if the firm or the industry is not highly advanced technologically.

[70] As implied by the contingency theory, there exists no one best organizational response in an evolutionary open systems world.

[71] In the spirit of the model outlined in Figure 24 Thompson (1967) maintains that the natural and rational approaches co-exist in the strategies of real organizations such as firms. We will conceive of complex organizations as open systems, hence indeterminate and faced with uncertainty, but at the same time as subject to criteria of rationality and hence needing determinateness and certainty (ibid.).

an organization carries on the production function, where the inputs are transformed to the outputs. Based on the technological core of the organization, which follows the principles of a closed, rational system strategy, the production activity pursues the highest possible technical efficiency. In the *institutional* domain (2), the control of the organization is related to its wider environment, the design of strategy, the establishment of boundaries, and the protection of its legitimacy (cf. Scott and Davis, 2003)[72]. In the institutional domain the organization is most exposed to the influences of the environment, which calls for the open systems strategy. The technical and institutional domains are linked with the *managerial* domain (3), which is responsible for the control of the production system, the procurement of inputs, disposal of the outputs, and allocation of personnel. As the coordination of the technical core and the related activities are located mainly within the boundaries of the firm, the managerial control is best suited to the natural systems paradigm. It is straightforward to conclude that a deliberate implementation of the systemic regimes in the different domains of control is the precondition for the productivity growth of an organization.

The analysis of organizational performance by Thompson (1967) builds on *rationality*, which conceptually coincides with the productivity of resources (see Section 3.3). At the technical level of control, a viable performance concept is thereby *technical rationality* reflective of the desired outcomes and beliefs about the cause-effect relationship. Hence, given the prevailing knowledge on the technological options, a set of activities is technologically rational to the extent they are capable of producing the desired outcome with the available resources. Technical rationality can be assessed by two criteria, *instrumental* and *economic*[73]. For an instrumentally perfect technology, the actual outcome of production is fully consistent with the desired outcome, which in terms of productivity reflects the degree of *effectiveness*. Economic rationality is a matter of degree and is attained to the extent the desired outcome is derivable from the least cost expenditure of resources. Clearly, economic rationality approximates economics efficiency even though in Thompson's reasoning there is no absolute standard

[72] In big firms these activities are assigned to the board of directors as well as the departments of public relations and legal affairs.

[73] According to Thompson (1967) it is necessary to distinguish between the instrumental (effectiveness) and economic (efficiency) questions because present literature about organizations gives considerable attention to the economic dimension of technology but hides the importance of the instrumental question, which in fact takes priority.

for perfect economic rationality[74]. The overall rationality (productivity) of the technology is determined through the co-effect of instrumental and economic rationality[75].

As noted by Thompson (1967) perfect technical rationality is a theoretical abstraction. This follows from the stylized fact that all organizations are inherently open and subject to external contingencies. Technologies differ, however, and their specific characteristics determine *how distant they are from the perfect rationality*. Thompson (1967) identifies three broad classes of technologies in modern societies, which bear on the strategies and productivity of organizations. The *long-linked technology* (1) involves a serial interdependence in the sense that act Z can be performed only after successful completion of act Y, which in turn rests on act X, and so on. Typical examples are vertically linked value chains of industrial mass-production. A long-linked production mode is the closest approximate to perfect rationality (productivity), as it enables predictable and standard processes at constant rate of production. The idea of the *mediating* technology (2) is to link customers who are or wish to be interdependent. Thompson (1967) notes that commercial banks, for instance, link depositors to borrowers and insurance firms link customers who want to pool common risks[76]. The complexity of mediating technology follows from the requirement of standardization of the geographically dispersed service operations, and aggregate compatibility with the needs of multiple clients that differ in time and space. As customers with their specific needs are involved in the production of the services, the opportunities for standardization and control of the processes are inevitably limited. Hence, in comparison to the long-linked technology, the mediating technology is further away from the closed system of logic and perfect rationality[77]. The third technological category is called *intensive* technology (3), which employs a variety of techniques in order to achieve a change in a specific object (Thompson, 1967). The selection, combination and order of the applied techniques are influenced by the feedback from the object, which can be human or non-human (property). The intensive technology is a customized technology in the sense that it rests on the appropriate combination of selected capacities

[74] Obviously, this is because the evaluation of economic rationality is contingent upon to the state of available knowledge at the time of the evaluation.
[75] In deviation to the service management theories (Grönroos and Ojasalo, 2004) and the Porterian productivity model (Porter, 1998) Thompson does not indicate whether there exists a trade-off between instrumental and economic rationality.
[76] In this case mediating technology is associated with networked technology. Accordingly, banking and insurance belong to a group of industries called the network services (Salter and Tether, 2006), which draw on physical networks as well as on elaborate information networks. The productivity of networks is based on scale economies derivable from the universal presence and delivery of the financial services.
[77] Owing to the characteristics of mediating technology the analysis of Thompson also demonstrates that banking is located between traditional manufacturing and services.

required by the individual case or project. Owing to intensive customer participation in the production and delivery as well as the obscurity of the technology itself, intensive technologies are distinctively based on open system logic. This definition of Thompson is equivalent to the classical service technology defined by Hill (1977) and Gadrey (2002a)[78].

4.3.3 The patterns of coordinating activities

Given the distinction between technical, managerial and institutional levels of control, the subsequent issue is how the *technical-managerial* dimension, and the internal structuring of activities by a firm, including the production technology, matter for productivity. The issue can be demonstrated by the organizational design needed to make 'a synthetic organization' more efficient. Synthetic organizations are, by definition *ad hoc* collectivities which emerge, for instance, to overcome the effects of natural disasters in communities, and dissolve rather rapidly after the work has been done. Synthetic organizations develop structures *only* to the point, where the coordinated action is instrumentally rational, without planning or prior designation of authority (Thompson, 1967). Synthetic organizations are characteristic of many service activities, which require a high degree of customization and team-based interaction with the clients (Løwendahl et al., 2001). Obviously, variants of intensive technology are implemented by synthetic organizations. While synthetic organizations are instrumentally rational, and may approach the perfect instrumental rationality (effectiveness), their economic rationality (efficiency) is often low. The reason is that a synthetic organization must simultaneously establish its structure and carry on operations subject to high external uncertainty[79]. The main lesson derivable from the case of synthetic organizations is that the structure is a fundamental vehicle by which organizations achieve the 'maximum' (the highest possible) bounded rationality (Simon, 1957). A specific structure provides the participants of an organization with boundaries of responsibilities and control of resources, as well as coordination of action of the interdependent elements, all conducive to economic rationality (efficiency).

[78] In particular, the service transformation process discussed in Gadrey (2002a) parallels with the intensive technology.
[79] Conversely, should the management of an organization anticipate the nature of the problem and possess the required resources it would achieve the highest possible economic efficiency given the level of desired effectiveness. Such an organization represents the opposite of a synthetic organization.

To attain a high economic rationality, the structure of an organization of a firm has to be responsive to internal interdependencies between the technology-based activities (tasks). This assumes a specific ways of coordination by the responsible management (Thompson, 1967). In the simplest case the internal interdependence is *pooled* in a sense that each task affects the overall performance independently, and they are often supported by the whole. A more complex form of interdependence is *sequential*, where a sequence of tasks can be carried out only after the completion of the preceding tasks. The most complex mode of interdependence is *reciprocal*, where each task delivers output to, and receives inputs from the other tasks involved in the process. With the increasing complexity from pooled to reciprocal interdependence comes also a higher burden of communication, and contingencies associated with higher requirements, and costs of coordination[80]. For the pooled interdependence the highest economic efficiency is attained through coordination based on *standardization.* This involves the establishment of rules and routines to constrain independent action. The sequential interdependence is optimally managed by a *plan*, which governs the action with a lower stability and routinization than the coordination of the pooled interdependency. The most challenging is the coordination of reciprocal interdependence, which necessitates *mutual adjustment* of the tasks involved (Thompson, 1967).

To conclude, economic rationality (efficiency) of the organizational technology assumes the identification of the type of the interdependencies between the performed tasks, and the assignment of an appropriate mode of coordination, respectively. Moreover, as coordination is costly, economic efficiency can be further enhanced by grouping (clustering) of the tasks in a cost minimizing manner. The efficient structure proposed by Thompson (1967) is a hierarchy of activities arranged by the complexity of the interdependence and coordination. That is, all reciprocally interdependent tasks should be clustered first, then the sequentially interdependent tasks, and finally the tasks of pooled interdependence. Economic efficiency necessitates further that the size of the sub-clusters for the first two modes of interdependencies should be as small as possible, while the opposite holds for the standardized coordination. Reflective of the administrative structures of business corporations these principles imply that with the separation of organizational units comes the need to coordinate them, termed usually as integration. The balancing between the benefits of separation and integration are highlighted by the divisional hierarchy of a bank in Section 5.3.

[80] These costs are equivalent to transaction costs of internal organization analyzed in transaction cost economics (Williamson, 1975; 1985).

4.3.4 Organizational rationality and growth

While inherently objective, the theoretical research on organizations shows a number of policy-oriented linkages with strategic management as well. For instance, Porter (1985) notes an organizational structure that corresponds to the value chain will improve a firm's ability to create and sustain competitive advantage. As *technical rationality* (productivity) presumes a closed systems approach, Thompson (1967) argues that the management of an organization will (tend to) *seal off* the technical level protecting it from the external uncertainties as much as possible. On the other hand, the effective conduct the sealing-off strategy at the institutional level with respect to external contingencies necessitates that the control at the managerial level implements the open systems logic. To the extent that environmental fluctuations can be anticipated, contingencies can be transformed into constraints, and thereby a closed systems logic can be applied (Thompson, 1967)[81]. Accordingly, the ultimate objective of *organizational rationality* (productivity) is to bring contingencies, constraints, and other variables under the control of the management. While there exist various ways of sealing off the technical core, such as buffering with warehouses, which is to improve the efficiency of the core technology, this takes place at the expense of higher costs of the organization.

The openness and the forms of the dependence of organizations on their environment are influenced by the *domain* (Løwendahl, 2005), which each organization has to establish at the institutional level (Scott and Davis, 2003). The domain is defined in terms of technology (how), population served (who) and services rendered (what), which together determine the resources needed. Seen as the residual of the organization itself, the environment consists of customers, suppliers, competitors and government. This demonstrates a distinct analogy with the environmental (structuralist) approach to strategic management (Porter, 1980; 1985) discussed in Section 4.2. Through the strategic interaction in the market, the control of the environmental dependencies is reducible to the capability of an organization to exert power[82] over each element of the task environment[83]. Given the domain of the organization,

[81] The basic elements of *organizational rationality* are input activities, technological activities (see above), and output activities, which are linked to one another. The input acquired must be within the scope of the technology, and it must be within the capacity of the organization to dispose of the production.
[82] Note that *power* within the context here is a broader concept than monopoly exercised within the structural framework of strategic management. Within the organizational theory, power is defined with respect to the "capacity to satisfy the needs of the environment and to the extent that the organization monopolizes that capacity" (Thompson, 1967, p. 31).
[83] Consistent with the *five forces model* of Porter (1980; 1985) power may be manifested by the possession of negotiation power relative to suppliers and clients, or the scale advantage over the competitors. Alternatively, lacking the sufficient

technology and environment determine the major constraints and contingencies faced by the organization, and hence the ways of managing organizational rationality. With the market-based tactics in relation to the other organizations and firms, the management can take actions at the institutional level through the *organizational expansion* as well. Consequently, organizational rationality implies that managers seek to place the boundaries of the organization around those activities which, if left to the task environment, would be crucial contingencies (Thompson, 1967)[84]. This implies that organizations tend to expand their boundaries toward activities, which the operation of the technological core is most dependent on, and toward activities, which are subject to high uncertainty. Interestingly, this corresponds to one of the main propositions of transaction cost economics, as suggested e.g. by Williamson (1985) and Masten (1982). Moreover, since technology itself is also a significant source of contingencies, the form of organizational design is contingent upon the technology type, i.e. long-linked, mediating and intensive technology. The characteristics of the core technologies determine in turn, which of the dimensions of the domain (what, how, to whom) are affected through the expansion of the organization.

Given the objectives of organizational rationality, organizations which employ long-linked technologies, seek to expand their domains through *vertical integration* (Thompson, 1967). This way the organization seeks control over contingencies by expanding towards the downstream activities, such as distribution and marketing or, upstream, towards intermediate products and inputs (Porter, 1985; Williamson, 1985; 1975; Viitamo, 1996). In the case of vertical integration, the expansion is focused on the technological dimension of the domain (*how*)[85]. In a similar vein, organizations that employ mediating technologies seek to expand their domains by increasing the number of population served (*whom*). With the terminology of industrial economics this equals to *horizontal integration,* within the current spatial market or into other spatial markets with new investments in new locations.

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market power, organizations (firms) may seek to minimize the power of the task environment by maintaining alternatives. A primary strategy here is to create prestige, brand loyalty, and hence differentiation. Differentiation is one of the competitive strategies to attain defendable position in the market (Porter, 1980; 1985). Moreover, organizations may acquire power through cooperative or contract-based strategies relative to the customers, supplier and competitors. The effective attainment of power under cooperative arrangements rests on the exchange of commitments, which reduces potential uncertainty for both parties (Thompson, 1967).

[84] Purely on technological grounds *ceteris paribus*, these activities can be performed by the environment as well without damage on the organization.

[85] It is well-known that the high degree of vertical integration in capital-intensive manufacturing, such as paper industry (Viitamo, 1996), is based on this line of argumentation.

Accordingly, scale-effects associated with geographic expansion[86] bring an improved protection against the business risks of one location. When the organization employs intensive technology, the associated and rational growth strategy is to *incorporate the object worked on.* In particular, when the intensive application of collected, specialized capacities represent a change in rather than merely a service to the client, the activity of the client himself becomes an important contingency for the organization. Therefore, organizations operating intensively on the client seek to place their boundaries around the client (Thompson, 1967). For the domain this implies an increase in the types of services rendered (*what*). In industrial economics there is an analogy with economies of scope and *diversification* into related fields of production and business (Viitamo, 1996). While the above proposition on the intensive technology by Thomson (1967) is originally exemplified by health care services, it is directly applicable to number of business services as well (Gadrey, 2002a; Grönroos and Ojasalo, 2004). Incorporating the client is thus equivalent to the strategy of close cooperation with the client based on reciprocal interdependence with low organizational boundaries (Løwendahl et al., 2001).

Through the organizational design, the core technology is sealed off as much as possible to *mimic* the closed system, or the neoclassical production function. A closed production system enables the minimum average costs instantly, and the technology is associated with predetermined requirements on effectiveness. While such a static view conforms to the pursuit of some ideal state, more dynamic interpretations can be made as well. Namely, sealing off is unavoidably necessary also when the organization implements an innovative strategy to improve the productivity of the technical core. For instance, in a spirit of Penrose (1959) Thompson (1967) asserts that incorporation of the sources of contingencies may lead to capacity in excess of what is called the 'original' mission of the organization. If the organization employs some combination of the three generic technologies (long linked, mediating, intensive), which most often is the case, there may be unlimited prospects for the growth of productivity through the utilization of excess capacity[87]. On balance, organizations with multiple technologies seek to grow until the least-reducible component is approximately fully

[86] Edith Penrose (1959) for instance, equals a geographic expansion of a firm to diversification in a case where the spatial markets are differentiated by the demand, and specific marketing programmes are thereby needed.

[87] In consonance with the Penrosean reasoning excess capacity arises as capacities of different activities are not continuously divisible (Thompson, 1967; Penrose, 1959). The productivity growth is then induced by the need to balance between the components of the technological core. The existence of economies of scale provides a complementary driver for growth.

occupied. Distinctively, such a proposition corresponds to the principle of the *least common multiple* by Penrose (1959). Thompson (1967) is suspicious, however, whether such a balance (equilibrium) is attainable and sustainable in the long run. For instance, technical progress will result in an increased capacity, which is in excess of what the task environment – e.g. market demand – supports. Therefore, organizations tend to enlarge their domains by diversification, which is an effective strategy to utilize excess capacity for a higher productivity of the resources.

4.3.5 Transactional efficiency

The main contribution of *transaction cost economics* to organizational productivity - addressed here and in the subsequent sections - are the managerial implications of how inter-firm transactions (vertical and lateral integration), and intra-firm activities (structuring) are organized in a cost-efficient manner. Central milestones in assessing systematically the costs of organizing production and business activities have been the classical papers of Ronald Coase (1937) and Alchian and Demsetzt (1972)[88]. While the neoclassical theory of a firm and strategic management are capable of identifying the technological and strategic circumstances, where the integration and growth of a firm are profitable and bring along market power, they tend to overlook the costs of coordination, which influence the modes of organization and control of the productive assets and activities. These costs are defined generally as transaction costs (Viitamo, 1996; Teece, 1986a). It is contended here that a 'comprehensive' approach to productivity analysis incorporates all the costs and productive resources involved in the production of goods and services. In this setting the costs of organizations and contracting are inescapable in assessing the overall efficiency and effectiveness of an organization. In general, the alternative organizational (contractual) modes for the transactions of goods and services locate along the continuum between markets and hierarchies (Williamson, 1975, 1985).

The classical works of Alfred Chandler demonstrate that multinational corporations in the 19th and 20th centuries pursued cost reduction and efficient use of resources through the utilization of economies of

[88] In contrast with the make-or-buy situation addressed by Coase, Alchian and Demsetz (1972) discuss the horizontal interdependence in team-based production. The individual owners of productive inputs (labour) have an incentive to collaborate when their marginal productivities are enhanced by the efforts of the other team members. In this regard assets are technologically complementary and specific to the team itself. To maximize the productivity of the team, the monitor should be made a residual claimant for the profit net of the monitoring costs. Necessary conditions for the existence of what Alchian and Demsetz (1972) call a *classical firm* are then 1) synergistic team production exposed to opportunistic shirking by a team member and 2) the possibility to estimate marginal productivities by observing and specifying input behaviour.

scale and scope in production and distribution, as well as through the reduction of the costs of transactions Chandler (1967, 1990). According to Chandler (1990) the costs of transactions are reduced by more efficient exchange of goods and services *between* units, whereas the economies of scale and scope are closely tied to a more efficient use of (production) facilities and skills *within* such units. Chandler's observations indicate that transaction costs exert profound influence on the overall cost efficiency of any productive technologies. Shifting the perspective from costs to performance, Chandler asserts that efficient coordination of throughput does not occur automatically. It demands constant attention of the managerial team or hierarchy. The *potential* economies of scale and scope measured by rated capacity are the physical characteristics of production technology. The *actual* economies of scale and scope are organizational, as they depend on knowledge, skill, experience, and teamwork, i.e. on the organizational capabilities essential to exploit the potential of technological processes (Chandler, 1990). Organizational productivity and capabilities are a function of the human capabilities and assets as well as the alignment of incentives to release the services of human assets at the individual level. As noted by Demsetzt (1993), productivity derives in part from transaction and monitoring cost considerations, but it also depends on other conditions that underlie the acquisition and use of knowledge[89]. In conclusion, whereas *strategizing* in the Porterian sense and *transaction cost economizing* in the Williamsonian sense tend to be inseparable means of business policies, the above reasoning also provides repercussions to the resource-based view of strategic management and the dynamic capabilities theory of a firm by Teece and Pisano (1998) and Teece (2009).

The mainstream of the transaction cost analysis (Williamson, 1985; Chandler, 1990) follows the principles of the *contingency theory* (Thompson, 1967). According to Granovetter (1998) Chandler and Williamson predict the balance between federations of firms and single amalgamated units which derives from the need to adapt to variations in technology, consumer demand and market structure. This manifests a deliberate pursuit of 'transactional efficiency'. At the operative level transaction cost economics urges managers and firms to organize economic activity so as to economize on bounded rationality while simultaneously safeguarding the transaction against hazards of opportunism

[89] Another reason why transactional efficiency matters for productivity analysis, is that transaction cost analysis is capable of linking intra- and inter-organizational efficiencies to a broader analytical framework, which examines the efficiency outcomes of networks, clusters and industrial sectors from the organizational contingency perspective. A persistent challenge in this regard is to distinguish between the actual production costs, transaction costs of markets, and the managerial costs of internal governance (Demsetz, 1993). Accordingly, the methodological progress of transaction cost economics has not been achieved by the development of the techniques for measuring transaction costs directly but by the development of operationalizing hypotheses to suggest where transaction difficulties are likely to be severe (Winter, 1993).

(Williamson, 1993). In the light of the generic organization theory by Thompson (1967), opportunism represents an added contingency, which influences the choice of the governance mode for a transaction. The *behavioural principle* of transaction cost economics implies balancing between the transaction costs entailed in the external uncertainty of environment (managing bounded rationality), and the transaction costs entailed in the internal uncertainty of the contractual relationship (managing opportunism)[90].

The *principle of organizational contingency* on the other hand, urges business managers to align transactions (which differ in their attributes) with governance structures (the costs and competencies of which differ) in a discriminating (mainly transaction cost economizing) way (Williamson, 1993). This involves the assessment of the *frequency*, *uncertainty* and *asset-specificity* associated with the specific transactions and the identification and outline of the alternative governance structures, i.e. a hierarchical firm, markets and the contractual hybrid modes, which the transactions might feasibly be assigned to[91]. For the organizational contingency, four domains of strategic choices by a firm are particularly relevant for the productivity analysis. They are *vertical control and integration, diversification, innovation* and *corporate structuring*. Each domain is examined in some detail below.

4.3.6 Illustration via the main case of vertical control

The main case in organizing a service transaction is the issue of *make-or-buy*, i.e. vertical control and integration between the user of the services of the underlying asset and the producer-owner of the asset. In the choice of the organizational form, the trade-offs associated with the markets and hierarchies need to be identified. External contracting in markets is associated with high-powered incentives[92], which is supportive of autonomous adaptation to the environmental contingencies. Respectively, low-powered incentives associated with the hierarchy are compatible to the cooperative adaptation (Williamson, 1998). On aggregate, the removal of a transaction out from the market and its placement under a

[90] As Williamson (1981) notes, this is not inconsistent with the imperative to 'maximize profits' but it focuses the attention somewhat differently.

[91] For the market-mediated transactions governed by explicit contracts this implies a trade-off between effectiveness and flexibility, which determines the horizontal coverage (scope) of the contract. Another trade-off exists between the opportunity costs of being tied in an inflexible long-term contract, and the cost of negotiating a series of short term contracts in the condition of bilateral dependency. The latter trade-off determines the vertical (temporal) span of the contract (Masten, 1982).

[92] High-powered incentives guide entrepreneurial (private) profit-seeking behaviour, while low-powered incentives guide the behaviour of hired managers and employees.

unified ownership and control leads to marked changes in *the* o*wnership of the asset, the incentives of the parties, and the governance structures of the transaction* (Williamson, 1985). In the presence of well functioning property rights regime, the analysis of vertical control assumes that the relative efficiency of the alternative governance structures is determined by the costs of producing and transacting the services of an intermediate input. Whilst the *transaction cost advantage* of markets rests on the high-powered incentives of the buyers and the sellers, which elicit autonomous adaptation to any unanticipated contingency (Williamson, 1991), the advantage tends to diminish, however, as the *assets of the producer become increasingly specific to the contractual relationships*[93]. This may occur e.g. through a gradual process of learning-by-doing, or once-for-all investments in transaction-specific assets such as technology, human capital or proximate locations (Masten, 1986). In both cases competitive bidding among the potential sellers and buyers prior to the initial contract transforms[94] into a more established business relationships *ex post*, where the identity of the seller and the buyer matters (Williamson, 1981). *This is also the implicit assumption, which many of the socio-economic analyses of service productivity is founded on* (cf. Grönroos and Ojasalo, 2004; Parasuraman, 2002).

Transaction cost theories posits that in the bilateral exchange, where highly specific assets cannot be redeployed in other uses without sacrificing their productive value (Williamson, 1981), the *ex ante* and *ex post* transaction costs tend to rise. The seller and the buyer have to employ resources to safeguard against opportunism in the appropriation *of the joint-profits,* which the assets tend to generate[95]. Through the growing assets-specificity (Williamson, 1985) the managers of the respective firms have stronger incentives to replace the costly market governance by more complex forms of contracting, and ultimately by a vertically integrated firm[96]. In this situation, the relative advantage of markets may diminish through the lost scale effects as well. Markets can aggregate 'homogeneous' demands and

[93] In Williamson (1985) the growth of the other determinants of a transaction are *frequency* and *uncertainty*. Their growth favours non-market coordination in the presence specific assets. Given the constant technology and unit costs of producing the input, the choice of the organizational mode can be expressed as a function of the degree of asset-specificity indicated by the co-efficient k. For instance, in the absence of asset-specificity (k = 0), the transaction of an intermediate service input between the producer-seller and the buyer-user is most economically coordinated by the markets.

[94] Williamson (1985; 1993) calls this a *fundamental transformation.*

[95] "Absent opportunism the rationale for coordinating an exchange within a hierarchy would be substantially reduced" (Williamson, 1985, p. 31).

[96] In a more formal presentation Masten (1982; 1884) shows that the feasible time span of a long-term contract with regard to k depends *inter alia* on the durability of the transaction-specific investment, the size of the appropriable profits generated by the joint production, and external uncertainty. All these factors tend to make market contracting more costly. Uncertainty and the complexity of the product and service transacted may raise the opportunity costs of being locked into an inflexible contract. This tends to increase the range of k, where markets and hierarchy are more productive forms of governance than a long-term contract.

hence utilize economies of scale and scope more extensive than an integrated firm (hierarchy), when it uses the assets for the internal production only. The high emphasis put on uncertainty, bounded rationality and opportunism as the key drivers of integration needs some qualifications[97]. *First*, whereas the socioeconomic theories naively disregards the possibility of the counterproductive effects of contractual hazards and takes a co-operative behaviour in the producer-user relations as a given, the case of professional services for instance, points out (Teece, 2003) that opportunism and high powered incentives of individual employees may pose serious problems in the hierarchical modes of governance as well. This follows from the stylized fact that much of the assets resides in the key individuals and are usually transportable beyond the boundaries of the firm. *Second*, the central issue whether the managers of the producing and using firms are 'rational and capable enough' to achieve the optimal organizational 'fit' remains indeterminate in the traditional transaction cost analysis. In reality, bounded rationality of the managers constrains objective cost assessment, which explains the diversity of organizational arrangements and productive performance e.g. in the service industries. *Third*, the dynamic capabilities of a firm play a central role in matching the services of the transaction-specific assets with the fittest mode of organization. Ultimately, the primary purpose of the organization is to secure a smooth and low cost running of the activities of the firm, whose productivity the underlying asset is expected to enhance.

It is suggested here that a comparative analysis, where asset-specificity enters as a costly and productivity-enhancing input would improve the robustness and the applicability of transaction cost economics in the field of service productivity[98]. Moreover, *the productivity implications of asset-specificity show an analogy to the productivity trade-off between scale-efficiency and effectiveness addressed in the descriptive value creation approach (VCA).* Obviously, assets do not become specific exogenously, or by chance, but because specific assets are profitable and contribute to the productivity

[97] See e.g. Viitamo (2008b).

[98] Within a related neoclassical profit maximizing framework Riordan and Williamson (1985) show that when increased asset-specificity enhances productivity in vertical joint production, either through lowered unit costs of production or increased revenues generated by higher quality of the final product or a service, unified ownership (integration) will produce more output with a higher degree of asset specificity than market governance. If the productivity growth that accrues to asset-specificity is extensive, Williamson and Riordan demonstrate that vertical integration becomes increasingly profitable, and is progressively favoured over markets. In that case unified ownership can be regarded as an effective means of safeguarding the productivity-enhancing impact of highly specific assets. Consequently, it is the incidence of transaction costs of markets that impede the optimal resource allocation in the market governance. This is the central outcome of Masten (1984) as well. The conclusion of Riordan and Williamson (1985) seem to hold even if the vertically integrated firm is at a specific scale of production, subject to production cost disadvantage in comparison to the market governance. On aggregate, vertical integration should lead to an increased economic efficiency and welfare.

of the underlying activity. The opportunity cost of higher asset-specificity is the diminished redeployability of the asset in other uses. This corresponds to the potential economies of scale and scope lost in a more standardized production and serving large markets with a large number of customers. The owner of the asset such as a *professional service firm or a service professional* is faced by the choice between two sources of productivity, (1) *economies of scale* derivable from general, non-specific services used in a standardized activities by a high number of client firms, and (2) *effectiveness* derivable from customized services used in non-standard activities by a limited number of client firms in an industry. Assets, which are highly customer-specific, enable the delivery of customized services with substantial productivity potential in the processes of few clients, and in an extreme case one client only. The growth of service productivity may result from tailored cost reduction or tailored increase in the quality of the output of the client's process (cf. Riordan and Williamson, 1985; Porter, 1985). In the context of the service productivity model in Section 3.5.3, it is logical to assume that the degree of asset-specificity[99], measured by a continuous variable *k* (Williamson, 1985), reflects the most productive *alternative* uses of the asset from the owner's perspective. This is approximated by a concave trade-off between the scale-efficiency and effectiveness of service productivity in Figure 25.

Following the standard assumptions of transaction cost economics, each point on the productivity frontier in Figure 25 is associated with the degree of asset-specificity k, which also indicates the number of customers served and hence the flexibility (transferability) of the asset in other uses. In the short run equilibrium $(sceff_{k1}, eff_{k1})$ of period t_1 the asset of the service provider may be used in a standardized activity by a high number of undifferentiated customers. They prefer standardized quality and have the indifference curve c^1. In deviation to the VCA productivity analysis in Section 3.5.3, assets are inflexible in the short run equilibrium in Figure 25. That is, any movement along the frontier t_1 after the choice of k by the service provider is limited. In the longer run, the productivity frontier of the service provider may shift outward as learning and complementary investments enables higher effectiveness in the contractual relationships with a fewer number of differentiated customers. They receive a higher level of customized quality and productivity, which is indicated by the indifference curve c^2 in Figure 25.

[99] In the case of service activities, it is logical to assume that the principal form of the asset is *human capital*.

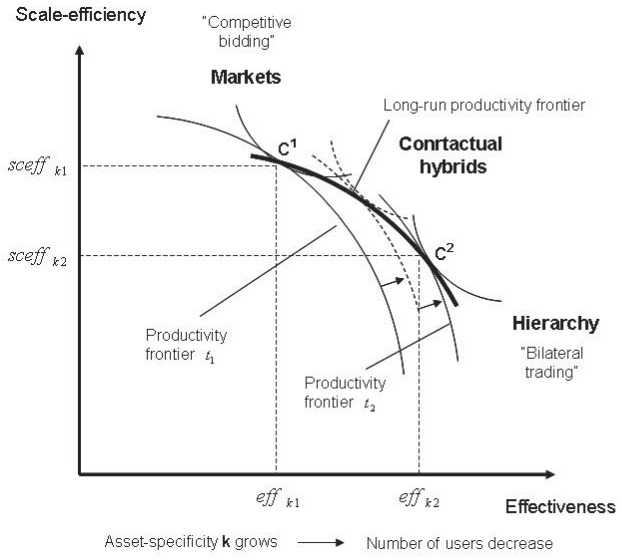

Figure 25. Asset-specificity and service productivity based on VCA.

In period t_2 a new equilibrium $(sceff_{k2}, eff_{k2})$ may be attained at the point, where the indifference (productivity) curve c² is tangent to the provider's productivity frontier t_2. Owing to the sunk costs and mutual learning, the flexibility of the asset may be further reduced in the subsequent periods and the strategic options of the service provider in the utilization of the *new* trade-off may be more limited. The dynamic (evolutionary) perspective implies *that a service provider (the owner of the asset) may have a long-run productivity frontier, which is the locus of the short equilibria of the subsequent periods. Thus, in case of a farsighted service provider the lung-run frontier reflects the 'expected trade-off' at the beginning of the first period.* Following the Williamsonian logic, balancing between scale-efficiency and effectiveness is associated with the managerial choice of 'the fittest' mode of governance[100]. This is also highlighted in Figure 25. In case of standardized services characterized by low asset-specificity and scale-efficient production, the use and the supply of the asset can be separated and the transaction can best be coordinated by the markets. In an opposite case, a hierarchical

[100] The extent to which specificity of the asset, the technological trade-off and the alternative governance modes are actually continuous, and chosen consistently by the management, is an empirical matter. Particularly in the long run, the trade-off needs to be risk-adjusted. This implies that risks associated with the future effectiveness increases with the length of the planning horizon.

arrangement is required to economize on the higher effectiveness and customer's productivity generated by the services of the relation-specific asset.

The inter-dependence between asset-specificity and service productivity can be used to refine the theoretical premises of the socio-economic school of service productivity as well (cf. Grönroos and Ojasalo, 2004; Gadrey, 2002a). Through the mutual learning in the contractual relationship and the customer's participation in the service production, assets and the competences of the provider and the user become more productive and specific to the contractual relationship. As the flexibility (transferability) of the asset decreases, such a 'fundamental transformation' (Williamson, 1985) implies that the identity of the parties becomes increasingly important and the market is substituted for more hierarchical (complex) modes of governance. While the threat of opportunism may be exaggerated in the mainstream of transaction cost economics (see e.g. Granovetter, 1985)[101], it is apparent that in the presence of high effectiveness of services and asset-specificity, more sophisticated mechanisms are required to align the incentives in the contractual relationship.

The question whether an integrated firm represents the 'highest form of incentive alignment' in service transactions is not straightforward, however. In the professional services for instance, the grey terrain between the markets and hierarchies is typically large embracing inter-firm networks and informal social bounds and the personal networks of individual professionals (Hamilton et al., 1998). Such networks that rest on normative social bonds are better understood as economic organizations comparable to a classical firm, than a residual or intermediate category, as suggested in the traditional transaction cost economics (cf. Williamson, 1985). In case of professional services, the relevant focus in the make-or-buy assessment is rather the relationship between the individual professional employed by a service firm, and the customer firm (Teece, 2003)[102]. In that case the incentive of backward integration by the client firms, that is, the recruitment of the professional, is influenced by the

[101] According to Granovetter (1985) the view of transaction cost economics of human nature is 'under-socialized', portraying people as if they were social atoms unsentimentally pursuing their pecuniary interest with little regard for the social connections around them, which are mostly a source of friction. In professional services for instance, opportunistic behaviour of the supplier is suppressed by the *professional norm of conduct and reputation.* This includes setting the client needs higher than the profits of the firm and respecting the absolute standards of professional expertise (Løwendahl, 2005).

[102] Teece (2003) notes that as expert talent becomes more important to problem-solving, decision-making, and dispute resolution, new organizational forms are emerging to cater to the needs of both experts and clients. Traditional hierarchical structures are likely to decline, to be replaced by more decentralized quasi self-organized organizations employing at-will contracts with performance measurement brought down to the individual level.

capabilities of the client firm to evaluate the specificity of the professional's human asset and the consequent productivity impact of that asset.

4.3.7 Service externalities, economies of scope and innovation

Contingent on the property rights regime, the inter-play between asset-specificity, productivity and the organizational design modelled in Figure 25, can be applied to a number of contexts analyzed by the traditional transaction cost economics. For instance, a firm's integration *downstream* into distribution and marketing may safeguard the competitive advantage if the firm's unique resource (e.g. knowledge asset) is specific to the *complementary activity* in the subsequent stage of the value chain (industry or market segment). This is the case with the *universal banking* industry as well (see Section 5). In a situation where the transacting firms may be capable of suppressing opportunism, the relational knowledge may still pass inadvertently into the hands of third parties (Williamson, 1991), if the property right regime is weak (un-protective). In market exchange a firm's knowledge is also exposed to negative externalities, which may arise in conjunction with the intended or unintended debasement of quality for a branded good or service (Williamson, 1981). Unintended quality debasement by an independent distributor poses a hazard for the producer, if the actions taken by an individual distributor affect the performance of other distributors[103]. Deliberate degradation of quality by the retailer may be a profitable strategy as the opportunistic retailer bears only part of the consequent costs. Consequently, costly monitoring in market exchange favours hierarchical governance. The same rationale holds for backward integration as well[104].

The utilization of economies of scope through diversification follows a respective logic. In general, diversification can be understood as horizontal integration by a firm into the production or distribution of related products or services to utilize shared know-how, marketing or other resources possessed by the firm. Within the transaction cost framework a firm's *diversification* into a related product lines economizes on transaction costs of market intermediation of the services generated by the firm-specific

[103] In practice this may take place, when one retailer's poor performance in customer service limits the sales of other retailers (Teece, 1984). The reasoning here is analogous with the team-production with externalities and shrinking as discussed in Alchian and Demsetz (1972).

[104] Teece (1984) suggests that producers of high-quality products and services ought to be vertically integrated backwards into the production of intermediate products when limited opportunity exists to develop an experience rating on suppliers, and when effective in-plant monitoring of suppliers' production activities involves significant costs.

resources (Teece, 1982)[105]. Following the reasoning of Penrose (1959) that of all outstanding characteristics of business firms perhaps the most inadequately treated in economic analysis is the diversification of their activities, David Teece (1980; 1982) puts forward that the orthodox (neoclassical) economics fails to explain the existence of a multi-product firm. Whereas Panzar and Willig (1981) and Baumol et al. (1988) provide the *necessary,* technological conditions for the existence of economies of scope, under which joint-production of related products and services is economically feasible, the arguments are not *sufficient* for the explanation of why the related activities should be coordinated under the unified ownership by a firm.

Teece (1982) notes that multi-product firms can emerge within the 'neoclassical economy', but they do so only 'by accident'. Whether firms are organized along specialized or multi-product lines is economically irrelevant, as markets and hierarchies are regarded as perfect substitutes in the neoclassical economics. It is essential to see that *the organizational approach to diversification developed by David Teece reflects the author's ideas on the dynamic capabilities theory of a firm*. In that setting the service firm is seen as establishing a specialized know-how or asset base from which it extends its operations in response to competitive conditions of business environment (Teece, 1980). A firm's comparative advantage is not defined in terms of the products or services offered, but in terms of the capabilities the firm holds and has access to (Teece and Pisano, 1998). According to Teece (1982) a firm's capability lies upstream from the end product – it lies in the generalizable capability which might well find a variety of final product applications.

Whether the joint production of services and goods requires hierarchical governance such as a diversified firm rests on the contingencies of technology, markets and the property right regime. In the presence of a *strong* (protective) property rights regime and indivisible non-specialized physical capital, the joint production of can be organized most productively through the markets (Teece, 1982; 1986). If the services of the excess capital are specialized to thin markets and exposed to the costs of opportunism, the joint production under unified ownership tend to generate the highest productivity.

[105] This rests on the argument by Williamson (1991) that *economy is the best strategy*. The issue of diversification is a central focus in the strategic management as well. According to Porter (1985), there are two fundamental issues in corporate strategy for the diversified firm: the selection of industries in which the diversified firm should compete and how the strategies of the firm's business units should be coordinated. Both issues are addressed as the fundamental questions of what is the attractiveness of an industry, and how to create a defendable position against the five competitive forces (Porter, 1980). While strategizing externally, the operative rationales for the diversification in Porter (1985) are economizing on the shared costs and interrelatedness between the strategic business units.

When the source of economies of scope is human capital or proprietary knowledge, asset-specificity is less influential and the contractual relationship is exposed to the externalities and the *make-or-sell* consideration analogous to the forward integration discussed above. In the presence of *weak* property rights regime, information impactedness and incomplete disclosure of proprietary information, the seller and buyer of the service have to cope with the *fundamental paradox of information* (Teece, 1982, Arrow, 1971). The paradox implies that the value of the information for the purchaser is not known until it is received, but then the information has been acquired without any compensation. While diversification is, according to transaction cost economics, expected to prohibit information externalities and enable productive utilization of proprietary information, there exist service industries such as professional services where hierarchy a does not provide a pre-emptive safeguard. This is manifested by the empirical evidence from investment banking for instance (Morrison and Wilhelm, 2008).

The dual perspective of economizing on *transaction costs* and the *productivity* of firm-specific assets through dynamic capabilities of a firm is the major contribution to the value creation approach (VCA) and the theoretical coherence of transaction cost analysis as well. Introduced in the path-breaking article, *Profiting from Innovation* (PFI) (Teece, 1986a) the duality is brought to the agenda of *strategic management* and (service) *innovation*. In general, PFI aims to outline the technological and transactional conditions, under which markets and hierarchies tend to be the most productive modes to appropriate the benefits from the firm's innovation activity[106]. As a refinement to the original analysis, it is shown here that PFI proposes three criteria that make an integrated firm the most productive in (service) innovation. *First,* the commercialization of the innovation by the firm requires an access to complementary assets such technological know-how and activities outside the innovating firm. Complementary activities refer to the primary activities such as manufacturing, distributing and marketing in the Porterian value chain (Porter, 1985). The functional purpose of the complementary assets and activities determines he direction of integration (vertical, lateral, and horizontal). This may be called (1) the *criterion of complementarity* (Teece et. al., 1997). S*econd,* the complementary assets and activities need to be specific to the innovation, which implies relational dependency in the transfer of the services of the complementary assets and activities. This may be called (2) the *specificity*

[106] Relatedly, PFI offers strategic advice to business managers how to avoid the loss of the competitive advantage based on the firm's innovation activity. In retrospect, Teece (2006) notes that PFI does not try to explain how to build and maintain durable competitive advantage.

criterion (Williamson, 1985; Riordan and Williamson, 1985). *Third,* there exists a weak property right regime. As the innovation cannot be protected by patents or trade secrets and the transacted knowledge, it is exposed to information externalities (Teece, 2009). This may be called (3) the *criterion of externality* (Williamson, 1981). If any of the three criteria does not hold, the innovation can be utilized internally by the innovating firm with no need to integration, or transacted externally through the market[107].

Several managerial implications that amend the standard transaction cost analysis can be derived from PFI. Independent of asset-specificity, the internalized asset has to be critical (productive enough) in the profitable utilization of the innovation. This is the implication of the productivity model in Figure 25 as well. Activities and assets of a firm need to be assessed as an entity. Examination of each transaction in isolation may lead to sub-optimization (Dosi et al., 1998). Relatedly, if the innovating firm exhibits a disadvantage in finance or a weaker competitive position (Porter, 1980; 1985), co-operation with better-positioned rivals and the holder of the complementary asset is thereby needed (Teece, 1986; 2006). Teece (1986) concludes that big integrated corporations tend to have comparative advantage over smaller enterprises in *systemic* innovations, which require extensive design and coordination of complementary assets and activities (Teece, 1984). This is the case in the universal banking industry for example. If the most critical complementary assets are highly dedicated to the innovation and risks of externalities abound, smaller companies which are more dependent on market governance and networks are disadvantageously positioned. *Autonomous and stand-alone innovations*, which are less dependent on a complementary assets and activities, may proceed well also in small unintegrated enterprises (Teece, 1986a; 1984). This holds e.g. for a number of professional services.

4.3.8 Corporate structuring

As a shared topic of interest in transaction cost analysis (Teece, 1984; Chandler, 1990) and organization research (Thompson, 1967), *corporate (re)structuring* examines the productive ways of organizing *internal* transactions and service activities by the firm. In deviation to the make-or-buy considerations in the context of individual transactions, the internal organization of a corporation

[107] For instance, even if the complementary asset were specific and entail a bilateral dependency, market procurement would be the most productive mode under the strong property rights regime. It prevents the leakages of the externalities to competitors and the owner of the complementary assets.

follows more from the strategic goals and priorities of the enterprise. An implicit assumption in the corporate restructuring is that the growth of the enterprise is path-dependent. This implies that history matters (Penrose, 1959). As the firm evolves and grows through the integration of transactions, the new activities become established and there is no need to expose them to a constant make-or-buy reassessment[108]. Corporate structuring plays a prominent role in the analysis of service productivity within the value creation framework. On the basis of the contingency theory on organizational adaptation (Lorch and Lawrence, 1967; Thompson, 1967) it is maintained here that the *corporate structuring involves the strategic choices of the enterprise how to balance between scale-efficiency and effectiveness in the production and delivery of services and products*. This assumes consistency[109] between organization, strategy and technology. Given the diversity of organizational structures and the managerial models, the focal issue is the circumstances, under which the 'multidivisional form' and the 'functional form' are the fittest (the most productive) corporate structures. Hence, *the analysis aims to shows that the theoretical and empirical interest in the U-form and the M-form follows not only from the stylized fact they represent the polar cases in the organizational design, but also because they are associated with the contrasting characteristics of service productivity.*

From a longer perspective, the internal organization of corporations and restructuring became a popular agenda through the extensive studies by Alfred Chandler on the US business history (Chandler, 1962; 1977). He observed that in the 1920s, the intensive expansion of US companies in scale and scope of the business lines led to organizational innovations in their search of a better match between the growth of the enterprise and the managerial efficiency. In his later work '*Scale and Scope'* (1990) which compares the dynamics of industrial capitalism in the US, Germany and the UK, Chandler observed that the leading companies modified the administrative structure as they added units abroad or in the related industries. This modification was driven by the need to reduce administrative transaction costs[110]. Since the extensive expansion overseas the enterprises adopted a multidivisional structure through which the geographical regions were administered as area divisions[111]. Corporate

[108] Detailed cost evaluations are further complicated by the increasing complexity and interdependence of corporate activities which is entailed by the growth.
[109] This also assumes that the managers are 'boundedly' rational.
[110] In this setting, administrative costs consist of transaction costs and the management costs (Demsetz, 1993). They approximate the costs of bureaucracy (Williamson, 1985).
[111] The reason why Chandler juxtaposes diversification and multinational growth is that according to him, they serve similar strategic purposes. While vertical integration and horizontal growth in the domestic markets are defensive to protect the existing investments (cf. Thompson, 1967), diversification and multinational expansion utilize the existing investments and

diversification into related industries required more deep-going administrative restructuring, and the diversifying companies adopted quickly a multidivisional structure. These empirical findings by Chandler have been instructive for understanding and viewing corporate restructuring through the lenses of a contract (Williamson, 2003). Transaction cost economics maintains that organizational innovations are central for understanding the 'modern' corporation. According to Williamson (1989), the study of intra-organizational innovations requires that the details of internal organizations are examined. As with the external contracts, the agenda of the corporate restructuring is to understand the efficiency implications of the alternative governance modes of the firm.

The characteristics of the organizational forms are more systematically approached by the organization theory, where corporate structuring is addressed in relation to the complexity of contingencies of the business environment and the requirements for efficient adaptation. Scott and Davis (2003) note that in response to greater amounts of task complexity, uncertainty and interdependence, organizational forms are likely to exhibit increasing differentiation, structural flexibility and capability of coping with increased information processing demands. This suggests an extensive taxonomy of the organizational forms. One of the basic corporate structures in this taxonomy is the *functional or unitary form* (the U-form), which draws on the logic of centrally coordinated specialization and the utilization of the economies of scale and scope in the corporate activities. A distinctive feature of the U-form is departmentalization around varying, specialized activities, which contribute to the common goals. It includes hierarchically organized line departments, involved in activities directly related to producing or distributing goods or services, as well as more independent staff departments, involved in support functions such as accounting, finance, and personnel (Scott and Davis, 2003). The organizational logic of the other basic structure, the *multidivisional form* (the M-form) is coupling divisional autonomy with centrally controlled performance evaluation and resource allocation. More specifically, the multidivisional form is based on groupings by products or markets overlaid on functional forms. Divisional units operate in a relatively autonomous manner from each other, and each contains departments organized along function lines. The superordinate corporate level oversees divisional performance and allocates resources accordingly (Scott and Davis, 2003). Hence, operational decisions reside within the division, while strategic decisions are made at the corporate headquarters.

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the existing organizational capabilities, in the move into new markets and new businesses (Chandler, 1990). Supportive arguments have been presented in Penrose (1959) and Teece (1982) as well.

More advanced organizational forms, such as matrix forms[112], and to a higher extent adhocracies[113] and networks[114], accommodate multiple objectives and divided authority. Derivable from the characteristics of the main cases (the U-form and the M-form), the more advanced and complex organizational forms show a shift from a reliance primarily on buffering tactics and sealing out or suppressing uncertainty and variety from the core, to the use of bridging tactics and expanding boundaries to incorporate uncertainty within the core activities (Scott and Davis, 2003; Thompson, 1967). On aggregate, the taxonomy of the organizational forms discussed by Scott and Davis (2003) is instructive in several ways. First, it helps identify the optimal structure in response to the demands of technology and the other contingencies arising from the business environment. More generally, the taxonomy reflects the evolutionary progress in managing resources, activities and uncertainty within the 'modern' business corporations. Second, the taxonomy conforms to traditional industry characteristics. The unitary, the multidivisional and the matrix forms are widely used in manufacturing industries and in scale-intensive services, whereas the adhocracy and the networks are implemented in various knowledge-intensive service industries (Viitamo, 2009)[115].

In general, for the principles that guide the choice between the organizational modes, there exists a clear distinction in the emphasis between the general organization theory and transaction cost economics. In particular, while the former assesses objectively the appropriateness of the U-forms and the M-form within the contingency framework, the latter takes a more normative stance and proclaims the superiority of the M-form with a lesser emphasis given to the organizational fit. Transaction cost economics asserts that once internalized, there is no guarantee that the transaction and the associated activity will be effectively organized, given the hierarchical structure of the firm (Teece, 1984; Williamson, 1981). Bounded rationality and opportunism are ubiquitous, and the problems just vary with the modes of internal organization. The policy recommendation for the corporate management rests on the principle of *hierarchical decomposition*, which urges balancing between markets and

[112] By definition, the *matrix form* is a dual-hierarchical form that organizes work simultaneously by functional and project criteria. Hence, it is a combination of a unitary and a multidivisional form.
[113] *Adhocracy* is characterized by low formalization and centralization and relies heavily on highly trained, independent, self-organizing individuals, who move in and out of project teams (Scott and Davis, 2003).
[114] *Network* allows integration of activities across formal boundaries, both within and across organizations (Scott and Davis, 2003).
[115] Conceivably, the actual organizational forms implemented by firms are most often hybrids of the forms discussed by Scott and Davis (2003). Big corporations are often structured principally by a unitary, divisional or matrix form, but they may employ adhocracy and networks in the service activities related to internal and external transactions.

hierarchy[116]. The overriding logic behind the decomposition principle draws on the comparative assessment of alternative organizational modes in the face of (diversified) corporate *growth*. The functional form, as noted by Chandler (1990), is exposed to communication overload, and hence bounded rationality as the congestion of managerial services compounds the 'Penrose-effect' (Penrose, 1959). Decomposition and the specialization of managerial responsibilities along product lines mitigate the costs of bounded rationality. The upshot according to Williamson (1989) is that the organizational innovation of the M-form, which has a mainly bounded rationality origin, has also unanticipated positive side effects on corporate goals by attenuating sub-goal pursuit and opportunism[117]. Hence, from the growth perspective, the M-form should 'in most cases' be superior to the U-form. Such an argument (the M-form hypothesis) has inspired a whole stream of empirical studies in applied economics and strategic management. While the pursuit of the organizational match within the strategic management draws distinctively on the normative argumentation in transaction cost economics, the empirical evidence, however, gives the M-form hypothesis only to a qualified support (Hoskisson et al., 1993) [118].

Organization theory posits that given the complexity, variation and unpredictability of the task environment, there exits no 'one best way' to structure complex organizations (Ashby, 1968;

[116] Williamson (1981) maintains that internal organization should be designed in such a way as effect quasi-independence between the parts, the high frequency dynamics (operating activities) and low frequency dynamics (strategic planning) should be clearly distinguished, and incentives should be aligned within and between components so as to promote both local and global effectiveness.

[117] The validity of the decomposition principle gains further support from the comparison with a third basic form, a holding company, the H-form. The H-form is characteristic of conglomerates which pursue unrelated diversification. Whereas the H-form shows a similar pattern of decentralization as the M-form, its business units enjoy higher autonomy and are most often unrelated with respect of the markets and technology[117]. In contrast with the M-form, cash flows in the H-form are not reallocated between the competing divisions based on their relative performance (profitability), but instead are returned to the independent source divisions. Hence, the financial independence of the subsidiaries and the absence of effective cost control and market test is another source of inefficiency and opportunism, which entails a disadvantage relative to the M-form. From the corporate perspective both forms are decentralized and the subsidiaries hold assets, technology and organizational capabilities, which are specific to their current use, that is $k > 0$. Through the better utilization of internal capital markets and incentive alignment however, the M-form is able to safeguard the specific assets against hazards, which should lead to a higher organizational productivity relative to the H-form (Williamson, 1985). To conclude, the competitive advantage of the M-form over the alternative forms draws on the hierarchical separation and the specialization of management, strategic planning and resource allocation capability supported by an efficient monitoring and control apparatus (Williamson, 1985). These capabilities enable resource reallocation from the less to the more productive uses within the corporation. In total, the adherence to the M-from by Williamson seems to be in consonance with his view on the individual transactions in the face of asset-specificity. Namely, market mechanism and high-powered incentives should be utilized as much as possible to attain production efficiency, whereas some degree of hierarchy is a necessary evil to delimit opportunistic sub-goal pursuit of the constituent parts of the corporation.

[118] The fact that there exists no unambiguous evidence that enterprises with the M-form systematically outperform enterprises that implement the U-form or the H-form, points to the conclusion that corporate performance is strongly influenced by managerial capabilities and skills in matching the corporate strategy with the appropriate structural form.

Thompson, 1967; Scott and Davis, 2003). The more heterogeneous the overall task (business) environment is, the greater are the constraints (anticipated variation) presented to the corporation, and the more dynamic (uncertain) the task environment is, the greater are the contingencies (unanticipated variation) presented to the corporation. In particular, the principle of 'organizational fit' suggests that the structure of a corporation cannot exclusively be determined by internal requirements of coordination and incentive alignments as put forward by Williamson (1985) and Teece (1984). Whereas *internal* coordination is essential for the effective operation of the technological core of corporations and managing the interdependencies between the core activities, adjustment to *external* constraints and contingencies, which are mostly beyond the control of the management, is equally important and cannot be ignored. Responsiveness to environmental contingencies in the productive organization of the boundary-spanning activities is a prerequisite to reach the highest possible (bounded) rationality[119]. In this setting, the best-fitting organizational forms is determined by 1) the heterogeneity and dynamics of the task environment, 2) internal interdependencies (organizational technologies), and 3) the consequent needs for organizational differentiation, flexibility and the information-processing demands (Scott and Davis, 2003).

The main proposition of organizational rationality and structure in Thompson (1967) provides the basic rule for organizing a firm's activities productively. *Under norms of rationality, organizations facing heterogeneous task environments seek to identify homogenous (market) segments and establish structural units to deal with each* (ibid.). The key dimensions of heterogeneity are geography (the number of markets served), the social composition of the environment (the variety of customers), inputs, and other organizations the corporation is dealing with. When the task environment is heterogeneous - a reasonable assumption for all companies with multi-market operations - and *stable*, organizational rationality assumes several functional divisions (specialized production, distribution, procurement etc.) which are capable of coping with the diversity of environmental constraints. The adaptation of the functional divisions to the environment is based on standardized responses and rules[120], which enable the utilization of economies of scale and scope[121]. It can be concluded that under

[119] The boundary-spanning activities of a firm can be defined as the opposite ends of the firm's value chain (Porter, 1985). The internal activities at the opposite ends are linked to external activities of other firms and organizations. For instance, the procurement is linked to the external sales of the supplying firms, and sales activities are linked to the procurement of the customers of the firm.

[120] Standardized rules are characteristic of internal coordination of pooled interdependence as well (see above).

these the conditions the U-form is the most feasible structure of corporate governance, where the productivity of internal and external service activities draws principally on *scale-efficiency*. Effectiveness with respect to the markets and customers served is determined through, and subject to preplanning and the systematic effort to control future uncertainty. As a corollary, service quality is understood as standardized quality and it reflects the extent to which the pre-designed effectiveness is achieved.

From the above reasoning, it can be concluded that the degree of uncertainty of the task environment, *ceteris paribus,* determines the feasibility of the M-form. When the task environment is both heterogeneous and dynamic (uncertain), the adaptation based on rules needs to be displaced by a continuous monitor of the environment and responses, which calls for a decentralized corporate structure[122]. In this setting, the M-form is an organizational response to the dual needs to adapt to a heterogeneous and dynamic environment, and to manage reciprocal interdependence between the technical core and the boundary-spanning activities. It is straightforward to see that the overall rationality of the M-form with respect to the U-form becomes inevitably more constrained. This follows from the stylized fact that the technical core, which represents the rational system itself, cannot be separated from the boundary-spanning activities in case of the M-form. As the boundary-spanning activities follow the open system logic (Thompson, 1967; Scott and Davis, 2003), the technical core of the organization – in each of the decentralized (clusters) value chains - is more exposed to the dynamics and external uncertainty of the local environment. It can be concluded that, in deviation to the U-form, the productivity within the M-form draws principally on effectiveness and adaptation to the locally differentiated markets and customer demands. As the decentralized value chains operate in the same industry, the M-form sacrifices the potential economies of scale-efficiency. Hence, efficiency draws principally on cost control, which is maintained through high-powered incentives at the local business units. As a corollary, service quality is understood predominantly as a customized quality and it reflects the extent to which the case-sensitive effectiveness is achieved.

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[121] Given the heterogeneity-stability condition above, Thompson (1967) proposes that when technical-core (production) and boundary-spanning activities can be isolated from one another except for scheduling, organization under norms of rationality will be centralized with an overarching layer composed of functional divisions.

[122] Accordingly, Thompson (1967) notes that under conditions of complexity (heterogeneity and dynamics), when the major components of an organization are reciprocally interdependent, these components will be segmented and arranged in self-sufficient clusters, each cluster having its own domain.

4.3.9 Summary

The analysis in this section stresses the prevalence of *organizational resources* and *design* as distinct sources of the productivity of a service firm. The section shows that the perspectives of organization theory and transaction cost economics provide new, complementary insights to the analysis of productivity, the productivity of a service firm as well as to the integrated approach to strategic management. On aggregate, these organizational *perspectives* contribute to the explanatory value creation approach. Through the logic of the contingency theory, the organizational design sheds light on the focal question of how managerial choices of organizations affect the productivity of a service firm and are affected by technological and strategic considerations of service productivity. If consistent, the characteristics of organizations manifest the corporate strategy in balancing between scale-efficiency and effectiveness in the external and the internal service activities of the enterprise.

The examination of the scientific premises of the organization theory suggests that organizations can offer new systematic insights to service productivity. The emergence of the systemic paradigms in the course of the 20th century highlights the *two facets* of productivity which are considered central to the performance of organizations. Whereas the rational systems school shows a distinct adherence to instrumentalism and organizational *efficiency*, the focus of the natural systems school is more directed to the internal processes and *effectiveness* (outcome) of the organizations. The open systems paradigm, which dominates the present academic thinking, takes a more balanced view. The three paradigms are complementary and guide the organized action in different domains of managerial control. The trade-off between effectiveness and scale-efficiency is addressed implicitly and it shows high relevance for the organizational design, the technological characteristics and the strategic goals of the organization.

With the propositions on the ‘organizational fit’, the most prominent contribution of the organization theory is the conceptual clarification between the technical productivity and organizational productivity. The organizational productivity (rationality) follows from the ‘objective’ contingency argument that the choice of the organizational mode should be compatible to the characteristics of technical productivity (rationality) if the objective is to attain the highest possible bounded rationality of the system. It can be concluded that organization is a *complementary resource* providing services with the technological core of the organized activity. Intuitively, the highest technical rationality and

certainty is shown by the *long-linked technology*, which is characteristic of the scale-intensive manufacturing processes. The rationality of the *mediating technology*, manifested e.g. in financial intermediation, is generally lower as customers intervene in the production and the delivery. This also constrains the standardization of activities in the 'mediating' service processes. Clearly, the lowest technical rationality is associated with the *intensive technology*, which is utilized e.g. in the highly open systems of knowledge-based services. It can be further concluded that the 'fittest' mode of organization for the long-linked technology is tangible and unambiguous, whereas for the intensive technology the 'fittest' organizational mode is intangible and ambiguous. As a corollary, the relative importance of economic rationality (efficiency) to the instrumental rationality (effectiveness) is the highest for the long linked, intermediate for the mediating technology and the lowest for the intensive technology. Such a conclusion conforms to the technological trade-off suggested in the descriptive value creation approach (VCA).

The organization theory can be regarded as a generalized theory of strategic management. This becomes apparent when 'the firm' is seen as a 'complex organization' having the capability of making deliberate decisions and taking independent actions in the pursuit of high bounded rationality. In both contexts rationality is addressed exclusively from the organization's perspective. The task (business) environment is seen as a residual of the organization itself consisting of customers, suppliers and competitors, the control of which necessitates the possession of market power. This creates an analogy with the *structuralist* approach to strategic management. In particular, the activity-based view of a firm acknowledges that an organizational structure that 'fits' to the firm's value chain will improve a firm's ability to create and sustain competitive advantage (Porter, 1985). In a similar vein, there is an analytical link to the *resource-based* reasoning. In particular, as organizations tend to employ a *mix* of the three generic technologies (long-linked, mediating, intensive), there may be unlimited prospects for the growth of productivity through the utilization of excess capacity of the resources and the technological core of the firm. The inference by Thompson (1967) that organizations with multiple technologies seek to grow until the least-reducible component is approximately fully occupied is analogous to the idea of the least common multiple of a firm's growth introduced by Penrose (1959). Thompson (1967) proposes moreover, that managers seek to place the boundaries of the organization around those activities which, if left to the task environment, would be crucial contingencies. This is

compatible to the main contingency argument on the firm's optimal boundaries raised by transaction cost economics.

Transaction cost economics provides a *specific*, operational *extension* of the generic organization theory with consequent managerial implications. The interlinked contingencies originating from uncertainty, opportunism, bounded rationality and the technological constraints of asset-specificity, provide the main rationale for the organizational design by a firm. This is manifested in the managerial choice of 1) the firm's boundaries in the transactions between vertically, horizontally or laterally related activities and 2) the corporate structuring that facilitate the internal transactions of the firm. In deviation to the organization theory, transaction cost economics is intrinsically focused on the 'ways of organizing exchange'. This implies that all kinds of contractual relationships along the continuum of markets, contracts and hierarchies are considered viable modes for the governance of transactions. Such a view reflects the 'economizing' assumption on the behaviour of individuals and firms. While consistent with the resource-based view of strategic management the economizing assumption contrasts sharply with the 'strategizing' behaviour that guides choices in the Porterian approach to strategic management. As noted by Thompson (1967), organizational rationality is attained by means which the organization can control for the benefit of the firm. Such an assumption of purposeful action of the firm's management is assigned a negligible role in the mainstream of transaction cost analysis. On aggregate, the synthesis of strategic management and organizational design indicate that the pursuit of high productivity in the presence of bounded rationality is guided by 'strategizing' in the external transactions and 'economizing' in the internal transactions.

In its original formulation, transaction cost economics is concerned with the productivity of a firm and the productive ways of employing the transaction-specific assets, mainly indirectly. This is logical as the main focus is geared to the ultimate causes of transaction costs, bounded rationality and opportunism. They are largely beyond the direct control of the firm's management. Nevertheless, the analysis here demonstrates that the productivity in the context of a service firm may be of high theoretical relevance for transaction cost economics as well. Indicating 'economic friction' the occurrence of transaction costs suggests a waste of productive resources, which may be human or technological. Through the perspective of organizational fit and rationality, the mainstream of transaction cost economics is *implicitly* concerned with the productivity of the services of the

transaction-specific assets as well as the productivity of labour (managerial) services in planning and executing the business transactions. The importance assigned to the expenses of effective governance suggests a *cost-oriented view* on productivity, or *cost-efficiency*[123]. In this setting, the overall objective of the management is to minimize the costs of labour services (including opportunism) and the costs of governance, given the specifications of the outcome (including effectiveness) that the assets and the underlying transactions are expected to generate[124]. It is pointed out here that the inclusion of the traditional transaction cost perspectives into the analysis services would enhance the robustness of the socio-economic analyses of service productivity. Through the mutual learning in the contractual relationship and the customer's participation in the service production assets and the competences of the provider and the user become more productive, and at the same time, more specific to the contractual relationship. As the redeployability of the asset decreases, such a 'fundamental transformation' (Williamson, 1985) implies that the identity of the parties becomes increasingly important and the market is substituted for more hierarchical (complex) modes of governance.

In deviation to the traditional perspective of transaction cost economics, the outcome-orientated view developed in this thesis is dynamic and examines how the services of labour and transaction-specific assets can generate more, improved and more effective output. Based on the productivity model developed in Section 3.6, it is shown that the outcome-oriented approach can be addressed and developed systematically through a resource-based analysis of service productivity using vertical integration and control as a special case. Acknowledging the central role of bounded rationality, it is maintained that the profitability of vertical integration is highly dependent on the dynamic capabilities of the firm's management in matching the services of the transaction-specific assets with the optimal organizational mode. The primary concern in the internalization of the services of the assets is to secure the smooth running of the activities whose productivity the specific assets are expected to enhance. The owner of the asset (e.g. human capital), is faced by the trade-off between two sources of productivity, (1) scale-efficiency derivable from general non-specific services which are applicable to standardized activities in case of high number of customers, and (2) effectiveness derivable from the customized

[123] The term transactional efficiency, instead of transactional productivity, is appropriate in this context to indicate the performance of individual transactions. This is because a) productivity is conceptually associated with production, b) cost control is more linked to efficiency, and c) effectiveness is not a plausible concept for assessing the transactional performance within the examined setting.

[124] Given the persistent difficulty to distinguish between the production costs, transaction costs of markets, and the managerial costs of internal governance, the progress has not been achieved by the techniques for measuring transaction costs but rather by operationalizing hypotheses to indicate, where and when transactional difficulties are likely occur.

services which are used in non-standardized activities in a case of a limited number of customers. Growing asset-specificity enables the delivery of customized services which may improve the productivity of the processes of few clients, or one client only. Hence, *the analysis of service productivity in a case of changing asset-specificity represents a special case of the generic productivity trade-off between scale-efficiency and effectiveness addressed in the descriptive value creation framework in Section 3.5.*

In recognizing the organizational challenges to align incentives in professional services, the suggested productivity model puts forward the interplay between the technological and contractual choices in the context of service transactions. For instance, even if asset-specificity increases the overall productivity of the activity and the productivity of the user's processes, a 'farsighted' owner of the asset may be indifferent between high productivity impacts of the future uses of the asset and low productivity impacts of the present uses of the asset, if the services of the asset in markets and hierarchies are expected to generate equal profitability net of governance costs. The outcome-oriented productivity model in the case of vertical integration may provide useful insights to the other contexts of make-or-buy and make-or-sell as well. In forward integration into distribution, diversification as well as the horizontal integration by multinational enterprises, the key driver of internalization is the firm-specific resources characterized by excess capacity in the productive services that are difficult to trade in the market. In the most generic case this is manifested by the organizational design in profitable innovation.

The ramifications of markets and hierarchies for the corporate governance and restructuring shift the focus from the external (inter-firm) transactions of services to the productivity of internal (intra-firm) transactions and service activities organized within a firm. While addressed by the organization theorists as well, corporate structuring is the other major field of application in transaction cost economics. The productivity of the organizational services of a firm is based on the 'models' of corporate governance, which are designed to economize on internal transactions and strategize on external transactions. Of the various organizational models the unitary form (the U-form) and the multidivisional form (the M-form) are the most prominent for the analysis of service productivity. *First*, they represent the main cases, which the various hybrid forms derive from. *Second*, these main cases provide contrasting implications for service productivity. In the original assessments

(Williamson, 1989; 1985), the market-oriented *multidivisional* form is considered universally superior to the hierarchically oriented *functional* form in the corporate governance. This owes to the axiomatic view that markets should be relied upon as much as possible to attain high cost-efficiency in production, whereas hierarchy should be utilized limitedly only to attain aligned (low-powered) incentives for the productive use of the corporate assets[125]. In this setting, the cost disadvantage of the functional form is assumed to grow in the face of corporate growth, as the costs of monitor and the congestion of managerial services tend to increase. Such an argument ignores (underestimates), however, the impacts of information and communication technologies (ICT) which improve the productivity of the managerial services in all governance modes.

The organization theory addresses corporate structuring more objectively and puts forward the contingency in the pursuit of the 'organizational fit' with the task environment. The insights of Thompson (1967) suggests that in circumstances where (subjective) uncertainty is low, and when the productivity of the technological system draws on *functional specialization* and *scale-efficiency,* the U-form is the fittest (most productive) mode of organization. In the unitary form, effectiveness is determined mainly residually. Conversely, in circumstances where (subjective) uncertainty is high and when the productivity of the technological system draws on geographic specialization (diversification), as well as the reciprocal interdependence between the primary activities and high *effectiveness*, the fittest (the most productive) solution to the organizational design is the M-form. In the M-form, scale-efficiency is determined mainly residually.

[125] The case of backward integration highlights the efficiency argument of the Williamsonian transaction cost economics more generally. As long as there are no serious hazards in using market exchange, transaction should be left under the market governance of markets for its superiority in generating production efficiency. Even when transactions are accompanied by a moderate asset-specificity, uncertainty and frequency, a specialized supplier guided by high-powered incentives attains a higher scale and cost efficiency than a vertically integrated firm. The built-in assumption that the supplying and buying firms possess undifferentiated business opportunities and capabilities (Demsetz, 1993) contrasts sharply with the assumptions of the resource-based view on strategic management and evolutionary economics (Nelson and Winter, 1982). They stress the uniqueness of the firm's resources and capabilities as a source of its competitive advantage. In conclusion, the Williamsonian transaction cost economics accepts vertical integration and hierarchy mainly as a *necessary evil* to mitigate the hazards on efficiency caused by bounded rationality and opportunism, whereas for the resource-base view of firm the managerial skills of 'integration' (Teece and Pisano, 1998) belong to the repertoire of dynamic capabilities of a firm searching for competitive advantage. The structuralist approach of strategic management (Porter, 1980; 1985) in turn regards vertical integration as a strategizing *means of power* to generate and sustain monopoly rent. Logically, a diversity of drivers may co-exist in appropriating the rents of the services provided by the firm-specific assets.

As with the organization of the external transactions, the managerial skills (dynamic capabilities) and perceptions on the business environment play a prominent role in the 'actual choice' of the organizational mode. Figure 26 illustrates organizational fitness through the productivity frontier of a service industry (see Section 4.2). Whereas the service technology is assumed to be characterized by the firm's strategy and organization, it is also reasonable to assume that *organizational fit* is characterized by specific regions and inherent *discontinuities* along the continuous service technology frontier. In Figure 26, the U-form is the fittest organization in the regions of high scale-efficiency and low effectiveness, whereas in case of the M-form it is the opposite. In between there may be a number of mixed forms of matrix (hybrid) organizations[126].

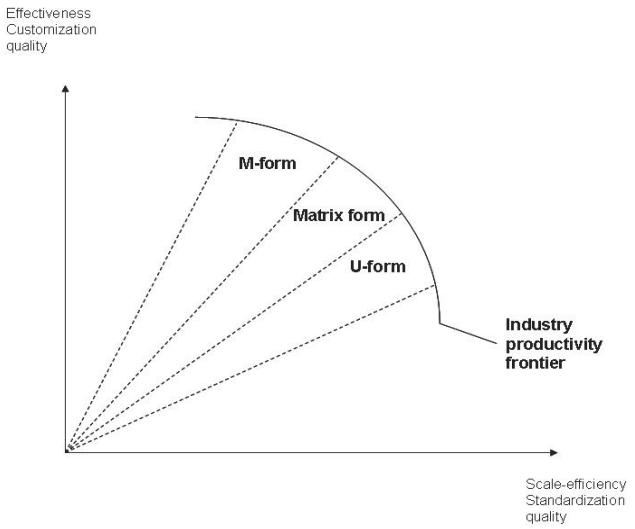

Figure 26. Organizational productivity illustrated on the basis of VCA.

[126] In reality, the fittest organization forms in Figure 26 may be overlapping for some regions of scale-efficiency and effectiveness.

5 The Case Universal Banking Industry

5.1 Introduction

The empirical part of the thesis in Section 5 examines how the theoretical arguments of the *extended* value creation framework can be applied within the universal banking industry, and how the empirical evidence on universal banking can be used to support the arguments that are raised in the synthetized framework. For that purpose the empirical study aims to identify the specific industry characteristics that highlight service productivity. The rest of this introductory section provides the empirical rationale for the managerial approach to service productivity and a historical overview of case banks Svenska Handelsbanken and Nordea. Section 5.2 outlines the methods in collecting and analyzing the empirical data. On aggregate, this involves the description of 1) conducting the industry case study, 2) organizing the company interviews, and 3) using and analyzing the data. The empirical illustration and application of VCA in this thesis is divided into two parts. *First*, on the basis of the academic literature and earlier studies on the banking industry - including the quantitative and qualitative industry data - Section 5.3 examines the specific features of the universal banking industry that are central in the application of the descriptive value creation approach that is developed in Section 3.5. These features include the various aspects of banking technology and the established standards in assessing competitiveness and the productive performance within the banking industry and the affiliated economic research. *Second*, on the basis of the qualitative industry data collected in the comparative case study, Section 5.4 applies the explanatory part of VCA - the strategic and organizational extension that is outlined in Section 4 - in the Finnish universal banking industry. The key focus here is the identification of the *productive regimes* at the two case banks, Nordea and Svenska Handelsbanken. The outline of the productive regimes is prepared by the discussion of the core activities of bank, the boundaries of the banking firm, and the strategic role of ICT in the universal banking industry.

5.1.1 A managerial approach to banking business

The managerial (strategic and the organizational) approach to service productivity that is adopted in the empirical analysis of the thesis, highlights the profound change in the business environment (including technological progress) of the Nordic banking industry in the past two decades. The deregulation in the

financial intermediation and the supply of capital have fostered the creation of competitive and diversified financial services markets. The business dynamics and productivity is further facilitated by the novel applications of information and communications technologies (ICT). The global financial crisis that started in 2008 manifests the deep-rooted traditions in academic research of finance, and the negligence of the economic fundaments of competitiveness and productivity in the banking businesses[1]. Banking is an inseparable part of the financial system of the economy. On the other hand, banking is nowadays similar with any other industry regarding the competitive pressure; it is forced to adapt to changing market circumstances.

In consonance with the main argumentation of this thesis Schmidt (2005) notes that the common ground which holds a considerable promise to help banks in the search for an improved competitiveness and performance lies between the fields of *industrial organization*, *strategic management* and *organizational approach.* Moreover, Schmidt (2004) notes that banking is an industry in which strategic imperatives are anything but clear. In particular, this holds for the banking business called corporate banking. While the structure-conduct-performance paradigm (SCP)[2] provided a plausible framework for a bank's strategic management under the era of tight regulation, a more competitive business environment assumes higher flexibility and innovation in selecting the *optimum* strategy. The characteristics of strategy alone do not guarantee a sustained profitability or productivity. Strategy and organizational design are complementary elements of the business system. There is a relationship of mutual determination (Schmidt, 2005). Since universal banks are involved in multi-product and multi-market business operations, organizational design is of high importance and it needs to be aligned with the strategy (cf. Thompson, 1967)[3]. Hence, the contingency theory gains a growing interest among the banking economists as well (cf. Yildirim, 2005). Baron and Besanko (2001) note that organization must fit with the strategy, but it must also evolve in response to changes in the strategy. As the strategy of a bank is based on specific drivers, organization must also be a function of the same drivers. Yildirim (2005) notes that corporate restructuring reinforces the segmentation

[1] According to Schmidt (2005), the impressive development of literature on the theory of finance, the prominence of the capital-asset-pricing model (CAPM) as well as formal modelling of optimal incentive systems in the past decades has largely relegated the business and operation aspect of banking as an industry from the agenda of academic research.
[2] This is the underlying assumption of the Porterian theory of strategic management (Porter, 1980; 1985).
[3] This is a central argument raised by Schmidt (2005) as well. In order to be successful, any large economic institution [such as banking corporations] needs to create and maintain consistency between strategy and organization as two core elements of its value creating. In simple words, consistency is given if the elements of the system are such that they fit together well in the sense that they mutually reinforce their respective positive effects and mitigate their negative effects (Schmidt, 2005).

strategy and allows the bank to focus on the specific needs of each client segment, to offer differentiated and customized services.

Accordingly, corporate (re)structuring enables competitive advantage based on greater growth options, better quality of services, better efficiency and effectiveness as well as better human resource management (Yildirim, 2005). Assuming that there exists objective or *perceived* variation in the contingencies of the environment (uncertainty), technology and the managerial skills and practises (reducible to the bounded rationality), competing firms within an industry and markets may adopt different kinds of organizational models. In general, the Nordic banks face and operate in coherent markets (with respect to uncertainty). They have equal access to market information and technology, and their products and services are regarded as close substitutes by the customers. Hence, it can be argued that the diversity of organizational models in the Nordic banking markets is to a high extent determined by the contingencies originating from the management *per se*, and the managerial routines sustained in the corporate culture (cf. Nelson and Winter, 1982). The managerial contingencies imply that the top management of the bank interprets and responds to the contingencies (signals) of the business environment differently, and thereby may pursue differentiated strategies with respect to service productivity. Reflective of this view Yilidrim (2005) notes that the organizational model of a bank has to account for the contrasting requirements of *efficiency* and *flexibility*.

5.1.2 Two Nordic banks in focus

To facilitate the interpretations of the results of the empirical case study, this section makes short overview of the main characteristics of the Finnish universal banking industry and the historical milestones of case banks, Nordea and Svenska Handelsbanken. A more detailed characterization of the competitive environment of the Finnish banking industry is made in Appendix 2. In response to the pro-competitive policies within the EU, the European commercial banks have adopted strategies aimed at improving efficiency, expand output and increase the range of services offered (cf. Goddard et al., 2001; Barras, 1990). As in the Nordic countries and Finland, such a development is accompanied by the consolidation of the banking industry through mergers and acquisitions. The business traditions of the 'Finnish commercial banking industry', which go back to the 19th century, are carried predominantly by the ´big three', consisting of Nordea, OP-Pohjola Group and Sampo Bank. They held

a market share of three quarters of the total loans and savings in 2009[4]. Svenska Handelsbanken, which is a 'late-comer' in the Finnish financial markets, is the fourth biggest universal bank and poses a competitive challenge to the big three and the smaller locally focused savings banks and co-operatives. With the exception of OP Pohjola Group, the strategic focus of these four biggest universal banks is not confined to the Finnish markets only. The principal 'home markets' of Nordea, Svenska Handelsbanken as well as Sampo Bank, which is the Finnish subsidiary of Danske Bank is the Nordic countries. The Nordic financial market is geographically and culturally coherent and shows also distinct pattern of demand for the financial products and services. With respect to the value of the total assets, the biggest banks in the Nordic markets are Danske Bank (€ 476 billion), Nordea (€ 474 billion), SEB[5] (€ 231 billion), and Svenska Handelsbanken (€ 199 billion)[6].

Table 3. Facts and figures of the case banks in 2008 (Federation of Finnish Financial Services, 2009).

Company	Svenska Handelsbanken	Nordea
The year of foundation	1871	2000
Type	Public	Public
Industry	Universal banking	Universal banking
Headquarters	Stockholm Sweden	Stockholm Sweden
Total revenue	€ 3 109 million	€ 8 200 million
Operating profit	€ 1 594 million	€ 3 396 million
Total assets	€ 198,6 billion	€ 474,1 billion
Return on equity %	16,2	15,3
Cost-income ratio % (Finland)	44 54	53 34
Number of branches (Finland)	706 45	1400 345
Number of employees (Finland)	10 830 668	34 008 10499

Regardless of the marked homogeneity and the maturity of the Nordic financial markets, the production of banking services and products shows firms-specific differences in the business models. The choice of Nordea and Svenska Handelsbanken for this case study was reinforced by the preliminary information on the differing characteristics of these two banking groups. Nordea's constituent part in Finland (Nordea Finland) is considered as the leading and historically, the most successful commercial

[4] Source: Federation of Finnish Financial Services, 2009.
[5] SEB = Skandinaviska Enskilda Banken.
[6] The figures are from the year 2008.

bank with a well-established customer base in the corporate segment. Nordea has been deeply involved in the restructuring of the Nordic banking industry and it represents the *traditional* or *conservative* way of conducting and developing banking businesses. Svenska Handelsbanken instead, has largely remained intact in the restructuring of the Nordic banking industry. Svenska Handelsbanken has been committed to a *radically different business* model that was introduced in the early 1970's. In the light of economic figures, shown in Table 3, *both banking groups show a distinct competitiveness in the Finnish and the Nordic markets* (see also Section 5.2.5).

The distinct characteristics of the case banks are further reflected by their past development. Founded in 1871, *Svenska Handelsbanken* is among the oldest and the most successful of the Swedish commercial banks. After the phase of a vigorous expansion in the increasingly consolidated Swedish financial markets in the 1960s, Svenska Handelsbanken ran into a severe economic crisis in 1969. The management resigned and in the early 1970 Jan Wallander, a former professor of economics at the University of Stockholm was recruited from a provincial Sundsvallsbanken. He was appointed as a new CEO of Svenska Handelsbanken in 1971. Wallander introduced 'the new business ideas', which Sundsvallsbanken already had started to implement (Svenska Handelsbanken, 2009). A radical decision was made to *decentralise* the hierarchically structured organisation which at that time was the dominant model within the banking industry (Wallander, 2002). The principal idea behind the decentralization was to cut down 'unproductive bureaucracy' of the headquarters to the minimum, increase the cost transparency of the remaining centralized functions, and to bring the authority, supporting activities as well as the production of the banking services closer to the customer interface (Wallander, 2002).

Svenska Handelsbanken's expansion abroad started at beginning the 1980s as new branch offices and subsidiaries were built up in London, New York and Singapore. Swedish currency regulations were abolished in 1989, and two years earlier it became possible for the Swedish banks to open branches abroad (Svenska Handelsbanken, 2008). This led to an increased internationalisation of the Swedish banking industry. In the same year, Svenska Handelsbanken's branch in London was complemented with a representative office in Manchester[7]. During the extended boom in the 1980s bank lending in Sweden and other Nordic countries was growing exceptionally fast, and a substantial proportion of the loans went to speculative investments. The overheating of the financial markets and the recession led to

[7] The expansion in the UK peaked in 2004-2006 when five new branches were established.

a serious crisis in the Swedish banking sector in the autumn 1990. While the cost of the government support of the banking sector was substantial (SEK 66 billion), Svenska Handelsbanken was the only major Swedish bank that did not apply for the state guarantee. The bank was able to utilize the situation and enhanced its competitive position in Sweden and in the other Nordic countries.

A representative office was opened in Helsinki in 1985, and the Finnish subsidiary started five years later. The start of the Finnish branch operations in 1991 was followed by the opening of the first street-level branch in 1994. In the following year, Svenska Handelsbanken acquired the healthy parts of Skopbank and opened new branch offices in several cities in Finland. Through these moves Svenska Handelsbanken became the fourth largest universal bank in Finland (Svenska Handelsbanken, 2008). The expansion in Finland was part of the 'Nordic offensive', where the idea was to *replicate* the Swedish model in the other Nordic countries. The bank's expansion in the Norwegian markets was based on organic growth and the acquisition of Stavanger Bank in 1991. The first branch in Denmark was opened in 1996 and through the acquisition of Midtbank in 2001 Handelsbanken became the fifth largest bank in Denmark (Svenska Handelsbanken, 2008)[8]. Based on the organizational model that was first introduced in the Swedish markets, the branches in each Nordic countries and the UK are supervised and facilitated by the region bank having the overall business responsibility for the respective national markets[9].

In deviation to the organic growth that characterizes the overall development of Svenska Handelsbanken, the evolutionary process that led to the formation of *Nordea* at the beginning of the 2000 was driven by series of acquisitions and mergers that changed fundamentally the identity of the resulting company. In a longer perspective, some 250 banks including government-owned banks have been incorporated in Nordea over the 150 years of the bank's history. The strengthened role of the European Community in the 1970s led to an increased consolidation in the Nordic banking industry well. Hence, mergers by the major players resulted in more powerful nationally operating banks with more capacity to compete against the international rivals which were entering their domestic (Nordic)

[8] The integration of the financial services and insurance services intensified in the 1990s. As pension savings represented an increasing share of the long-term savings of the bank's customers, Svenska Handelsbanken acquired the mutual life insurance company RKA in 1992. The name of the company was changed to Handelsbanken Liv in connection with the purchase. In March 2001, Svenska Handelsbanken acquired the life insurance company SPP. With this purchase Svenska Handelsbanken became the second largest player in the Swedish life insurance market (Svenska Handelsbanken, 2008).

[9] In January 2008 another regional head office started up in Manchester. It holds the business responsibility for the branches in the Northern UK.

markets. The consolidation created *Nordbanken*, *Unidanmark*, *Merita*, and *Christiania Bank og Kreditkasse,* which came to be the constituent parts of the first pan-Scandinavian bank, Nordea (FundingUniverse, 2009).

In 1999 Unidanmark was the next largest financial services provider in Denmark. The group's banking division Unibank had 1.7 million retail customers and 365 branches. The group's insurance business, Tryg-Baltica was the largest provider of insurances in Denmark and the second largest in Norway[10] (Nordea, 2009). In Norway, Christiania Bank og Kreditkasse had grown through mergers with Andresens Bank in 1980 and Fiskernes Bank in 1983. Hit hard by the recession of the early 1990s, Christiania bank was rescued by the Norwegian government, which became the bank's sole shareholder. At the end of the 1990s Christiania Bank og Kreditkasse had total assets of NOK 236 billion, and an extensive distribution network (Nordea, 2009). *Merita Bank* was formed in 1995 when Kansallis-Osake-Pankki (KOP) merged with Unitas Ltd, the parent company of Union Bank of Finland (SYP), and the operations of the two banks were integrated. Merita bank was the leading financial services group in Finland and with the total assets of FIM 280 billion it was one of the largest players in the Nordic region as well[11] (Nordea, 2009). *Nordbanken* in Sweden was also severely hit by the financial crisis at the beginning of the 1990s. Followed by a successful reconstruction, Nordbanken took over Göta Bank in 1993. In 1995 Nordbanken took a public listing again and its position among the five nationwide banks in Sweden (Nordea, 2009).

The process towards the creation of Nordea accelerated in 1997 by the merger between Merita Bank and Nordbanken, which formed MeritaNordbanken. When Unidanmark merged with MeritaNordbanken in March 2000, the resulting new company took on a broader name of Nordic Baltic Holding which controlled the brands of Nordbanken, Merita, and Unibank. At the end of December 2000, Christiania Bank og Kredietklasse became a part of the leading financial services company in Scandinavia. By the time Christiania was included, Nordic Baltic Holding chose a new name for itself. The new name Nordea originates from the words 'Nordic' and 'idea', suggesting the bank's objective to extend its operations globally beyond the Scandinavian home base (FundingUniverse, 2009). While

[10] Unibank was formed in 1990 through a merger between Andelsbanken, SDS and Privatbanken.
[11] Facilitated by its strong foothold in the corporate banking, Merita Bank had extensive international operations. Merita Bank was one of the pioneers in electronic banking services in Finland and continued to occupy the leading position in this area.

Nordea continued its businesses under its national brands, the company decided to further integrate its operations to create a single, pan-Scandinavian brand. The merger of the four national banks created a strong rationale for a profound reorganization of the corporation, which implied the *centralization* of the banking activities and the divestments of unrelated activities. The rationalization in the post-merger era is reflected by the evolving strategic focus of the bank. This is depicted in Figure 27.

At the outset in 2000, when the corporation was a loose federation of local banks with different business practices and processes, the strategy was aimed at creating stability through a lower variation in profitability and shared business culture over the regions. The focus on the core businesses implied higher coherence, more straightforward and faster processes and innovation (time-to-market). In few years the focus in strategy shifted to profitability and growth, and thereafter to profitable organic growth. This was manifested in more ambitious objectives of growth via increased sales to the existing customers and geographic expansion in the Eastern Europe and Russia.

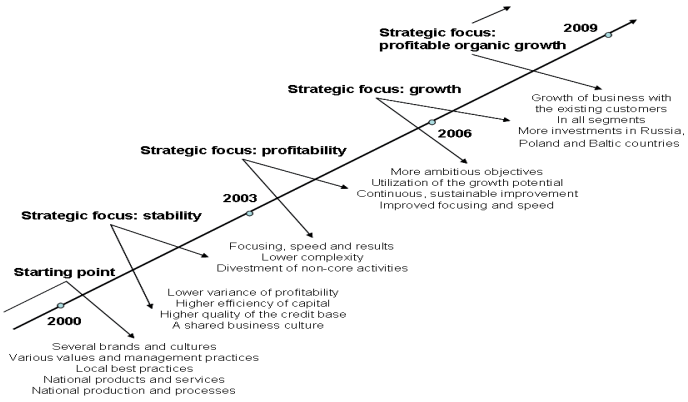

Figure 27. The evolving strategic focus of Nordea Group (Nordea, 2008, unpublished material).

5.2 Conduct of the empirical study

This section describes the methods and the data used in the empirical study of the thesis. To highlight their main characteristics, the methods and data are specified in the light of the alternative ways of conducting case studies, company interviews and the analysis of the qualitative data. On aggregate, the

empirical analysis of the thesis conforms to the characterization of qualitative research by Creswell (2007). The researcher is the key instrument (Gummesson, 2000; 2006) and uses multiple sources of data. The data analysis follows a 'bottom-up' approach, where data is organized into increasingly abstract units of information. Participants' (the interviewees) meaning of the issue is regarded central and allows *interpretation* which is as objective as possible (Gummesson, 2006). The qualitative research is emergent in the sense that the initial plan for research cannot be tightly prescribed and the researcher views the issue through specific lenses. Within the context here, the lenses are 'organizational' (Williamson, 2003). A qualitative researcher tries to address the complexity of the issue from a *holistic* perspective, which in the case of this thesis implies multidisciplinary analysis and the unification of industry and company perspectives. Finally, qualitative research enables valid generalization even from few cases (see below). Gummesson (2000) and Normann (1970) note that the possibility to generalize from few cases is founded on the comprehensiveness of the measurement. This makes it possible to reach a fundamental understanding of the structure, process and driving forces rather than a superficial establishment of correlation or cause-effect relationship[12].

5.2.1 The characteristics of the industry case study

In regard of the various strategies of qualitative research (Creswell, 2003; 2007) the empirical part of the thesis is an archetype of *case studies*[13]. Of the various attributes of the case studies, *the description here focuses on the aspects which are relevant for the conduct of the case study of the banking industry*. In general, case study is a research strategy which focuses on understanding the dynamics present within single settings (Eisenhardt, 1989). Creswell (2007) postulates that case study research is a qualitative approach in which investigator explores a bounded system (a case) or multiple bounded system (cases) over time, through detailed, in-depth data collection involving multiple sources of information. The combined data collection in this thesis includes archives, interviews, and observations. In general, a case study has three purposes: the *description of the industry*, *theory testing* and the *generation (qualification) of the theory*[14] (Eisenhardt, 1989). In this thesis these principles – particularly the latter two - are used adaptively as the main purpose of the case study is *theory*

[12] More detailed aspects of generalization and abstractions from the industry data are provided in the context of reporting the empirical findings (see Section 5).
[13] The other four strategies are narratives, phenomenologies, ethnographies and grounded theory (see Creswell, 2007). In this thesis narratives are used mainly in reporting the results of the interviews (see below).
[14] This parallels with the classification of descriptive, explanatory and exploratory case studies by Yin (1994).

application and illustration. The purpose of the case study determines the number of cases studied. A singular or intrinsic case study is undertaken to get a better understanding of the particular case, whereas a multiple or instrumental case study, which is the primary mode in this thesis, provides insight into the issue, and facilitates generalizations. In this setting the cases are of secondary interest. The cases play a supportive role as they facilitate our understanding of something else (Denzin and Lincoln, 2005). The cases studied may be similar or dissimilar. The case banks chosen for this study are highly dissimilar, as it is expected that understanding them will lead to better understanding and better theorizing about still larger collection of cases.

The methodological approaches are associated with the parallel methods of selecting the cases i.e. *sampling*. The method applied in this case study is *theoretical sampling*. This implies that cases are selected, as they are particularly suitable for illuminating and extending relationship and logic among the constructs of the theory (Eisenhardt and Grabner, 2007). A particularly useful in this regard is finding 'polar types' through a sample of extreme cases (e.g. very high and very low performing), which enables observe the contrasting patterns in the data. It is put forward here that this sampling method leads to clear pattern recognition of the central constructs, relationships, and the logic of the focal phenomenon (Eisenhardt, 1989). In particular, it makes sense to choose 'polar cases' if the number of potential cases is limited. In an ideal situation an inductive theory construction and deductive theory testing enable *generalization* based on in-depth investigations of specific mechanisms observed in a limited number of cases (Gummesson, 2000)[15]. This parallels to what Yin (1994) and Smaling (2003) call *analytic generalization*[16]. In deviation to statistical generalization from a representative sample of a larger population, analytic generalization aims to generalize from one case (the bank and their managers) to other cases (replication) that belong to the scope of the theory involved (Smaling, 2003). Whilst each case (an interviewed banking executive) within multiple-case design can incrementally increase the ability of the researchers to generalize their findings (Rubin,

[15] *The possibilities for robust theory testing and theory construction on the basis of the empirical material utilized in this thesis are however, relatively limited.*

[16] The replication logic of Yin (2002; 1994) entails that the researcher selects not only cases where one might expect that results obtained in a previously conducted study are repeated and thus affirmed, but also cases where one might expect the research results to contradict the previously affirmed substantive hypothesis. This way, subsequent case studies enable the researcher to test — to affirm and to falsify — repeatedly conjectures and hypotheses, and to adjust them and thereby develop them into a theory. The theory that is ultimately formulated must then become the vehicle for generalizing analytically to other cases that have not been studied. Smaling (2003) calls this also *theoretical generalization* or *theory-carried generalization*.

1995; Kvale, 1996), researchers should stop adding cases when theoretical saturation is reached[17] (Eisenhardt, 1989). Accordingly, in the context of the thesis with two polar cases (two banks) and a limited number of sub-cases (the interviewed executives), the empirical data enable analytic generalizations on the examined specific characteristics in the cases (banks) and in the other cases (the universal banking industry).

At the *industry* level (Section 5.3), the research represents a singular case study of the Finnish universal banking industry. The choice of the banking industry for the object of empirical research was facilitated by the prior observation that universal banking firms may implement goods-dominant logic and service-dominant logic (Vargo and Lusch, 2008) in their service businesses. This would enable generalizations in other 'service-oriented businesses'. At the *company* level (Section 5.4) the empirical research is a *comparative* case study of the two Nordic banking corporations, Svenska Handelsbanken and Nordea, and their business activities located in Finland. Whilst the choice of these particular banks was facilitated by the prior information on their differing business models, the picture of 'two polar cases' became strengthened in the course of the case study. The observed inter-bank differences were codified descriptively. The verification of the inter-bank differences and similarities drew also on the managerial perspectives (*personal level*) to banking productivity and competitive advantage in the examined case banks. The examination of 6 cases (executives) enabled analytic generalization on the productive regimes of the two banking corporations (See Appendix 3).

5.2.2 Organizing company interviews

The main source of the empirical data in the thesis is company interviews. As with the discussion on the case studies, *the description of the interviews here focuses on the features that are relevant for the conduct of the case study of the universal banking industry.* As noted by Denzin and Lincoln (2005) and Kvale (1996), case studies are more valid (accurate, convincing) and rich if they are based on several sources of empirical data, that is *triangulation*[18]. In the thesis triangulation involves the utilization of *existing* qualitative and quantitative data and the data *produced* primarily through observations and company interviews. In general, *interviews* consist of talk organized into a series of

[17] This is the point at which incremental learning vanishes because the researchers are observing phenomena seen before.
[18] Originally triangulation means that there are several types of data that can confirm the research results (Denzin, 1970).

questions and answers. Usually the interviewers talk first and ask questions, and interviewees talk second and provide answers. In many situations qualitative interviews resemble everyday *conversation* where the distinction between the interviewer and the interviewee is not clear-cut. Silverman (2010) makes the distinction between *positivist, emotionalist and constructionist interviews* (see below).

The research of a positivist approach is interested in facts, which implies that the interview is most often structured and standardized. In structured interviews the interviewer asks all respondents the same series of re-established questions with a limited set of response categories (Denzin and Lincoln, 2005). Emotionalist or subjectivist approach to interviews considers interviews as a pathway to the participants' authentic experiences directing the focus on the participants' perceptions, conceptions, understanding, viewpoints and emotions (Eriksson and Kovalainen, 2008). Relatedly, constructionist interviews examine how meanings are produced through the interaction that takes place between the interviewer and the interviewee. In deviation to the 'pure' positivist approach, constructivist and emotionalist approaches are usually based on semi-structured and unstructured informal interviews with open ended questions[19]. Compared to structured interviews, unstructured interviewing provides greater insight and breadth on the investigated issue and allows the interviewer to improvise and exercise independent judgement (Denzin and Lincoln, 2005). As noted by Rubin et al. (1995) and Arksey et al. (1999), many qualitative interviews conducted in business research are semi-structured. Semi-structured interviews can be used to study 'what' and 'how' questions as they combine pre-prepared outline of topics and themes with the possibility to vary the wording and order of questions in each interview. The major advantage is that the materials are somewhat systematic and comprehensive, while the tone of the interview is fairly conversational and informal. Eventually, the choice of the appropriate approach is subject to the trade-off between the advantages of telling of good stories versus the creation of a good construct (Dyer and Wilkins 1991).

Owing to the lack of earlier comparable studies and the need to collect in-depth information on the industry and the respective banks, a decision was made to conduct the interviews individually face-to-face. Hence, it seemed appropriate to apply *guided semi-structured interviews based on thematic and open-ended questions*. The typology of interviews by Silverman (2010) was implemented at different

[19] In contrast to closed questions, open-ended questions give the participant more control over what is talked about and usually produce more retailed responses.

levels of inquiry. At the industry[20] and company levels, the interviews combined positivist and emotionalist approaches. The objective was to discover 'stylized facts' of the business environment of the banking industry and the case companies, the external determinants of productivity and competitiveness as well as the key characteristics of banks' organization. The emotionalist approach was used to find practical explanations for the industry and company facts and the determinants of banks' competitive advantage. At the personal or subjective level, the interviews implemented emotionalist and constructionist approaches to discover the managerial interpretations of service productivity and the competitive advantage of the respective banks[21].

Table 4. The interviewed banking executives and their positions in the two case banks[22].

The interviewee	Position	The field of business responsibility
SHB Manager A	Head of a branch	Business operations of a branch
SHB Manager B	Head of a branch	Business operations of a branch
SHB Manager C	Business manger	Business liability for specific branches
SHB Manager D	Business manger	Business liability for banking products
NOR Manager A	Head of a district bank	Business operations of a district bank
NOR Manager B	Head of CMB	Business operations of CMB Finland
NOR Manager C	Head of a region bank	Business operations of a regional bank
NOR Manager D	Head of corporate IT	Operation of the corporate IT systems

The *eight* banking executives that were interviewed in the case study are listed in Table 4. The executives hold business responsibility at various hierarchical and operative levels in the Finnish subsidiaries of Nordea and Svenska Handelsbanken. In the design of size of the sample of the interviewees, the most critical question was whether and when a sample is representative enough to allow corporate wide generalization. The deduction that generalizations are enabled on the basis of the chosen size and the composition of the sample can be founded on several considerations. *First*, the process of the selection of the interviewees was *random* enough to guarantee that the subjective views of the executives are mutually independent. *Second*, the interviewees are highly knowledgeable informants who view the examined phenomenon from different but complementary perspectives

[20] The industry data were collected in the interviews of the banking executives and the staff of the Federation of Finnish Financial Services.
[21] As a consequence, a clear-cut distinction between 'objective facts' and the participant's subjective views (artefacts) was occasionally hard to make.
[22] SHB = Svenska Handelsbanken, NOR= Nordea, CMB = Corporate Merchant Banking.

(Eisenhardt and Graebner, 2007). This delimits the probability of convergent retrospective sense-making (Eisenhardt, 1989). *Third*, the positions and the duties of the interviewees in the two banking corporations are critical for the competitiveness of the banks. They represent the hierarchical levels, where the operative decisions on banking productivity and competitiveness are actually made. On balance, given the unified corporate strategy of the banks that is implemented systematically in all constituent regions and countries, the experience and the subjective views on productivity of the individual managers were considered to reflect 'the broader managerial perceptions' of how successful banking business is conducted.

The company interviews were conducted between November 2007 and June 2008. The interviews were first recorded electronically and then transcribed manually into unedited text, which totalled up more than 200 sheets (A4) of printed primary data. The interviews of the eight executives were organized separately in two or three subsequent sessions with an average duration of 2 hours for each[23]. Subsequent to the *first sessions,* where the focus was geared to the common and predetermined themes, the *supplementary sessions* were arranged for each interviewee. The supplementary sessions focused on the specific issues in the list of the topics and 'new topics', which were raised by the interviewees or the interviewer in the first set of sessions. In each of the eight cases (interviewees), supplementary sessions were required to have a better coverage of and appropriate depth of answers. Invariably, the 'new topics' mostly dealing with the banking processes and organization showed high relevance for the productivity and competitiveness of the examined bank and the banking industry. This demonstrates the high importance of the mutual learning for the effectiveness of generating relevant information. As the knowledge on the critical dimensions of service productivity and competitiveness improved in the conduct of the interviews, the list of topics and questions were updated, respectively. Prior to each session, the list of topics was sent electronically to the interviewees.

The 'updated' list of topics of the company interviews is presented in Appendix 1. The first round interviews started with the presentation of the goals of the study by the interviewer, and the background questions on the interviewees and the respective business units of the bank. The aim of the first set of questions titled as *The characteristics of banking business,* was to provide generic information on the industry structure, competition and technology. They highlight the framework conditions of the

[23] All interviews were arranged at the offices of the respective banking executives.

banking productivity and competitiveness as well as the bank-specific information of its service businesses. This includes the 'internal organization' of the business activities and the outline of the 'service strategy' at the corporate level. The second set of questions titled as *Service productivity and its measurement* had three areas of specific interest, a) the principles of assessing bank's economic success, b) the importance of service productivity and c) the challenges of measuring service productivity. In the conduct of the first round interviews, it became soon obvious that short, unambiguous and comparable answers to the standardized questions on productivity were difficult to attain. Moreover, the term 'productivity' turned out to be vague and relatively uncommon concept at the operative management of the case banks. On the other hand, the discussions showed *indirectly* that 'productivity' is considered to have a high importance in both banks. Hence, the issue had to be approached with related concepts that are more familiar to the business managers. The objective here became to encourage the managers to provide their subjective perceptions (interpretations) on banking productivity and business performance, which could then be interpreted within the theoretical framework (the value creation approach) of the thesis. The questions of service productivity and its measurement were followed by the third set of questions titled as *Productivity growth and innovation*. The purpose here was to highlight organization, the means, and possible obstacles of service innovation, which influences the productivity of the banking processes. The fourth set of questions characterizes *Service technology*, which aimed to provide more detailed information on the technological determinants of scale-efficiency and effectiveness of the banking processes and the service offering.

5.2.3 The quality and the analysis of the data

In the conduct of first round interviews, it turned out that the expertise of the interviewees was in most cases centred on specific areas in the list of topics. To account for these differences the interviews in each of the eight cases (interviewees) were conducted with differing emphasis given to the themes of interest. Another challenge was making the correct distinction between the 'facts' and 'interviewee's subjective perceptions on the discussed themes. In most cases and issues the problems could be managed, as the reliability and the correct interpretation of the responses could be verified in the second round interviews and through the complementary sources of data. In the triangulation of the methodologies and the data, the case study utilized multiple sources of qualitative and quantitative data.

They include company websites, annual reports of the banking corporations, the statistics available from Federation of Finnish Financial Services, the printed books, unpublished documents received in the interviews, as well as the earlier studies on banking productivity and performance. A notable contribution to the empirical analysis was the quantitative data of the customer satisfaction surveys on the Finnish universal banking industry. This is collected by EPSI Rating[24].

Moreover, while some of the questions were not answered explicitly by the respondents, in many cases the issues became implicitly clarified in other contexts of the interviews. Characteristic of the interviews was the tendency by the interviewees to move randomly back and forth in the list of topics. This required an alert guidance of the conversations by the interviewer. A particular attention was given to the topics concerning the measurement of the bank's performance and the interviewees' subjective perceptions on banking productivity. Keeping these two issues as *separated* as possible, enhanced the validity of the responses and enabled the consequent interpretations within the value creation approach. In regard of the managerial 'views' on banking productivity, the inter-bank and intra-bank similarity of the answers was of higher interest than the distinction between the facts and the perceptions.

On aggregate, *six out of the eight interviewed executives* were able to provide interpretable response on banking productivity. These responses were used in further analysis of *narratives*. In general, the observation that the managerial views in case of Svenska Handelsbanken showed higher similarity was considered to reflect the stark, branch-centred business culture, and the 'recruiting norm'. To be qualified, the higher executives need to have some working experience as a branch manager in Svenska Handelsbanken. It can be assumed that the higher diversity of the managerial views in Nordea's case is influenced by the hierarchical and the specialized administration as well as the differing working backgrounds of the bank's executives. In summary, while Nordea's executives tend to view 'the same type of productivity′ (scale-efficiency) from different and complementary organizational perspectives,

[24] Federation of Finnish Financial Services is a trade body that represents companies operating in the financial industry in Finland. EPSI Rating (Extended Performance Satisfaction Index) is a system to collect, analyse and disseminate information about image, preferences and perceived quality as well as loyalty of customers and other stakeholders to commercial entities and other organisations. The work of EPSI national and international benchmark studies is coordinated by EPSI Research Services registered in UK. The actual work with the collection and presentation of customers' and other stakeholders' insight is handled through a network of national platforms.

the executives of Svenska Handelsbanken tend to have a 'shared view on productivity' (effectiveness and cost-efficiency) based on the unified organizational perspective[25].

In support of the identification of the productive regimes of the case banks, specific *narrative* techniques were used in the analysis of the 'managerial views' of banking productivity. As much of the primary data in the interviews consists of recorded *narratives*, it is useful to view shortly the main aspects of narrative methodology. Narratives and storytelling represent one of the five strategies in qualitative research (Creswell, 2003; 2007). In its original meaning, narrative research is a form of inquiry in which the researcher studies the *lives of individuals* and asks one or more individuals to provide stories about their lives. This information is then retold or restoried by the researcher into a narrative chronology (Creswell, 2003). The key driver of doing narrative research is the belief that people are storytellers. Telling and sharing stories help us understand ourselves and connect each other (Eriksson and Kovalainen, 2008). In case studies the case representatives are asked to tell their own stories (Denzin and Lincoln, 2005), and the researcher needs to decide what the case's own story is, or what will be included in the report. Narratives can also be used as a form of reporting, where the research report presents a detailed narrative of the actual and realistic events in their context (Kvale, 1996). A methodological distinction is made between the *analysis of narratives* and *the narrative analysis* (Denzin and Lincoln (2005). The focus in the latter is the narrative as a mode of analysis. The researcher organizes and interprets empirical data that describes more or less consistent events, happenings and actions in a way that they construct on one or more narratives. In the former, the researcher collects the stories of people, and then uses some techniques to analyse their plots, narrative structures, or story types. For the thematic analysis of the primary data, the original narratives are 'restoried' into a more comprehensive framework to identify possible patterns of the focal issue (Kvale, 1996).

Of the two narrative techniques, the processing of the managerial views of banking productivity is predominantly based on the analysis or the narratives. In the company interviews the banking executives were asked to tell their subjective definitions (stories) on service productivity in the context

[25] One of the interviewed executives in Svenska Handelsbanken failed to define banking productivity. Furthermore, the interviewed head of the corporate IT in Nordea equalled banking productivity with the number of financial transactions per unit of time. This could be boosted with the investments in the ICT capital. Such a definition is highly context-specific and thus less comparable to the qualified six answers.

of banking businesses they are responsible for. The analysis of the narratives for each case was conducted by picking up specific sentences and expressions that could be used as proxies for the interpretation of service productivity in terms of its components, effectiveness and scale-efficiency. The analysis was composed of three phases, 1) the decomposition of the stories, 2) the restorying of the subjective views on productivity and 3) the interpretation of the views within the theoretical framework of the value creation approach. The six restoried narratives are presented in Appendix 3. The reliability and validity of the narratives was controlled through the repetition of the key questions and addressing complementary aspect of service productivity in the supplementary sessions. They focused on the factors that highlight the relative importance of scale-efficiency and effectiveness, such as the characteristics of service quality, corporate governance and sales processes. On balance, the narratives provided reliable and valid data for the outline of the productive regimes in the case banks.

5.3 Technology, productivity and value creation in universal banking

In general, the characteristics of the service technology and the measurement of the productive performance in the banking business highlight the diversity of the financial and operative goals of a banking firm. The focus in this section is geared to the research question*, what kinds of specifications and alternative approaches can be found in the goals, technology and productivity, when the synthesized (descriptive) framework is applied in the universal banking industry?* (see Section 1.2). The central issues are whether and how productivity matters in universal banking, and how the characteristics of banking technology and the established methods of evaluating banking performance within the industry and the affiliated economic research illustrate the arguments of the descriptive value creation approach (VCA). Section 5.3 is constructed as follows. The main attributes of the universal banking industry are discussed in Section 5.3.1. This is followed by the discussion of the technological characteristics of the banking production and delivery in Section 5.3.2. Thereafter the focus is shifted to the main implications of the applied economic studies on banking productivity in Section 5.3.3, and the managerial practises in measuring the productive performance of a bank in Section 5.3.4. These approaches are augmented in Section 5.3.5 with the methods of measuring customer's productivity and satisfaction in the universal banking industry. The Porterian perspectives to the Finnish universal banking industry in Appendix 2 provide supplementary evidence on banking technology, productivity and competitive advantage.

5.3.1 The main attributes of the universal banking industry

In the common language, banking, the finance industry and the services they provide are often used interchangeably[26]. The term financial services, refers to the 'aggregate output' of the finance industry, under which banks perform a number of intermediary and advisory business activities. According to Oxford Dictionary of Finance and Banking (Smullen and Hand, 2005, p. 30), a bank "is a commercial institution that takes deposits and extends loans. Banks are concerned mainly with making and receiving payments on behalf of their customers, accepting deposits and making short term-loans to private individuals, companies and other organizations. However, they provide money transmission services and in recent years have diversified into many areas of financial services". For the businesses activities conducted by profit-seeking banking enterprises, the main distinction is made between *retail* banking, *commercial* banking and *investment* banking. Retail banking deals directly with households and small businesses, while commercial banking provides standard banking services *also* with the medium size and large corporations. A distinct form of retail banking is *private* banking, which provides wealth management services to high net worth individuals. Investment banking in contrast, is related to the activities in the capital markets. Investment bank is a financial institution that deals with raising capital, trading in securities and managing corporate mergers and acquisitions (Smullen and Hand, 2005). Unlike retail and commercial banks, investment banks have traditionally committed little of their own capital to the firms for which they have arranged financing. Nor have investment banks routinely engaged in active, ongoing monitoring of their client firms. Nevertheless, as with the commercial banks (and retail banks), the investment bank's central role is the production and dissemination of information between the lenders and borrowers (Morrison and Wilhelm, 2006).

On aggregate, when the bank is engaged in retail banking, commercial banking, private banking and investment banking at the same time, it is positioned in an industry called *universal banking*. Universality implies a generic strategy of diversification, where the bank operates in all customer segments. It offers a full range of banking services and products, which are accessible anywhere in a specific geographic market. The universal accessibility implies that the banking services are delivered through a geographically decentralized branch network, which is complemented by the computerized

[26] Actually, the finance industry encompasses a broad range of organizations that deal with the borrowing and lending of money (intermediation), execution of financial transactions and risk management. These organizations include privately owned banks, credit card companies, insurance companies, consumer finance companies, stock brokerages, investment funds and some government sponsored financial intermediaries.

channelling of banking services (ATM[27] and online banking). In the UK, the term *branch banking* bears thus a close equivalence with business idea of retail and universal banking[28]. In practise, the universality of a bank with respect to the customer segments, the product-service portfolio and the geographic presence is a matter of degree and hence dependent on the corporate strategy of the bank. The scope of universal banking can be illustrated with the *dimensionalization* of corporate banking (cf. De Laurentis, 2005). Corporate banking is the provision of banking products and services in the corporate segment, where the needs are often universal with respect to the scope of services and the geographic locations. In Figure 28 corporate banking is located at the intersection of three dimensions, (1) the type and size of the customer (segment), (2) the tangibility of the offering, and (3) the degree of customer orientation. Hence, from the corporate banking perspective, universal banking involves six categories of banking activities, which are combined by the dotted circle in Figure 28.

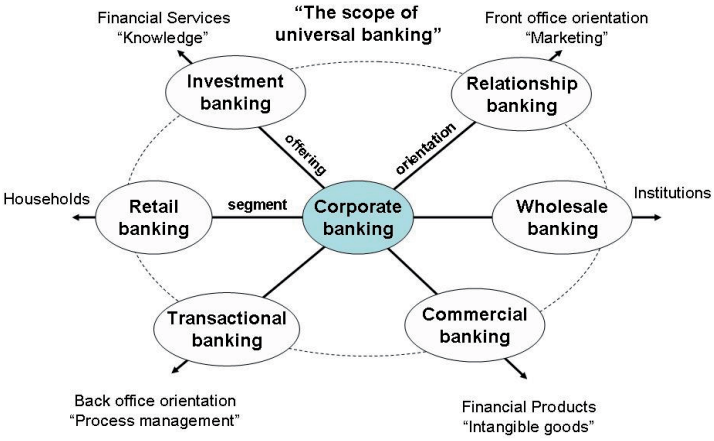

Figure 28. Corporate banking as a nexus of universal banking activities.

The *segment* dimension makes the distinction between retail banking focused on households and entrepreneurs and wholesale banking, which is mainly concerned with the financial services (loans) to

[27] An automated teller machine (ATM) is a computerized telecommunications device that provides the customers of a financial institution with the access to financial transactions in a public space without the need for a human clerk or bank teller.

[28] De Laurentis (2005) notes instructively that the bank has always been a 'divided' firm, in which the business and management of corporate processes are characterized by a certain share of territorial decentralization. In fact, despite the attempt to disconnect production from distribution phases, the bank continues to provide service rather than products. As a result, a large section of 'production' is decentralized and requires a strong interaction with clients.

other banks and institutional customers e.g. in the public sector. The *offering* of a bank may be an advisory service or knowledge; the typical output of investment banking, or a more tangible financial product delivered in commercial banking. Parrinello (2004) for instance, regards a financial product as an immaterial or intangible good. The third dimension identified by De Laurentis (2005) measures the degree of *customer orientation*, i.e. balancing between the back-office and the front-office operations. In contrast with transactional banking and processing, where the activities utilize economies of scale and scope (mass-production), relationship banking is concerned with the maintenance of customer relationships (partnership) through face-to-face interaction with the client and through individual problem solving.

While the official statistics treat banking businesses as a distinct service industry[29], the classification gives no indication what these services are. The offering, which a bank produces and the customer buys in differing *packaged* forms (Parrinello, 2004) may involve e.g. advisory services (consulting), the payment (cash management) system, the execution of transactions on behalf of the customer, or more traditionally, bearing risks in the granted loans and accepting deposits. In the professional terminology these offerings are called interchangeably financial services and products. In most cases the financial offerings are produce d and delivered with the information and communication technology, which is usually an inseparable part of the offering itself. ICT costs, which constitute the second largest cost category in the banking business[30], are charged from the customer via the prices of the products and services the customer buys. Along with the priced goods and services, there exists non-priced service (advisory) function at the customer interface (customer service), which is to facilitate sales and transactions with the customer[31]. Hence, it is essential to make the distinction between the *financial services* (offering) which is the object of transaction and the *customer service*, which enhances sales and customer loyalty[32].

Based on the established classification used within the universal banking industry, the financial products and services are divided into *four* interrelated categories called product lines (Nordea, 2008)

[29] In Standard Industrial Classification (SITC) 2008, universal banking industry belongs to a category of *other monetary intermediation* (64190), which is part of a more aggregated sector: *financial service activities, except insurance and pension funding* (64).

[30] The biggest cost category is the labour costs.

[31] Actually, customer service provided by a teller and a sales officer is also priced, but only residually, as the wage of the sales officer is included in the margin the bank generates from the sales to the customer.

[32] This distinction is usually obscured by the banking professionals as well.

or business areas (Svenska Handelsbanken, 2008)[33]. *Account products* develop and provide the facilities for the traditional financial intermediation involving loans and deposits for any kinds of customers and needs. The provision of trade financing and project financing for corporations, as well as unsecured consumptions loans are based on the same principles. Within the limits of banking regulation on solvency, the deposits involving the savings of households in the equity funds and pension insurance funds constitute a financial reserve (stock) available for the external lending by the bank. In the account products, the primary source of profit for the a bank is the interest margin, the differential between the interest income generated from the grated loans, and the interest costs the bank incurs for keeping the deposits and other sources of purchased funds.

Cash management products and services are used for planning, monitoring and execution of a firm's policy regarding its liquidity[34] (Smullen and Hand, 2005). In the simplest form cash management service is an execution of payment transactions on the current accounts by the bank on behalf of the customer. In more complicated forms, particularly with the big corporate clients, cash management becomes a central facility in managing optimally customers' liquidity and balance sheet. In practise, cash management services are provided by an ICT-operated system, which links client's current accounts to 'one system of circulation' and provides on-line information on money transfers and balances of the accounts to the client. In particular, a well-functioning cash management system minimizes the need for working capital and hence creates customer value through an effective control of capital costs. Cash management generates revenues for the bank through the lump sum payment for the delivery of the cash management system and through the flow of the priced transactions executed by the system.

[33] In practise, there exists firm-specific differences in the organizational division of the product lines, which is affected e.g. by the size of the bank, the strategic focus on specific products or customer segments. Following the logic of *the statistical clustering* the production and the delivery of individual products and services are grouped to achieve the maximum similarity within each product line and to achieve the maximum dissimilarity between the product lines. As indicated below the product lines are themselves strongly interlinked, which enables a holistic interpretation of banking products and services. From such a perspective a bank provides 'solutions' for the customers' requirements, which are met by specific mixes of financial products and services. Accordingly, the offering of a universal bank is a packaged product (Parrinello, 2004), which share the properties of classical service and immaterial goods which provide services for specific financial needs (Vargo and Lusch, 2004). Moreover, the standard offering of a universal bank is an archetype of what is called modularized service (Sundbo, 1999; Heiskala et. al., 2006).

[34] Liquidity is the extent to which the assets of an organization enable it to pay it debts when they fall due and also to move into new investment opportunities (Smullen and Hand, 2005).

The product line called *capital markets* constitutes a separate business area with heterogeneous services and products used mainly by companies. Some of the services of capital markets are *event-driven* such as the services of investment banking, which are related to the customer's capital structure and raising, liquidity management, as well as the advisory services in mergers and acquisitions by the corporate clients. The other category of the services provided by capital markets are *transaction -driven* exemplified by trading on currencies and equities and the sales of the risk management products. While the optimization of capital structure and investment are *long-term* choices related to customer's strategy, there exist a number of *short-term* decisions in the management of the working capital. They deal with the short-term balance of current assets and current liabilities. As with investment banking, the ultimate purpose of the transaction-driven capital products is to maximize the value of the customer's assets and to manage the associated financial risks[35]. Owing to the heterogeneity of the capital markets' products and services, the revenue of the bank is a combination of interest income, and several kinds of fees and provisions. Moreover, they are often contingent on the uncertain outcome of the service and transaction.

Based on the shared objectives with the capital markets' products and services, a*sset management* constitutes the fourth product line in the product and business portfolio of a universal bank. The term asset management refers to the core activity of *private banking*, which encompasses financial services that are provided with private individuals investing in sizable assets. The term 'private' implies that the customer service is rendered on a more personal basis, usually via dedicated bank advisers[36]. A high-level form of private banking is often referred to as wealth management. Asset management services are provided increasingly with corporations as well. In that case the treasury of the client firm uses the asset management unit of the bank as an advisory expert in the design of investment portfolios for the liquid assets that need protection against risk. The principal form of revenue generated by the bank from the asset management services is an annual lump sum fee.

[35] Risk management is the process of measuring risk and then developing and implementing strategies to manage that risk. Financial risk management focuses on risks that can be managed or 'hedged' using traded financial instruments. Derivatives are the instruments most commonly used in financial risk management. Because unique derivative contracts tend to be costly to create and monitor, the most cost-effective financial risk management methods usually involve derivatives that trade on well-established financial markets. The standard derivative instruments include options, futures contracts, forward contracts, and swaps (Smullen and Hand, 2005).

[36] Historically private banking has been viewed as very exclusive, only catering for high net worth individuals with liquidity over a specific threshold value. A bank's private banking division provide various services such as wealth management, savings, inheritance and tax planning for their clients.

5.3.2 Technological characteristics and evolution

Service technology, notably in the case of the universal banking industry, is conceptually obscure. As with the processes and outcome of the most service industries, the major aspects of the technology which the provision of the banking services actually rests on, are intangible, embedded in human skills and organizational routines (cf. Nelson and Winter, 1982). A wealth of the analyses on banking technologies assumes a 'narrow' technological interpretation and focus on the tangible 'facet' of the ICT- based production and delivery processes (Goddard et al., 2001; Berger; 2003; Berger et al., 2003, Barras, 1990). With respect to technological change in the European banking industry, Goddard et al. (2001) note that information technology contributes to cost reduction in the management of information (collection, storage, processing and transmission) by substituting paper-based and labour-intensive procedures for automated processes. New technologies alter the ways in which customers have access to bank's services and products, mainly through automated distribution channels such as ATM, Internet, telephone-based and other remote banking channels (Goddard et al., 2001)[37]. With the improved variety and quality of banking services, technological progress in ICT leads to the introduction of new services, improved risk management and monitor and control (Berger, 2003). Through the increasing economies of scale, ICT fosters the growth of the optimal size of a banking firm. This holds for the financial engineering and the applications of advanced statistical techniques as well (Berger et al., 2003).

In Barras (1990) financial services is considered as a 'vanguard sector' in implementing and developing ICT. Based on the evidence from the UK, Barras concludes that the adoption of ICT by the leading banks follows the generic pattern of service innovation called *reverse product cycle*[38]. In the first phase of the cycle in the 1960's and 1970', new enabling technology was applied in incremental *process innovations.* This was aimed to improve the overall *efficiency,* to reduce the costs of delivery of the existing products. The first phase was manifested in the computerisation (mainframes) of the back-office (scale-intensive) processes. The second phase that began in the mid 1970's was characterized by

[37] In reference to Goddard et al., (2001) ICT facilitates customer facing technologies, business management technologies, core processing technologies and support and integration technologies.
[38] The name of the model comes from the empirical observation that in services the cycle of 'technological' innovations tends to be reverse of the cycle in manufacturing (Gallouj, 1998).

more *radical process* innovations to improve the *quality* (standardization and customization)[39] of the existing services and the front-office activities (Gallouj, 1998). As noted by Barras (1990, p. 217) "the thrust of investment moves towards more radical process innovation which aims to improve the effectiveness rather than the efficiency of delivery of services". The radical process innovations led to the proliferation of ATMs and the utilization of smaller but more efficient computers in branch banking. In the third (the current) phase which started to evolve in the late 1980's, ICT has been increasingly implemented in the *product innovation and the development* of *new financial products*. The enabling technology is used for the upgrade of the bank's *computer networks* as integrated system based on real time, on-line transaction processing. This reduces capital costs and at the same time offers a complete package of the financial services, which are tailored to the customer's needs. On balance, Barras' reverse product cycle within the banking sector manifests a gradual shift in service innovation and productivity from efficiency to effectiveness.

While relevant for the analysis of banking productivity, it is contended here that an exclusive focus on the 'enabling technologies' (cf. Barras, 1990) may lose central aspects of the 'broader' technology, manifested in the 'mission' of the financial system as well as the resources and organizational design of the banking companies. Banks are inseparable parts of the financial infrastructure of any economy, and their intermediary and supplementary function should be seen as a technological specification in its own right (cf. Thompson, 1967). The business environment manifested in the regulatory, competitive and technological conditions, as well as the overriding need to avoid hazards in the financial system, exerts intrinsic constraints on the *organizational design* and the division of labour, which are the elementary part of the 'broader' service technology. Such considerations are reflected by the *networked* and *hierarchical* structure of modern banking corporations in their utilization of economies of scale and scope (Chandler, 1990). In this regard, enabling technologies (ICT) are also a powerful stimulus to more flexible and decentralized management and decision making structures as they allow for more efficient communication between functionally and geographically separate business units (Barras, 1990; Gallouj, 1998). Accordingly, scale-efficiency and effectiveness of the financial services and the competitiveness of the banking firms is based on a 'viable' division of labour between the core and the

[39] To quote Barras (1990, p. 225), "as far as innovations in services are concerned, these more radical process innovations are directed particularly at improving the quality of services delivered, since one of the distinguishing characteristics of services is their flexibility and almost infinite variability of quality, in contrast to the more standardized and discrete variations in quality which are typical of manufactured goods".

supporting business activities, and between the localized and centralized operations. The point made here - in the spirit of Nelson and Winter (1982) - is that the business operations of universal banks implement an array of interdependent technologies (tangible and intangible), the utilization of which is contingent on the company strategy and the characteristics of the business (regulatory) environment.

An exhaustive prescription of the 'broad technologies', which the core activities of universal banking employ, is provided by the organization theory. In particular, the technological classification of Thompson (1967) highlights the principal sources of banking productivity as well. *Long-linked technology* (1) involves a serial interdependence in the sense that act Z can be performed only after successful completion of act Y, which in turn rests on act X, and so on. Archetypes of long-linked technologies are vertically linked value chains in industrial mass-production. The long-linked production mode, which is a close approximate to *perfect rationality* (productivity), enables predictable and standard processes at a constant production rate (Thompson, 1967). With regard to universal banking, the long-linked technology is manifested in the sequential inter-dependence and vertical integration between the production and the sales of the financial services and products.

The principle idea of *mediating technology* (2) is to link customers who are or wish to be interdependent. Thompson (1967) notes that *commercial banks*, for instance, link depositors to borrowers and insurance firms link customers who want to pool common risks[40]. This enables the utilization of the economies of scale and scope. The complexity of mediating technology follows from the requirements of standardization of the geographically dispersed service operations, and the compatibility of the needs of multiple clients that differ in time and space. As customers with their specific needs are involved in the production of the services, the opportunities for standardization and control of the processes are limited, however. Hence, the comparison of the mediating technology with the long-linked technology demonstrates that the former is further away from the closed system of logic[41].

[40] Mediating technology is associated with network effects. In a similar vein, banking and insurance belong to a group of industries called the network services (Salter and Tether, 2006), where the business draws on physical networks as well as information networks. The productivity of networks in universal banking is based on scale economies derivable from the universal presence in the delivery of the financial services.

[41] Owing to the characteristics of mediating technology universal banking is located between traditional manufacturing which employ long-linked technologies and professional services, which employ intensive technologies.

Intensive technology (3) employs a variety of techniques to achieve a change in a specific object (Thompson, 1967; Gadrey, 2002b). The selection, combination and order of the applied techniques are influenced by the feedback from the object, which can be human or non-human (property). Intensive technology is *customized* technology in the sense that it rests on the appropriate combination of selected capacities required by the individual case or project to attain high *effectiveness*. Owing to intensive customer participation in the production and the delivery and the obscurity of the technology itself, intensive technologies are distinctively based on open system logic. Hence, intensive technology is an implicit assumption in the classical definitions of service by Hill (1977) and Gadrey (2002a). Within the context of universal banking, intensive technology is implemented e.g. in 'relationship banking' and investment banking, where customization and knowledge-intensity of the services usually grows with the size of the corporate client (Morrison and Wilhelm, 2008).

The parallel deployment of long-linked, mediating, and intensive technologies suggests that universal banks are highly universal with respect to the *performing* (core) technologies as well. This can be further illustrated with the taxonomy of the service technologies depicted in Figure 29 (Viitamo, 2007). Building on the earlier contributions[42], this taxonomy is constructed in a three-dimensional space, indicated by three continuous variables, *labour - capital ratio*, the *degree of customization* and the *degree of tangibility* of the service processes and outcome. The technology space can be defined as a *cube*[43] with eight corners. This enables outline the *cluster archetypes* that represent the extreme combinations of the three variables. Linked through the modularized service production mode (MD), the eight cluster archetypes can be used in the classifications of service industries and activities.

Based on the tentative information on the industry characteristics in advanced countries, the dominant technology of the financial services in Viitamo (2007) was defined as *scale-intensive networked processing*[44] which corresponds to the cluster G in Figure 29. The coordination of networks and production of the services in the cluster G relies predominantly on information and communications technologies, which also enable high self-service content in the standardized financial services. As customer participation in the service production and delivery is generally low, the production systems

[42] See e.g. Wemmerlöv (1989), Silvestro et al. (1992) and Sundbo and Gallouj (1999).
[43] The bottom of the cube is the square consisting of clusters A-B-E-F. The upper side square consists of clusters C-D-G-H.
[44] Based on the earlier studies and industry classifications, the characterization in Viitamo (2007) was made prior to the selection of universal banking for a focused case study.

are relatively closed (Grönroos and Ojasalo, 2004). High ICT capital-intensity and standardization stresses the continuity of the production processes (standardization quality), which implies co-determination of scale-efficiency and effectiveness prior to the consumption of the services. Such a production system, exemplified by direct banking and internet banking, is distinctively efficiency-driven (Viitamo, 2007).

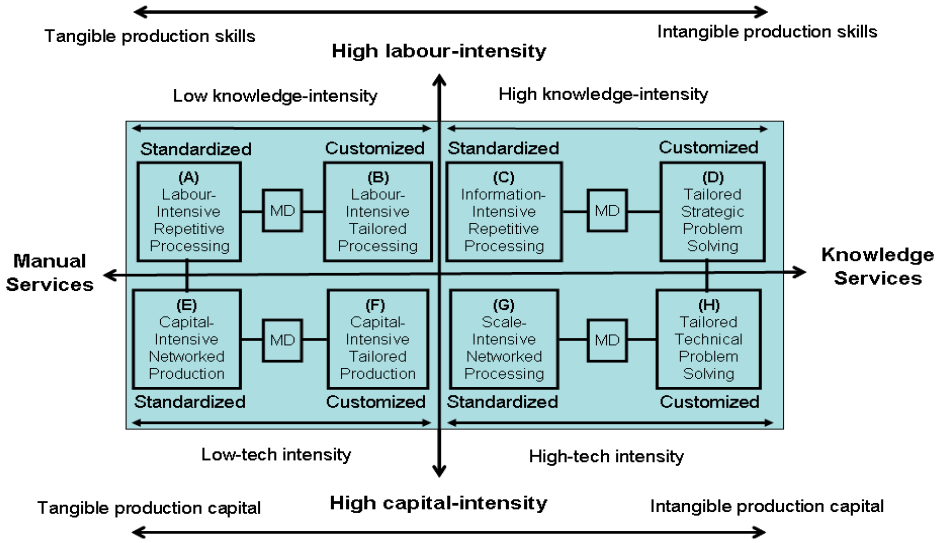

Figure 29. Eight cluster archetypes of service technologies (Viitamo, 2007)[45].

Based on the qualitative data collected in the present case study, a detailed examination of the activities with respect to the technological space of Figure 29 reveals a marked diversity and evolutionary dynamics within the Finnish banking industry. In general, *the change in the technological regime shows a marked similarity with the reverse product cycle that started ten years earlier in the UK* (Barras, 1990). Before the end of the 1980s, and the evolving financial crisis in Finland, banking services provided with the households and SMEs[46] were predominantly payment services as well as processing of loan documents. These processes were based on *labour-intensive repetitive processing* in cluster A as well as *labour-intensive tailored processing* (the cluster B). Whereas the ICT-supported

[45] MD is an abbreviation of a modularized service.
[46] SME = small and medium size enterprises.

production and the delivery of the cash management products and accounts products drew increasingly on *scale-intensive networked processing* (the cluster G), the provision of capital markets products and investment banking services, used mainly by the big corporate clients, utilized *information-intensive repetitive processing* (the cluster C), and *strategic and managerial problem solving* (the cluster D) as well. Owing to the extensive regulation of the capital and loan markets until the mid 1980s, the technological regime of the banking sector was shaped by limited supply of finance and hence, limited price competition among the banking enterprises. As competition showed up mainly as a technological race in the transactional efficiency and automation, sales and marketing activities were of lower importance for banks' economic success and strategy.

A new technological regime evolved towards the end of the 1980s. The deregulation of the capital markets and the supply loans and interest rates boosted the creation of competitive financial markets and the rivalry for clients and market shares in all customer segments. As a result, the strategic focus in the universal banking industry shifted increasingly away from the production to the sales and marketing, and in the aftermath of financial crisis, to a more balanced coordination of production and sales activities. An accompanied change was an intensified utilization of ICT in the operations of the core and the supporting activities of the universal banking firms. This emphasized the prominence of *scale-intensive networked processing* (the cluster G) as the dominant technology within the universal banking industry. The overriding objective of the ICT strategy was to boost labour productivity of the transactional banking, which led to a rapid ICT capital-deepening, i.e. the substitution of labour, and hence higher cost- and scale-efficiency of the banking processes[47]. With respect to the technological space in Figure 29, several changes became increasingly pronounced in the 1990s. Transactional banking services and a great deal of the loan processing activities were computerized which implied a technological shift from the clusters A and B towards the cluster G in these activities. With the significant reduction of manual work in the basic processes, human capital became increasingly needed in the knowledge-intensive consulting and sales activities, corporate management, and the production and design of the ICT-based products and services. Accordingly, sales for the households and small companies can be characterized as *information-intensive repetitive processing* indicated by the cluster C, whereas modularized modes between the clusters C and D are utilized in serving bigger customers.

[47] In the 1990s the number of the employees of the financial sector diminished from around 100 000 to less than 30 000 (Federation of Finnish Financial Services, 2009).

The service technology in the case of the corporate clients can be approximated by *strategic and managerial problem solving* in the cluster D (cf. Morrison and Wilhelm, 2008). On the product management side there has been a parallel ICT-driven shift from the cluster G to *modularized production modes,* and to the cluster H of *tailored technological problem solving* for the biggest corporate clients. Facilitated by human capital and advanced ICT applications, the service innovations with big corporate clients are increasingly *'transferred down*' to the technical, financial and strategic solutions offered to other customer segments of smaller clients.

In conclusion, the technological trajectory of universal banking has in the past two decades evolved from standardized labour-intensive processing towards modularized and tailored knowledge-intensive processing and problem-solving. In regard of Barras' innovation model (Barras, 1990; Gallouj, 1998), the characteristics of the subsequent phases of innovation are identifiable in Finland as well but the changes have been faster and to a higher extent simultaneous. With the higher technical complexity, information-intensity and customer service content in the sales activities, the value chains in the Finnish universal banking industry have become more open and more focused on the effectiveness in service productivity[48]. Hence, on basis of the empirical evidence it can be maintained that in deviation to the established industry classifications (cf. Kox and Rubalcaba, 2007) universal banking has made a marked progress from the standardized consumer and business services towards *knowledge-intensive professional services* (Gallouj, 2002; Løwendahl, 2005). In particular, the observation holds for the relationship banking with large corporate clients.

5.3.3 Economics of banking productivity

The ambiguity of banking technology and the characteristics of the banking output in the 'grey terrain' between knowledge-based services and manufacturing goods are manifested in the conceptualization of productivity and in its measurement as well. As most of the immaterial products and services in the bank's offering cannot be quantified directly, the banking production deviates from the standard manufacturing processes. Owing to the commoditization and increased digitalization of the financial offering, it does not match with the strict definition of classical services either (Hill, 1977; Parrinello,

[48] More generally, the common orientation towards relationship banking in the industry is reflective of the characteristics of investment banking. Traditional investment banking relies upon the experience, the skills and the reputation of its practitioners. It is therefore more closely associated with human skills than with financial capital (Morrison and Wilhelm, 2008).

2004). Given these premises, the standard practise within the banking industry and within the applied economic research is to measure banking productivity 1) *financially,* based on the value of the assets, as well as the prices of the outputs (revenue) and the inputs (costs), and 2) *quantitatively* e.g. through the number of internal and external transactions conducted in a product and service category for a specific period of time. Given the compounded *problem of aggregation* over of heterogeneous products and services, the managerial approach to productivity adopted by the banks is pragmatic and draws on *profitability* (cf. Grönroos and Ojaniemi, 2004; Porter, 1985). The chosen perspective to the banking technologies (Thompson, 1967) matters as well.

The above discussion on the banking technologies demonstrates the stylized fact that technical progress, particularly in the development and the utilization of ICT, is strongly associated with the needs to increase the cost- and scale-efficiency of the banking processes. Efficiency *perspective* puts forward the intermediary role of the financial sector (OECD, 2005c). In this setting banks are seen to utilize predominantly the *mediating* technology (Thompson, 1967). This implies that performance of the banking industry is assessed in terms of efficiency (the number of transactions with respect to available resources) in transmitting the financial resources between the lending and borrowing sectors, and providing transactional services with individuals, firms and institutions. When the focus is geared to *long-linked* technology, the problem is reducible to the coordination between the production units, which assume 'product-ownership', and sales units which assume 'customer-ownership'. As the objective of customer management is to generate high income with predetermined effectiveness, and the objective of the product management is to cut down the unit costs to attain cost-efficient production and delivery, an appropriate aggregate measure is *profitability*, which compares the value of revenues relative (R) to the operating costs (C). If banking processes are interpreted from the perspective of *intensive* technology, the critical issue is the extent to which the banking offering generates the change in the object according to the customer specifications (Gadrey, 2002b). These considerations shift the focus to the measurement of *customization* and *customer satisfaction*, which are examined at further length in Section 5.3.5.

Based on the mediating (efficiency) and long-linked (profitability) perspectives to banking technology, the focus here is geared to the productivity implications of the applied economic research in the light of the arguments of the descriptive value-creation approach (VCA) to service productivity. Both

perspectives are rooted in the neoclassical tradition and hence 'assimilation' with respect to service productivity. The *efficiency approach* to banking productivity became established through the proliferation of statistical studies in the 1990s (Casu and Molyneux, 2001). Drawing on the neoclassical theory of a firm the efficiency approach assimilates banking productivity with economic and technical efficiency[49]. The rationale for the efficiency approach is not hard to find. When banks show increasing efficiency that is facilitated by intensive rivalry and innovation, their short term profitability would improve and banking services and products would exhibit lower prices and higher quality. Moreover, if efficiency savings (profits) are used for capital buffers that absorb risk, a higher safety and soundness of the banking system will be attained (Casu and Molyneux, 2001) [50].

The academic interest in banking efficiency has centred on *two* broad issues. One strand of research, which may be called *the scale-efficiency school*, tries to configure the shape of the cost and production functions of banks, and hence the existence of economies of scale and scope. This gives indications on the optimum firm size in the banking industry (Molyneux et al., 1996). The other perspective highlights the fact that efficiency depends crucially on the ability of the bank's managers to control costs and increase the revenue with given scale of operations, i.e. to reach a point on the best practise production function. Based on the empirical data on the banking outputs and inputs, this research tradition, which may be called *the cost-efficiency school*, tries to approximate the best-practise productivity frontiers. They depict the maximum attainable output generated from the available inputs (technical efficiency)[51].

There exists three principal ways of generating the best-practise productivity frontiers[52]. In *the production approach* (1), banks are treated as firms that employ labour and capital to produce various

[49] *Technical efficiency* refers to the ability to avoid waste in producing as much output as the usage of inputs allows (output-augmenting orientation), or by using as little input as output production requires (input-conserving orientation). *Economic efficiency* refers to the ability to select the cost-minimizing set of inputs to obtain a given level of output in the light of prevailing input prices (Kreps, 1990).

[50] A natural point of departure to the measurement of the output and productivity of the banking sector is to look at the way they are treated in the national accounts (Colwell and Davis, 1992; Timmer et al., 2006). This brings the discussion back to the *assimilation approach to service productivity*, which maintains that the national accounts and the associated calculus of value added provide a uniform measure of productivity for all industries (Metcalfe and Miles, 2006).

[51] There is a broad consensus among the scholars that the differences in the average costs of the financial institutions is more attributable to the differences in their productive efficiency than their ability to realize the benefits of economies of scale and scope (Berger and Humphrey, 1997; Goddard et al., 2001).

[52] As with the estimation of the economies of scale and scope, the conclusions derivable from the efficient production frontier analyses are sensitive for the choice of variables for the outputs and inputs. As the outputs of banks share the characteristics of tangible products as well as intangible services, there is no consensus as to the definition of what banks

types of products such as loans and deposits. Output is then approximated e.g. by the number of transactions performed for each category of products. In the *intermediation approach* (2), where the mission of the banks is seen more as the transmission of funds between the savers and investors, the value of and investments is usually taken as output measures, whereas labour, capital and deposits inclusive of their costs are regarded as inputs (Berger and Humphrey, 1997)[53]. An alternative method is the *value-added approach* (3) where the factors that generate value for the bank are regarded as outputs whereas factors that diminish value are regarded as inputs (Casu and Molyneux, 2001). The value-added approach is closely related to the profit growth decomposition (see below) and the *value-creation approach* to service productivity outlined in Section 3.5. On aggregate, the scale-efficiency school and the cost-efficiency schools show *methodological similarity with the value creation approach to service productivity (VCA)*. In all three cases the first issue is to derive the best-practice productivity frontier for the service industry from the empirical data. The subsequent issue is then to examine the relative positions and the relative distances of the competing firms from the best-practise frontier.

In consonance with VCA, the cost-efficient productivity frontiers generated from empirical data on outputs and inputs of the sample firms can used as a yardstick in the analysis of banks' productive performance in the banking industry. In particular, when the productivity frontiers are derived from a representative *sample* of an industry, the data provides information on the *relative productive efficiency* (the distances from the best-practise frontier), rather than *absolute productive efficiency* (the distances from the true frontier), which is actually unobservable[54]. To generate robust implications for the industrial policy and corporate strategy, Bauer et al., (1997) suggests central consistency conditions for

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produce and how service output can be measured (Casu and Molyneux, 2001). The problem is compounded by the multiplicity of technologies applied within the banking industry and the chosen perspective, accordingly.

[53] For the comparison of the approaches Casu and Molyneux (2001) note that the production approach may be somewhat better for evaluating the efficiencies of branches of financial institutions, because branches primarily process customers documents for the institution as a whole, and branch managers typically have little influence over bank funding and investment decisions. On the other hand, the intermediation approach may be more appropriate for evaluating entire financial institutions (banking corporations) because this approach is inclusive of interest expenses, which often account for between one-half and two-thirds of total costs.

[54] As with the appropriate choice of the banking outputs and inputs, there exists no consensus as to the correct (preferred) method for the construct of the best-practise frontier, which the relative efficiencies are measured on (Casu and Molyneux, 2001). Whereas the parametric approaches, such as stochastic frontier approach and distribution-free approach, impose a specific functional form that presupposes the shape of the frontier, the non-parametric approaches such as data envelope analysis (DEA), impose less structure on the frontier with no allowance for random error. The DEA frontier is formed as the piecewise linear combination of the set of best-practise observations, which yields a convex production possibility set (Berger and Humphrey, 1997).

the various efficient frontier methods. First, the efficiency estimates should be mutually consistent in *ranking* and *identifying* the firms (banks) of the highest and the lowest performance. Second, the methods and associated rankings should demonstrate *stability* over time and *consistency* with the specific competitive conditions of the industry. In particular, (Goddard et al., 2001) note that the measured efficiency from all of the useful approaches should be reasonably consistent with the standard non-frontier performance measures (used by the banks and analysts) such as *return on assets* or equity or *cost to income* or assets ratios. Similar considerations can be found in the descriptive VCA as well.

The interplay between a bank's *profitability* and *productivity,* addressed in terms of long-linked technology, can be illustrated by the profit decomposition methodology implemented e.g. in Griffel-Tatjé and Lovell (1999) and Asaftei, (2007). *Showing the analogy with the decomposition of the sources of the operative value of the firm in Section 3.5* (see Figure 13), the profit growth decomposition model, displayed in Figure 30 may be called 'the value creation model' as well. The principal idea in the profit decomposition is to examine the annual growth of the profit (profitability)[55] of a bank with respect to each of the decomposed determinants individually, holding the other determinants constant. This conforms to the view of strategic management (Porter, 1985) and VCA that firms strive for a higher technical productivity of their activities as long as productivity is conducive to higher profitability and is more profitable strategy in comparison to the other sources of profit. At the *first* stage in Figure 30 the profit change between period t and period t + 1 can be decomposed into *quantity* effect and *price* effect. This can be expressed formally as

$$\pi^{t+1} - \pi^{t} = \underbrace{\left[\left(y^{t+1} - y^{t}\right)\times p^{t} - \left(x^{t+1} - x^{t}\right)\times w^{t}\right]}_{\textit{quantity effect}} + \underbrace{\left[\left(p^{t+1} - p^{t}\right)\times y^{t+1} - \left(w^{t+1} - w^{t}\right)\times x^{t+1}\right]}_{\textit{price effect}},$$

where the variables π, y, p, x and w denote to (vectors of) profit, output quantity and price, and input quantity and price of the bank in the successive periods. The price effect shows the profit impact of changes in the price structure of banking business, holding the quantities constant. Hence, the decomposition rests on a simplifying assumption that all banking products can be quantified in a meaningful way. With the enhancement of economic efficiency through a competitive pricing of the

[55] In practise the analysis is focused on return on equity (ROE) which relates annual operating profits π to assets or equity.

outputs and inputs, the price effect involves also the effect of 'strategizing' and thus the appropriation of monopoly rents by the banks. At the *second* stage, the quantity effect is decomposed into the *productivity* effect and the *activity* effect (Griffel-Tatjé and Lovell, 1999). In consonance with Figure 13 (Section 3.5) the activity effect on the profits reflects the impacts of the changes in economies of scale and scope (input and output mix) of the banking firm. For instance, the growth in the economies of scale between two periods implies that the output increases proportionally more than input usage which contributes to the profit increase of the bank. In particular, the 'mix' effects reflect the managerial capability to react to the output and input price changes, and adjust the product and input mixes thereupon[56]. At the *third stage* of the profit decomposition, the productivity effect is split into the impacts of *technical change* (of the best practise) and *operating efficiency* (Asaftei, 2008; Berger and Mester, 2003). The technical change effect is reflected by the upward shift of the output frontier (production function), whereas the improvement in the operating efficiency implies a reduction on waste of resources and a shift of the production of a bank closer to the production function (best practise frontier). Figure 30 presents these effects as they are summarized in Griffel-Tatjé and Lovell (1999).

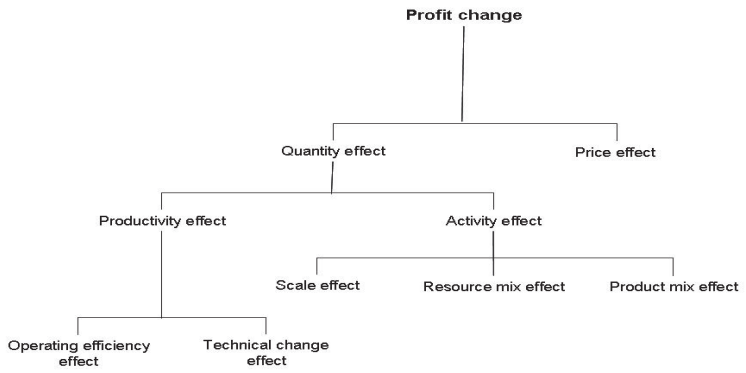

Figure 30. Banking profitability and productivity (Griffel-Tatjé and Lovell, 1999).

[56] A practical example of the output mix effect is the diversification of the universal banks from the traditional lending into the fee-priced products and services such as asset management, cash management and investment banking, where the opportunities for higher margins through differentiations are much higher and than in the standardized loans characterized by a fierce price competition. Such an expansion is also induced by the capital cost considerations. As the business activities of the fee-based products and services show in general, lower levels of risks, and thus require substantially less economic capital, they provide a higher contribution with the risk-adjusted return on assets compared to the standard loan products with high economic capital requirements. In a similar vein, the price-sensitive input mix effect is manifested in the substitution of human labour for the ICT capital resulting in a higher ICT-capital intensity of the processes, and totally new regimes in the product development by the universal banks. Through the mediating function of the banks, savings funds and life insurance products contribute to the input and output mix effects simultaneously.

The decomposition of the productivity impacts conforms to the analysis of the neoclassical theory of production and a firm. It brings together the standard efficient frontier analysis, such as data envelope analysis (DEA), and the total factor productivity (TFP), which indicate technological progress within the macroeconomic approach, i.e. the *assimilation* school of service productivity (see Section 3.3). The decomposition by Griffel-Tatjé and Lovell (1999) *disregards the effectiveness* of service productivity to the extent that it is not captured indirectly by the price effect. With the generalization of the decomposition model, which accounts for intrinsic features (intangibility) of the banking 'services', it is possible to incorporate effectiveness into the analysis *implicitly*. This can be demonstrated by a profit-based specification, where the banking output is approximated by the *revenues* and the input is approximated by the *costs* (Asaftei, 2008; Drake, 2006; Berger and Mester, 2003). In this setting the resulting service productivity indicator, the *revenue-cost* ratio, is an approximation of scale-efficiency and effectiveness as suggested in Section 3.5 (cf. Grönroos and Ojasalo, 2004). Berger and Mester (2003) note that the use of profit approaches (to productivity) help take into account unmeasured changes in quality of banking services by including higher revenues paid for the improved quality, and may thus help capture the profit maximization goal by including both the costs and revenues. These considerations conforms to the premises of VCA as well.

However, in reference to the discussion in Section 3.5 even the profit-based approach to banking productivity fails to capture the *customer's productivity* and *effectiveness* in a satisfactory way. This can be demonstrated by the findings in Asaftei (2008) on the US banking industry. Reflective of the diminished productivity in generating profits (R/C), the downward shift of the best practise frontier should be seen more as a consequence of the product-mix effect, the nature of the competition, and the *deficient measurement of service quality*, rather than a technological regress in the traditional sense (Asaftei, 2008)[57]. Berger (2003) for instance, notes that to the extent the banking markets are competitive the profit potential of the increased service quality from an industry-wide technological advances may be competed away by the banks and passed to the customers just to maintain the existing market share. This is not reflected as a productivity increase in the industry's cost-income ratio. Moreover in banking, there exist many new products and quality improvements that are not easily

[57] Berger (2003) discusses the difficulties in capturing the effects of technological development and innovations in information processing, telecommunications, and financial technologies by the traditional measures of technical change and productivity.

captured in standard productivity measures (Berger, 2003)[58]. On balance, the observation on the downward shift of the profit-based productivity frontier demonstrates that the revenue-cost ratio captures the customer's productivity and effectiveness only *partially*. This is the major conclusion in the descriptive VCA as well (see Section 3.5).

The overall conclusion derivable from the profit decomposition models is that the *size of the commercial (universal) bank (enhanced through organic growth and mergers) is positively correlated with the capability to generate high and stable flows of profits with respect to equity (ROE) and total assets (ROA).* With a higher scale of operations and cost-efficiency, big banks show a more diversified portfolio (scope) with respect to customer segments and product lines. Asaftei (2008) notes for instance that investment banking activities have been a natural addition to the product lines of large (universal) banks with large corporate clients and closely connected to financial markets. A broader range of products enables a higher utilization of the price effect and the activity effect through an improved quality of the financial services, and the adjustment of the margins of the fee-based (non-interest) and highly differentiated product lines (Asaftei, 2008; Berger, 2003)[59]. The higher flexibility in expanding and rebalancing the output portfolio is a source of higher profitability, which can be better utilized by large and diversified commercial banks[60]. On the input side the competitive advantage of large banks is the ability to use less and cheaper core deposits. Large banks buy in large volumes and have a better access to the (capital) markets of purchased funds to finance their lending and investments compared to smaller banks. Moreover, based on the conclusion by Asaftei (2008), large banks have better opportunities to improve in efficiency, i.e. to narrow the distance to the best-practise banks in the peer group. With the advances in ICT and the financial engineering some innovations are more effective when used in large scale (ibid). Accordingly, new technologies allow large banks to communicate, produce and distribute banking products and transactional services more efficiently – in cost and scale - than smaller banks. Regardless of the plausibility of the above reasoning, the inadequacy of neoclassical analysis to capture effectiveness in an appropriate way implies that the superiority of large

[58] The impact of new products and quality improvements from technological progress are often neglected in the government statistics and may thus lead to overstatements of inflation and understatements of productivity growth (Berger, 2003).
[59] The product mix reallocation is a rational response of banks since some the fee-based 'off-balance sheet' activities represent a technological and informational extensions of traditional lending (Asaftei, 2008; Berger, 1987).
[60] Fuelled by deregulation and technological innovations such a development offsets the observed reduction in the overall productivity shown by the downward shift of the best-practise frontier (Asaftei, 2008).

banks in physical productivity with respect to smaller banks cannot be verified by the profit decomposition models.

5.3.4 Managerial practises in measuring banking performance

The *observation* that physical productivity of the firm's processes tends to assume a secondary or supplementary role in the strategic management of a modern corporation (Section 4.2) is supported by the empirical evidence of the universal banking industry. At the highest level in the hierarchy of the corporate goals are typically (1) *values and vision,* which lay the general guidelines for the conduct of the operative activities of a banking corporation. With respect to the operative activity the overriding objective is (2) the generation of high and sustainable *profitability* and *value* in the interest of the bank and its shareholders. As noted by Goddard et al. (2001), European bankers have for a considerable time put their energies into trying to boost returns to shareholders by focusing on both costs and revenues (ibid.). In particular, the operative goal is to improve the financial outcome in productivity which is measured by the return on equity and assets as well the cost-income ratio. The operative goals are enhanced through (3) other, *non-financial objectives such as high service quality, customer satisfaction and employee satisfaction*, which measure the future competitiveness of a bank. Of the above objectives, the focus here is on the financial goals of a universal bank and their implications to value creation and service productivity. Owing to its analytical importance, the cost-income ratio is discussed separately in the end of this sub-section.

As most of the leading banks are listed companies, the value creating objective of the highest priority is the enhancement of shareholder's value (SVA). More specifically, the goal of the bank is to enhance economic profit, which yields returns in excess of capital costs. Equivalent to the profit decomposition discussed above, the analysis of shareholder's value involves the disaggregation of the bank' activities into its component parts, business and product lines, and the assessment of the return on the equity capital (see below) for each activity. Hence, if the business line's actual return on equity exceeds the market cost of equity, the *hurdle rate*, it creates shareholder value (Karr, 2005). As a basic tool of corporate governance, shareholders' value or economic profit[61] of a business line is an absolute,

[61] Formally, economic profit is derived by deducting cost of equity from the risk-adjusted profit (RAP).

forward looking performance measure that accounts for expected profits and losses as well as cost of capital. In a formal presentation,

SVA = expected gross earnings – expected unit costs – expected losses – cost of capital,

where the cost of capital is specified on the basis of allocated economic capital (see below) and the hurdle rate (KPMG International, 2003)[62]. Relatedly, total shareholder return (TSR), which accounts for share price appreciation (capital gain) and dividends paid, indicates the overall value-creation for the owners. A complementary way of addressing shareholders' value is to view the market value of the bank's equity as the sum of the future cash flows available to shareholders, discounted to the present at the bank's required rate of return (Karr, 2005). *This is equivalent to the value creation equation based on the net present value of the firm in Section 3.5.4.* In that formulation the discount factor of the future profits accounts for the growth of sales and customer retention rate, which reflects customer's perceived quality. Again, a robust performance assessment is based on the decomposition of the core activities so that each business (product) line has its own inherent free cash flow pattern and its own required rate of return on equity based on the riskiness of the business (Karr, 2005). These considerations are related to another central key performance indicator, the return on assets or equity[63] (ROE). Return on equity, the calculation of which is based on historical data on the bank's balance sheet, measures the current profitability of the bank. In this regard it indicates how much profit a company has generated with the money the shareholders have invested in the company. Hence, ROE measures the efficiency, with which the management of the bank is capable of enhancing shareholders' value (Karr, 2005). In general, ROE is an appropriate performance measure for comparative analyses of listed companies operating in the same industry and investing in organic growth. The scope of strategic options available for a bank can be illustrated by the *DuPont* formulation, which decomposes ROE as follows:

$$ROE = \frac{netprofit}{sales} x \frac{sales}{assets} x \frac{assets}{equity}.$$

[62] The cost of equity represents the compensation that the market demands in exchange for owning the asset and bearing the risk of ownership.
[63] In accounting terms, after all liabilities are paid, shareholders' equity is the remaining interest in company's assets.

The first term in the equation is the indicator of the net margin scaled by the volume of sales, the second term is called asset turnover, and the third term is the financial leverage[64]. Growth in profitability (ROE) is thereby a function of the 1) efficiency, with which sales generates profits[65], 2) the efficiency with which the bank's assets generate external sales, and 3) improvements in the capital efficiency through the adjustments of the capital structure of the bank. On aggregate, these indicators define also the strategic options available in the pursuit of higher value for the bank and its owners. As with the forward-looking risk-adjusted performance indicators, the backward-looking ROE is constructed at different levels of aggregation – the bank, product lines and customer segments[66].

Any strategy on profitability and productivity is subject to the fact that banks generate earnings by taking and managing *risks* and therefore, the risk-return profile is of high relevance for a bank's overall profitability. Risk premiums charged from the customer in the sales prices serve as a buffer against expected losses, while the bank's own capital buffers against unexpected losses (KMPG International, 2003)[67]. Given the inherent risks the depositors and owners are exposed to, the actual profitability of banking businesses is assessed relative to the (risk-adjusted) assets of the bank. Consequently, the efficiency of capital allocation matters. The adoption of advanced risk-adjusted capital adequacy guidelines, enforced by the regulatory framework of Basel I and II[68], has led the executives of the universal banking industry to focus increasingly on the return on equity (ROE) as the ultimate performance scoreboard (Karr, 2005). In this setting, ROE can be regarded as the return to shareholders

[64] Financial economists and academic papers will usually refer to all liabilities as debt. The statement that equity plus liabilities equals assets is therefore an accounting identity. Other definitions of debt to equity may not respect this accounting identity and should be compared carefully.
[65] A comparable expression is the cost-income ratio C/I, which is not scaled by the volume of sales.
[66] For instance, risk-adjusted return on capital (RAROC) relates risk-adjusted profit (RAP) to book value of equity capital, whereas risk-adjusted return on risk-adjusted capital (RARORAC) relates RAP to unexpected losses, i.e. the actual economic capital (i.e. the amount of risk).
[67] According to Casu and Molyneux (2001) a critical element in improving revenues (by the European banks) has been the focus on high-margin/fee areas of business at the expense of low-margin/fee activities. Central to this has been the increased use of risk-adjusted performance measurement systems that help allocate capital more effectively, leading to better use of assets and higher risk-adjusted returns. In particular, European banks are aiming increasingly to boost their ability to generate revenues from a pool of assets, given the banks' capital backing and risk profile. This has been the critical element in boosting performance.
[68] Drafted in 1988 and 2004, Basel I and II have ushered in a new era of international banking cooperation. Through quantitative and technical benchmarks, both accords have helped harmonize banking supervision, regulation, and capital adequacy standards across the eleven countries of the Basel Group and many other emerging market economies. Although capital planning in buffering against potential losses has been evolving for a number of years, it has attained new focus and urgency as a result of the Basel II Capital Accord. Basel II overcomes a substantial shortcoming of its 1988 predecessor, which did not require banks to develop their own methods, processes, and systems to measure the capital level adequate for the risks they assume (KPMG International, 2003).

for the risk to which they expose their capital. With regard to a bank's profitability, which results from a number of activities, products and services, it is clear that the capital adequacy requirements set by a regulator influence directly the level of ROE and the banks' objectives thereupon. If the capital adequacy, indicated by the assets-equity ratio (Gearing), is increased (decreased) by the regulator, the required increase (decrease) in profit is higher (lower) to keep the level of ROE unchanged.

With the safeguard of solvency of individual banks, and the protection against possible collapse of the banking system, the regulatory capital adequacy guidelines set by Basel II framework provides economic incentives for the banks to develop advanced risk management models to increase the financial efficiency of the overall capital allocation. In general, there exists a high potential for an increased profitability beyond the compliance to the regulatory framework of Basel II. This draws on a comprehensive assessment of risks with respect to *economic capital*. Whereas most of the traditional measures of capital adequacy relate the existing capital levels to assets or some form of adjusted assets, economic capital relates capital to risks, without a reference to the actual assets. Economic capital is based on a probabilistic assessment of potential future losses and is therefore a potentially more forward-looking measure of capital adequacy than the traditional accounting measures. Conceptually, economic capital can be anything that absorbs economic losses without affecting dept-holders. It is a measure of risk[69] that expresses the protection against unexpected future losses at a selected confidence level (KPMG International, 2003)[70].

While ROE and other financial performance indicators summarize the key information on the banks' competitiveness in a comparable way, they hide the operative dimensions of the financial performance.

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[69] The overall risk that determines the adequacy of capital (the buffering reserves) of the bank, product or business line accounts for three sources of risk simultaneously. *Credit risk* is a risk of unexpected losses caused by customer's default or credit rating downgrade. *Operating risk* results from inadequate or failed internal processes, people and systems, whereas *market risk* arises as a result of unexpected change in market parameters, such as interest rate, foreign exchange or prises of stock markets.

[70] In the Basel II framework the development and implementation of economic capital and risk management models assisted by asset portfolio management is *encouraged* by a relaxed capital adequacy requirement. It enables the increase of the asset-equity ratio, which contributes directly to shareholder's value and ROE of a bank. Similarly, the economic capital models enable a more comprehensive pricing system that encompasses expected as well as unexpected losses. In summary, advanced economic capital models assist in the evaluation of the capital adequacy in relation to the bank's overall risk profile. They contribute to the development of risk-adjusted performance measures and induce risk management efforts by providing a common currency for risk. Through the portfolio risk analyses and economic capital models, banks can identify the businesses and product lines showing the highest contribution to ROE and the risk-adjusted performance of the bank. In this way a robust risk-return analysis provides a further rationale for a profitable *diversification* (Karr, 2005; KPMG International, 2003).

Apart from the above-mentioned adjustment in the financial leverage and capital efficiency, the *actual* increase in the shareholder value is attributable to the components of the operative performance of a bank, which can be illustrated e.g. by the profit decomposition model by Griffel-Tatjé and Lovell (1999) and Asaftei (2008). While inadequate for an explanatory analysis *per se*, the productive performance measured by the revenue-cost ratio R/C (Drake et al., 2006) is of particular interest for the value creation analysis. As noted by Berger and Mester (2003) the use of profit approaches (R/C) to productivity help take into account unmeasured changes in quality of banking services by including higher revenues paid for the improved quality, and thus help capture the profit maximization goal of the bank by including both the costs and revenues. Hence, *the rationale in assessing banking productivity in terms of costs and revenues is consistent with the principles of measuring service productivity in the descriptive value creation approach (VCA)*. In reference to Grönroos and Ojasalo (2004) and the socio-economic view of service productivity, financial measures (revenues in relation to costs) seem to be the only ones that manage to incorporate the quality variations caused by the heterogeneity of services and the effects on perceived quality by consumer participation in the service process. In a spirit of strategic management, Sahay (2005) asserts moreover that a service organization strives for productivity to achieve the goals set for the business. The fundamental goal of a firm is to make profit in the markets.

The revenue-cost ratio, or its inverse (C/I) which is derivable from the standard income statement of a bank, is used as a common indicator for productivity within the universal banking industry. As noted by one of the interviewed banking professionals “the cost-income ratio is a commonly accepted measure of efficiency, it is easy to compare, and we constantly benchmark ourselves to our competitors with respect to C/I”. Reflecting the combined effect of the managerial capability and the exogenous factors of the business environment (Goddard et al., 2001), C/I measures the efficiency with which one dollar of operating cost of a bank generates dollars of income for the delivery of the financial products and services in a given period of time - usually a fiscal year. The operative focus of the cost-income ratio is manifested in the fact the interest margin generated from external lending and borrowing is included as a residual component in the denominator of the C/I ratio.

Allowing for the aggregation over heterogeneous outputs and inputs, the productivity ratio between revenues and costs is also insensitive to the managerial choices linked to the ways in which the

Porterian generic strategies of cost-leadership and differentiation are utilized and combined (Porter, 1985; 1980). Berger and Mester (2003) note that the data on the US commercial banks supports the hypothesis that banks maximize profits through the simultaneous increase of revenues and the reduction of costs[71]. More specifically, the utilization of new ICT and financial technologies is not only induced by the pursuit of cost cutting strategies, but also by the development of new services and improved quality of the existing services. This is conducive to an improved customer's productivity and *differentiation*. The findings by Berger and Mester (2003) are consistent with the hypothesis that banks provide additional services of higher service quality, which may raise the costs but also raise revenues by more than the cost increases. Hence, the utilization of the cost-income ratio involves implicitly the assumption that there exists a trade-off between cost leadership and differentiation at high levels of actual productivity. Consequently*, in regard to the integrated approach to strategic management discussed in Section 4.2, it can be postulated that in case of the banking services, the cost-income ratio accounts for the trade-off between scale-efficiency and effectiveness at the high levels of banking productivity.*

It is essential to note that the cost-income ratio is viable only for the comparisons of business units (profit centres) that hold full business accountability over the revenues and operative costs. While this is the case for all banks at the corporate level, the C/I comparison of individual branches of different corporations is usually impaired by the differing managerial responsibilities and roles assigned to a branch, more generally. The prominent examples in this regard are Nordea and Svenska Handelsbanken[72]. Relatedly, the cost-income rankings of the banking corporations are based on the implicit assumption that the service technology is characterized by *constant returns to scale*. This implies that a small bank can be potentially as productive as a large bank. Indicated in Figure 31, the empirical evidence from the Finnish banking industry provides a qualified support to the argument of the profit decomposition studies (Asaftei, 2008) that there exist increasing returns (profitability) to scale for some range of production and volume of business. Whereas smaller banks tend to be concentrated on the right-hand side of C/I-axis, large banks locate, on average on the left-hand side[73]. The influence of economies of scale and learning can be manifested in the case of Svenska

[71] The authors suggest that methods that exclude revenues in assessing performance may be misleading.
[72] The comparison of cost-income ratios over individual branches of the same corporation may also be hampered if the branches are highly differentiated e.g. by the scale of operations or the customer segments.
[73] In the construct of Figure 31 the 'latest normal' year 2007 was preferred to 2008, as the financial crisis started to hit the performance of the banks differently towards the end of 2008.

Handelsbanken, whose regional bank in Finland (founded in 1986) with a growing number of branches has shown a trend-like decrease in C/I. This is associated with distinctively higher levels of C/I in Finland compared to the parent company in Sweden.

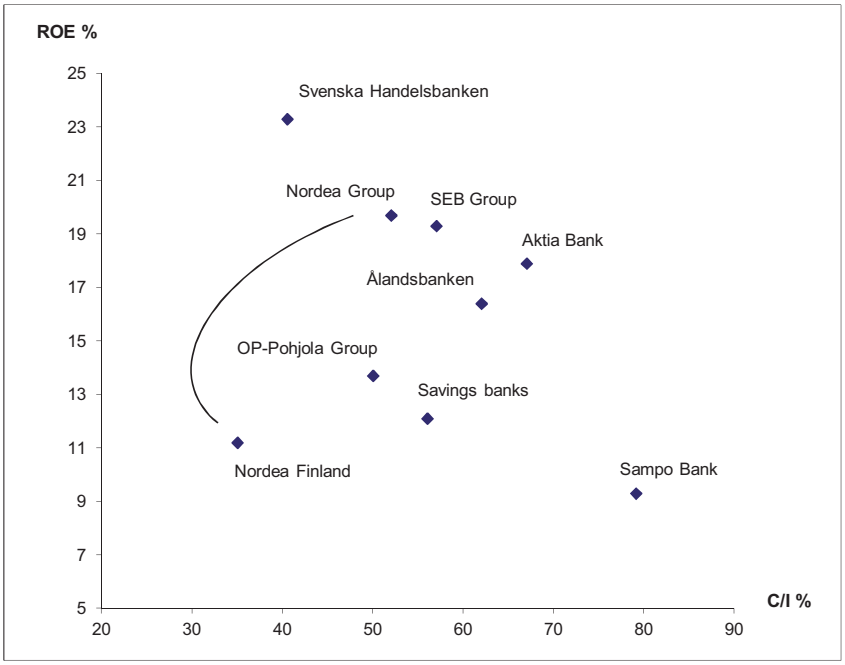

Figure 31. Profitability and productivity in the main universal banks in 2007 (Annual Reviews).

5.3.5 The measurement of customer's productivity and satisfaction

The profit-based analysis of banking productivity (Drake et al., 2003; Asaftei, 2008) shows that if there is an industry-wide decrease in the productivity levels measured by the revenue-cost ratio, the profitability (ROE) of banks may increase as the quality of the financial services as well as the mode of delivery is improved for the convenience of the customers[74]. Such an outcome is a reflection of the stylized fact that in *practise* (i.e. in deviation to the textbook case) the revenue-cost ratio does not capture customer's productivity and effectiveness properly. While in many cases the customer's

[74] This may lead e.g. to enhanced demand for the financial services.

perceived quality and value of the purchased service may be substantially higher or lower than the actual price paid for the service (cf. Hoopes et al., 2003), income-cost ratio and perceived quality are interrelated. It is plausible to assume that from a bank's perspective, there exists a potential trade-off between the current levels of C/I and the discounted future levels of C/I. This may become an effective tactic e.g. in a situation where a bank differentiates vertically through service customization and keeps prices unchanged to attain a higher customer retention rates (see Section 3.5.6 and the discussion below). Hence, co-adjusting effectiveness and customer's productivity with prices and costs of the services is central for balancing between the current and the future profits of a bank[75].

An ideal framework for the analysis of customer's productivity in the universal banking industry is the customer satisfaction survey conducted by EPSI (*Extended Performance Satisfaction Index*) Research Services (EPSI Rating, 2008)[76]. While most banks conduct follow-up studies on their customers' satisfaction regularly, the surveys conducted by EPSI are applicable to comparative analysis since they are neutral encompassing all or the key companies of a specific service industry. In particular, EPSI is regarded as an international research-based standard for the collection, analysis and dissemination of information on customers' expectations, their perceptions on quality and how they value the products and services they buy. The annual customer satisfaction surveys on the Nordic and Baltic *network services*, including banking, insurance, telecom, and retail trade, provide quantitative information on customer satisfaction, its key determinants, and the consequent effects on customer loyalty, trust and repeated purchase (retention). Seen from the analytical perspective of the thesis, the EPSI surveys help the participating firms assess the success of their *productive strategies* with respect to the competitors and the industry average. For its forward-looking focus on the 'triplets' – quality, productivity and expected profitability, the EPSI methodology comply with the theoretical arguments of service management (Gummesson, 1988) and the premises of the descriptive value creation approach (VCA) outlined in Section 3.5.

[75] By definition customer's productivity consists of customization quality and standardization quality (see Section 3.5).
[76] The EPSI institute and international network constitute the European hub for qualitative performance measurement and improvement analysis, associated with the leading European quality organisations, European Foundation for Quality Management, European Organisation for Quality, and International Foundation for Customer Focus. The main idea of EPSI is to develop a common European standard for measuring stakeholders' satisfaction and identifying their priorities. It started as a research project at a number of European business schools and academic institutions. From this initiative, it has become a widely recognized non-financial measurement system for the European service firms and other organisations.

Based on an empirically validated model with the causal relations indicated in Figure 32, The EPSI industry surveys can be used to highlight the inter-linkages between customer's productivity, perceived value and customer satisfaction. The dashed line divides the firm-level attributes assessed by the banks' clients[77] into the drivers and the results, which in the setting of Gummesson (1985; 1988) constitute the business rationale for an effective quality management (see Figure 11). For instance, the *image* of the bank held by the customers concerning the bank's reliability, customer service, financial products and services and expertise, enhances customer satisfaction directly, and indirectly via customer expectations, perceived product quality and perceived customer service quality. Whereas *customers' expectations* summarise customers' past experience on the key attributes of customer service and the financial services as a whole, *perceived quality* makes an explicit distinction between *product* (offering) *quality* and (customer) *service quality*. Such a view conforms to the division between front-office and back-office banking technologies made e.g. in Berger (2003). Hence, given the assumption of the descriptive VCA (see Section 3.5) that perceived quality is an approximation of customer's productivity, which is further reducible to the degrees of *customized quality* (as a function of effectiveness) and *standardized quality* (as a function of scale-efficiency), the EPSI model implies that customer's productivity can - and needs to be - analyzed separately for the financial offering and the customer service (see Figure 14).

The most prominent feature of the EPSI model is that customer satisfaction as well as customer loyalty[78] and trust, which can be used as proxies for customer retention, are influenced by the *absolute* levels of service quality - through image, expectation and perceived quality – and the *relative* levels of quality, i.e. the *perceived value* of the customer. The indicator of perceived value measures the extent to which the overall service offering of a bank is worth purchasing, given the prices of the financial products and services for the customer. From the definition of perceived value follows that customer satisfaction is an increasing function of the difference between customer's perceived quality and the price of the financial product and service. This supports the view that the market price of a service can be considered only as a rough approximate of customer's productivity (see Section 3.5.5). Hence,

[77] A randomly selected sample of a bank's clients consisting of 250 corporate and 250 household clients are asked to fill a questionnaire, where each driver and result is evaluated with scores ranging from low to high. The customers' assessment is based on Likert-scale between 1 and 10, where 1 means that customer is not at all satisfied with the specific aspect under study while 10 means that customer is completely satisfied.

[78] The index of loyalty is based on the answer to the question: "if you should choose a bank to contract with, what is the probability [high or low] of choosing your current bank?" (EPSI Finland Oy).

analogous to the cost-income ratio, which measures the producer's productive performance in VCA, the perceived value in the EPSI framework can be used as an index for the customer's productive performance. This further establishes the relation between profitability and the customer satisfaction index, which is highlighted in Figure 32.

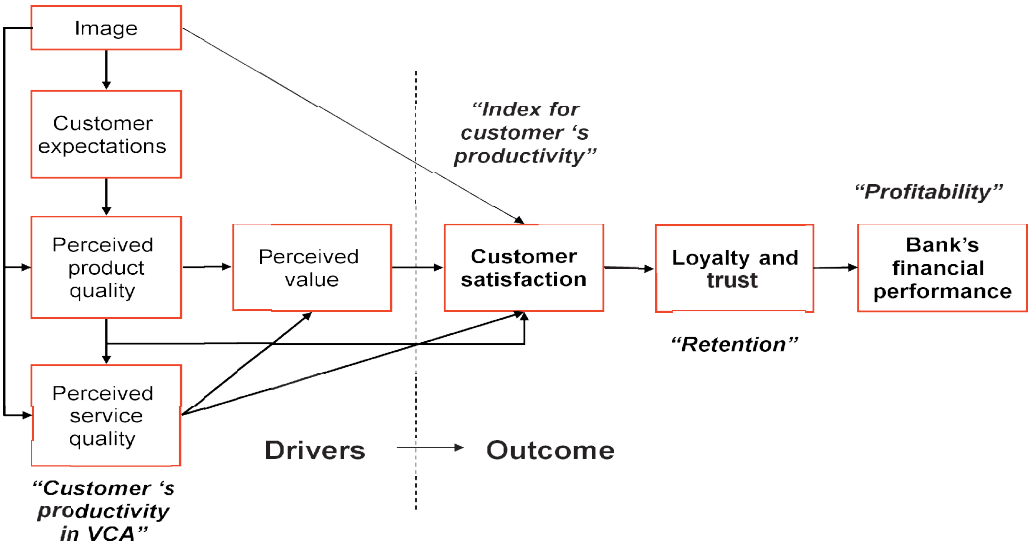

Figure 32. Customer's productivity within the EPSI model (modified from EPSI Rating, 2008).

The main empirical findings on customer satisfaction in the Finnish universal banking industry are summarized in Figures 33, 34 and 35. The Likert-scores, which are transformed into a percentage scale[79], measure the values of the indices in the *household* segment. A general observation, which is not underscored in the EPSI reports, is that the profiles of responses by the household and corporate customers show a distinct similarity with respect to the rankings of the banks and the levels of customer satisfaction. This supports the conclusion that perceived quality, customer loyalty and purchasing behaviour are to a high extent determined by the common 'subjective' criteria of individuals within the two customer segments. Such a result is also consistent with the stylized fact that banking services locate between the traditional consumer services and the business services.

[79] One hundred means that all the customers of the bank show the maximum satisfaction, while zero shows the opposite.

The stability of the bank-specific patterns in customer retention (loyalty) shown in Figure 33 *suggests the differences in the levels of the overall productivity (perceived quality) and differentiated strategies with respect to scale-efficiency and effectiveness by the major banks.* Along with the local small banks, *Svenska Handelsbanken* exhibits the *highest customer loyalty*, whereas Nordea Finland has shown a progressive trend close to the industry average[80]. Of the examined universal banks in Figure 33, Sampo Bank experienced a substantial fall in 2008 caused mainly by the failures in the unification of the corporate ICT platforms by the parent company Danske Bank. With the empirical observation, further confirmed in Section 5.3, that the universal banks follow differentiated strategies in productivity it is conceivable that high customer retention is associated with the strategy of high effectiveness and the capability of sustaining perceived and customized quality in the long run.

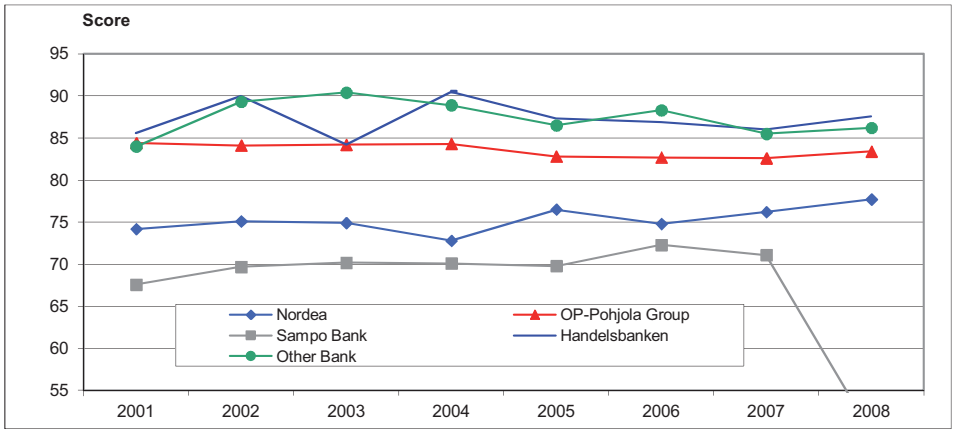

Figure 33. Customer loyalty within the household segment (EPSI Finland Oy).

As expected, the customer loyalty correlates positively with customer satisfaction. This can be seen in the comparison of the trend lines in Figure 33 and Figure 34. The higher 'systematic' variance among the banks in customer satisfaction implies *inter alia* that loyalty and customer satisfaction are influenced partly by different factors. In particular, customer satisfaction here needs some qualifications, as it is influenced by the general industry-wide criteria and bank-specific criteria set by

[80] On aggregate, the retention rates seem to converge, which may indicate an enhanced competition and some convergence in the banks' business models. The variation among the banks in this respect is somewhat lower in the corporate segment.

the respondents[81]. As the respondents are asked to evaluate their present 'house bank', the responses are inevitably affected by the 'unexplained' factors that made the respondents to choose the particular bank in the first place. Hence, the 'drivers' of satisfaction in Figure 34 include the means by which the differentiated service model of the bank is communicated to, and perceived by the customers. Based on the image, expectations and perceived quality, customer satisfaction reflects largely the overall productive performance of a bank's service model – scale-efficiency and effectiveness - assessed from its customers' perspective. This implies that the banks are evaluated partly by the criteria, which are *idiosyncratic* and hence not directly comparable across banks. With these qualifications, it is noteworthy that Svenska Handelsbanken has taken the leading position in the customer satisfaction rankings right from the start of the EPSI surveys in the year 2000. The stability and the high levels of the score indicate that comparable to the local small banks, Svenska Handelsbanken's business model generates high customer's productivity and effectiveness in the Finnish universal banking markets. Exceeding the growth rate of the industry average for the respective period, Nordea Finland has been able to improve its customer satisfaction substantially as well[82].

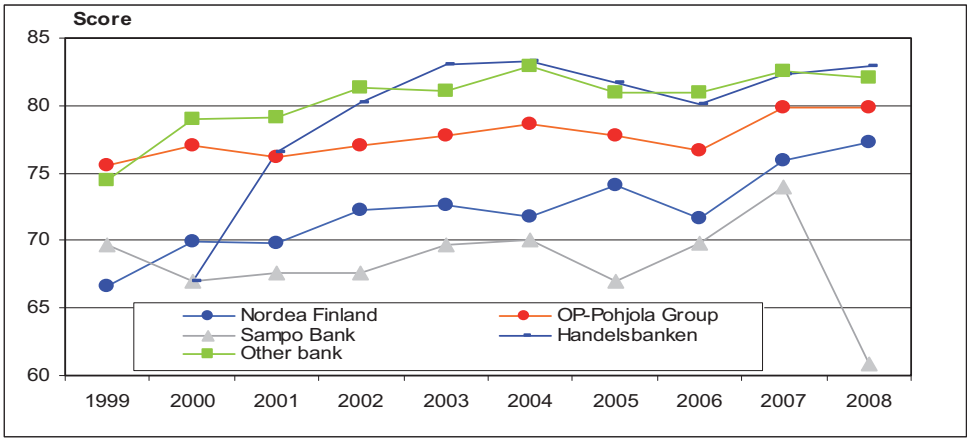

Figure 34. Customer satisfaction within the household segment (EPSI Finland Oy).

[81] The assessment of the overall customer satisfaction is based on the respondents answer to the following question: "with regard to all experiences you have on *your bank,* how satisfied are you?" (EPSI Rating, 2009).
[82] It is plausible to assume that the growth of the industry-wide customer satisfaction indices is boosted by the technical development in the front-office and back-office activities as well as intensified competition.

The strong dependence of customer satisfaction and loyalty on the image, expectations and perceived quality (drivers) highlighted in Figure 35, can be verified statistically by the deviant development in Sampo Bank. In particular, the statistics indicate that the degradation of the public image and the perceived quality of the *financial products* and *services* seem to be more hazardous to the perceived customer value, satisfaction and loyalty than the effects of lower expectations and perceived quality of the *customer service* (EPSI Rating, 2009). Such a pattern is characteristic of corporate customers as well, which gives further support to the conclusion that the distinction between business services and the consumer services tends to 'fade away' in the case of the universal banking industry[83]. Image, which can be interpreted as reputation - the external asset held by customers - is a prerequisite for a long-standing customer relationship in both customer segments[84]. To the extent that loyalty and satisfaction are sensitive to quality, it is the effect of the perceived quality of the *financial services* and *products* that really matters. The perceived quality of customer service plays an important supplementary role in the overall quality competition, which is led by Svenska Handelsbanken. In 2008, Svenska Handelsbanken held the top rankings in the financial services and the customer service within the household segment, whereas in the corporate segment Svenska Handelsbanken distinguished from its competitors through the superior quality of customer service.

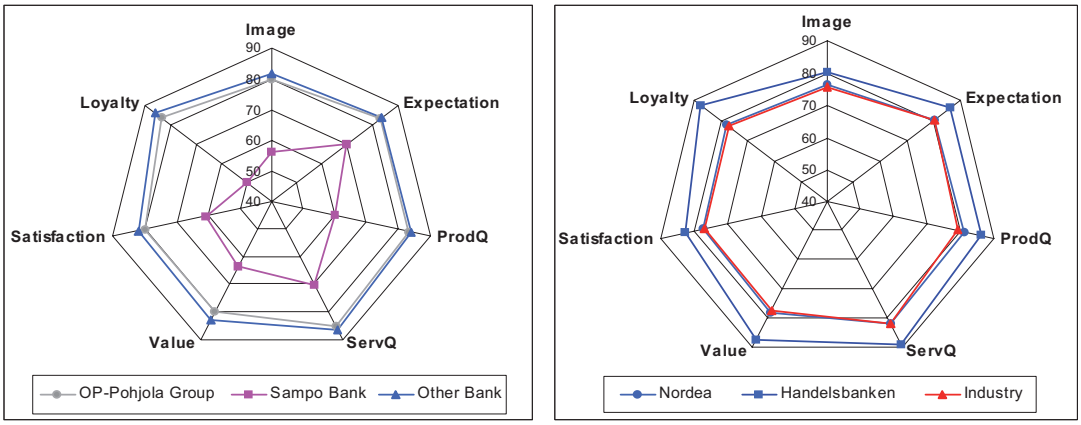

Figure 35. The drivers of customer satisfaction in the household segment in 2008 (EPSI Finland Oy).

[83] For instance, the non-specialized provision of the financial services in the corporate and the household segments in the branches of Svenska Handelsbanken is justified e.g. by the efficiencies arising e.g. from the attendance of the owners and the managers of the customer firms by the same sales officers, and often at the same visit.

[84] In general, the score on image shows the lowest variance across the leading universal banks.

5.3.6 Summary

The examination of the specific characteristics of the universal banking industry in this section is supportive of two main conclusions. *First*, the empirical evidence on the industry suggests that analysis of productivity in universal banking calls for a more coherent and robust framework. *Second,* the evidence points out that the premises of the descriptive value creation framework (VCA) are distinguishable in the managerial practises of conducting banking business, and in the affiliated economic analysis. More generally, the examination of the focused aspects of *banking technology*, *banking economics*, *the corporate goals* and *the measurement of productive performance* within the universal banking industry indicate that the descriptive VCA outlined in Section 3.5 offers a workable and robust framework for the empirical analysis of service productivity. The inquiry further points out that the banking industry is an ideal case to examine the productivity of evolving service activities that show the characteristics of traditional manufacturing and knowledge-based services. This brings along analytical challenges which necessitates a comprehensive interpretation of the service technology as well. Whereas the productivity of the standardized and tangible banking products is highly reliant on the performing technologies, i.e. the ICT and the other physical facilities, the productivity of the intangible banking services depends crucially on the organizational capabilities, which guide the use of labour services and the services of human capital. In recognizing the strong interdependence between service technology and organization, the focus in this section is geared to the key aspects of technology that are relevant for addressing banking productivity. This in turn provides the rationale for the 'metrics' in assessing the productivity of banking business and services.

Beyond the tangible aspects of ICT that are manifested in the performing technology, the various dimensions of the banking functions can be *comprehensively* addressed through the generic classification of the technologies as outlined in the organization theory (Thompson, 1967). Intensive technology puts forward the outcome and the *effectiveness* of the financial services for the customer. Implemented e.g. in corporate banking and asset management, intensive technology is highly customized and rests on combined capacities required by an individual case or project. Intensive technology is associated with high customer participation in the production and delivery, and hence it is based on the open systems logic. As each task delivers output to, and receives inputs from the other tasks involved in the process, the interplay of activities in the intensive technology is reciprocal.

Organizational fit and productivity necessitates mutual adjustment in the coordination of the activities of the parties involved - the bank and the customer. This enables confidentiality, which is prerequisite in all banking business. Intermediating technology stresses transactional and informational *efficiency* in the coordination of the financial markets, where the interdependence of the lenders and borrowers with respect to the banking system, is pooled. In case of pooled interdependence, the highest organizational productivity (fit) is attained through the coordination of standardized activities. This involves the establishment of rules and routines to constrain independent action. The third main dimension of banking technology is long-linked technology, which pursues a balance between the *scale-efficient* production and *effective* sales and distribution of the banking offering. In case of long-linked technology, the interdependence between the core activities is sequential (vertical). As a consequence, the tasks can be carried out only after the completion of the preceding tasks. When productivity of the banking activities is subjected to pre-design and control, the organizational productivity assumes coordination through an activity plan and a hierarchical control of activities.

Fostered by deregulation and the consequent intensification of rivalry within the universal banking industry, the computerization of the mediating technology (activities) has shifted the strategic focus and sources of competitive advantage increasingly to the management of long-linked and intensive technologies. Facilitated by higher quality of human capital and ICT applications, the service co-innovations with the biggest corporate clients are transferred (replicated) to the offerings - including technical, financial and strategic solutions - of other customer segments. Showing increasing technological complexity, information-intensity and customer service content in the sales activities, the value chains of the universal banking corporations have become increasingly open and responsive to effectiveness and customer's productivity. The appraisal of the banking industry with respect to the synthetized classification of service technologies supports the conclusion that in the past 20 years the business logic in universal banking has shown a marked shift from the standardized consumer and business services towards *knowledge-intensive professional services.* In consonance with Barras' reverse product cycle model, there has been a gradual shift in service innovation and productivity regimes from *efficiency* to *effectiveness*. At the same time the business responsibility is increasingly shifted to an individual account manager at the customer interface.

Appendix 2 *further highlights how technology, market structure and the rivalry are interlinked with the productive performance within the universal banking industry.* When a universal bank is knowledgeable of the evolutionary trajectory of the industry, the acquisition and retention of customers becomes significantly easier and less expensive, supplier relationships become easier to manage, and the competitive threat may diminish as the organization of the bank is perceived as distinctive. This is the main implications of the evolutionary approach to the Porterian model of strategic management. Of the four evolutionary trajectories identified in McGahan (2004) the dynamics of universal banking is best suited to the *progressive change*. Under the progressive change the *core assets* and *core activities* are unthreatened and innovation tends to be relatively small in scale. Banks innovate incrementally in ways that don't rock their core positions. Innovation revolves around constant feedback from buyers and suppliers. Growth involves geographic and product-line extensions by the banks that seek to dominate the competition in their local areas. Performance is contingent on two primary capabilities: the development of efficient set of interlocking activities, and the ability to respond quickly to the feedback from the buyers (e.g. corporate customer) and the suppliers (e.g. ICT providers). The inter-locking activities are coordinated in firm-specific ways. While each activity is relatively easy to copy, the entire system of activities is difficult to imitate by the competitors. The difficulty owes to the dynamic capabilities by which the activities are managed (cf. Nelson and Winter, 1982). As a result, powerful corporate culture emerges to coordinate choices and routines of dispersed employees. The progressive change implies that banking productivity can be defined in terms of cost-based strategy and differentiation (McGahan, 2004), which show a concave and a continuous trade-off on the best practise frontier (Porter, 1998). As pointed out in Section 4.2, an analogous trade-off between scale-efficiency and effectiveness can be identified in service industries.

Based on the mediating and long-linked perspectives to banking technology, the *'assimilation school'* in the applied economics highlights the main challenges in measuring the productivity in banking and services, more generally. However, the closer examination of the established approaches to banking productivity - scale-efficiency, cost-efficiency as well as the profit growth decomposition - shows that the implications of the assimilation paradigm are supportive of the analysis and the arguments of the descriptive value-creation approach (VCA) to service productivity. On aggregate, while the neoclassical paradigm and the efficiency perspectives represent the mainstream in the economic analysis of banking productivity, the unresolved challenges posed by the intangibility of banking

production and performance has directed the academic focus towards the socio-economic and the value creation considerations as well.

The *managerial* approach to the measurement of banking productivity is consistent with the premises of the descriptive VCA. The overall performance resulting from capital allocation, risk management and operative processes of universal banks is measured by the total share holder value (TSR), which reflects the market value of the bank. In dynamic terms, TSR reflects the net present value of the future cash flows discounted by the bank's required rate of return. This is analogous to the formulation of the value creation objective of a service firm discussed in Section 3.5.4. Based on the VCA logic, the cost-income ratio enables comparisons of the *productive performance* across banks with differing product portfolios, scale and the scope of the activities and corporate strategies. The inadequacy of the cost-income ratio to estimate customer's productivity and effectiveness suggests that the financial measurement of service productivity will benefit from the inclusion of non-pecuniary aspects of perceived quality and effectiveness in the analysis of service productivity. Highly contributory is the methodological approach of EPSI Rating, where customer's productivity is addressed separately for the 'service offering' and the 'customer service' (sales). EPSI-surveys suggest that the banks' performance in customer satisfaction is contingent on the bank's productive performance in general, and the bank's strategy with respect to scale-efficiency and effectiveness. EPSI Rating provides a viable template for the *further development* of the analytical tools and the empirical analysis of service productivity.

5.4 Strategy, organization and productivity in the case banks

It is put forward in this thesis that when managerial choices are consistent, the intangible characteristics of the overall service technology can be addressed and approximated with the more tangible characteristics of strategy and the organizational design of the service firm. Section 5.4 aims to show the competing universal banks, with shared economic goals, may differ substantially in their corporate strategies and organizational routines. Accordingly, there may also be marked differences is the banks' service technologies. Based on these considerations this section focuses on the research question*, what kinds of specifications and alternative approaches can be found in strategic management and organizational design when the synthesized (explanatory) framework is applied in the universal banking industry*? (see Section 1.2). In the light of the synthetized, explanatory value creation approach

(VCA), the objective here is to illustrate how universal banks pursue differentiated *productive regimes*[85]. A productive regime is defined here as *a systemic (heuristic) view of the top management of a service firm how to balance between scale-efficiency and effectiveness in the production and the delivery of the banking offering. This view is embedded in the corporate strategy and manifests the competitive advantage of the bank*. The method of identifying a firm's productive regime in this thesis is highlighted in a comparative case study of the specific characteristics of the corporate strategy and organization in the two Nordic banks *Nordea* and *Svenska Handelsbanken.* This involves the examination of the managerial views on service productivity by the interviewed executives in the two case banks. The managerial perceptions on banking productivity are presented in Appendix 3.

The illustration of the explanatory VCA through the banks' productive regimes proceeds in stages. Section 5.4.1 provides the overall characterization of the organizational technology of the service production and delivery. It discusses the banks' main activities, their effective coordination as well as the transaction cost rationales for vertical and diversified integration by a bank. Section 5.4.2 discusses the central role of the ICT in coordinating the main activities and enhancing banking productivity. It is put forward that the bank's ICT strategy and the information management practices are instructive in assessing the productive balance between scale-efficiency and effectiveness in the overall strategy of the banking corporation. Based primarily on qualitative data collected in the company interviews, the main implications of these two 'preparatory' sections are summarized in the generic models (visualization) of the banking activities and the banks' ICT strategies. As new contributions, the preparatory perspectives facilitate the identification of the banks' productive regimes in the subsequent analysis.

The comparison of the strategic goals of the case banks in Section 5.4.3 shows distinct corporate values with organizational reflections on service productivity as well. The analysis here and in the following sub-sections draws primarily on the company interviews and the annual reports of the case banks. This data is used to characterize the *organizational models* of the case banks in Section 5.4.4. It puts forward that the managerial approaches to service productivity are predominantly manifested in the *centralization* and decentralization of the core and supporting activities of the bank. The further

[85] More generally, this amends the productivity analysis of the structuralist approach to strategic management (cf. Porter, 1985; 1998).

inspection of the organizational models is based on the notion that banks tend to *divisionalize* the main activities *horizontally* by geographic markets, product lines or customer segments (Yilidrim, 2005)[86] and *sequentially* (vertically) by the subsequent stages in the company's value chain. Section 5.4.5 concludes that the specific pattern of divisionalization - indicating the 'divisional hierarchy' of a banking corporation - is instructive for the outline of the banks' productive regime. Organizational design of *corporate merchant banking* (CMB) that is discussed in Section 5.4.6 highlights the differences in a specific business line. Finally, in Section 5.4.7, the systemic differences in the productive regimes are demonstrated by the specific dimensions of *corporate governance*. They include the practises of business planning (budgeting), the corporate incentive schemes, the coordination between production and distribution as well as the intra-firm competition and benchmark. The analysis is completed with the key propositions on the banks' productive regimes in Section 5.4.8.

5.4.1 Main activities and the boundaries of a bank

The company interviews and the other empirical material suggest that the inter-linkages and the management of the key activities of a universal bank can be outlined (modelled) at a more general level (cf. Goddard et al., 2001)[87]. As with the other service industries based on networked business models, universal banks have to make the fundamental decision on the *centralization, decentralization* and the *mobility* of the core activities and the underlying resources. While the options are in practise limited by the physical technologies and the emergence of dominant models, the organizational design in these dimensions is of high relevance for the productivity regimes. Based on the standard practises of corporate governance, the organizational structure of universal banks builds on divisionalized functions which are coordinated through a firm-specific management and information systems. From the corporate perspective, the *core managerial activities*[88] of a universal bank are the customer *management*, the *product management* inclusive of product development, and *strategic or corporate management*. The inter-relations of the core managerial activities are depicted in Figure 36. While

[86] The underlying rationale for the divisionalization can be highlighted by the main proposition of the organizational rationality by Thompson (1967). That is, under the norms of rationality, organizations facing heterogeneous task (business) environments seek to identify homogenous segments and establish structural (business) units to deal with each.

[87] Activities within the framework of competitive advantage by Porter (1985) and the underlying organizational routines defined by Nelson and Winter (1982) are the manifestations of the *generic technology employed by the company*.

[88] There are number of auxiliary activities such as corporate procurement, investments, accounting and staff services, which are most often centralized. While the auxiliary activities bear essentially on aggregate productivity too, they are excluded from the analysis here.

highly generic and applicable to a number of other industries as well, the division delineates the technological and organizational premises applicable to all universal banks. The other banking activities consist of basic processes such as the payment services, the processing of the loan documents as well as number of supporting corporate functions.

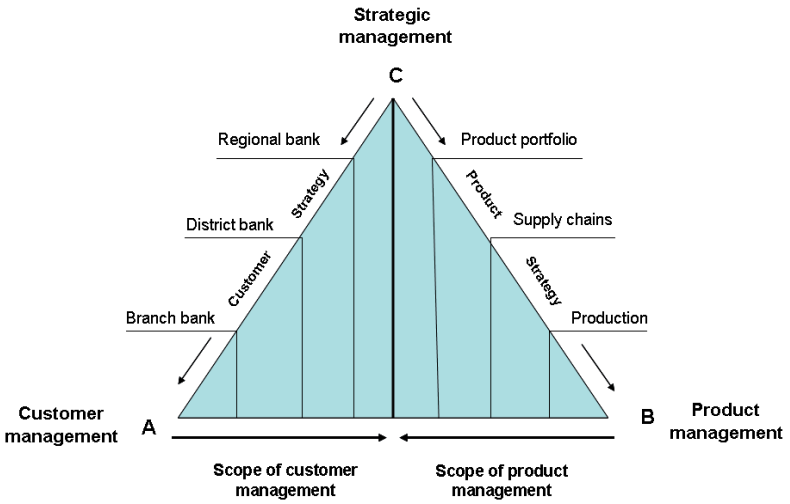

Figure 36. The core managerial activities of a universal bank.

The responsibility of the *customer management* in universal banks is assigned to the sales units. At the lowest level of corporate hierarchy the sales function is performed by *branches*, which constitute a geographically decentralized network. Based on the internal transfer prices of the products and services, the objective of the customer management is to generate high profit[89] from the sales to the banks' customers. The generation of sales profit is based on varying combinations of quantities and unit prices depending on the product and service mix offered, and the productive regime of the bank. Particularly for the most valuable corporate clients, the customer management is highly mobile, as the dedicated account managers visit and meet their key customers frequently. With the local branches providing services and products on face-to-face basis, there exist other banking channels as well. An automated teller machine (ATM) is a computerized telecommunications device which provides the

[89] In this context profit is defined as the *margin* between the external sales price and the internal transfer price of the product and the service.

customers with an access to the financial transactions in a public space. Whereas telephone banking enables customers perform transactions on telephone, the online banking (Internet) allows customers to conduct financial transactions on a secure website operated by their retail or virtual bank. As pointed out in Section 2.4, the evolving internet banking as well as other ICT-based channels transform the classical services into new forms of immaterial goods and allow the 'freedom' of conducting the transactions in time and space by the client.

In the generation of the profits, the customer management is dependent on the product management as the production of the financial products and services is performed mainly up-stream by the production units. Given the customer specifications, the objective of product management is to minimize the costs of production and the delivery, which are incurred by the branches, and ultimately by the customer[90]. In effect, the sales and production activities constitute vertically integrated value chains for each product line, the operation of which is often facilitated by a dedicated ICT support. To conclude, *owing to the specialized and vertically integrated structure (long-linked technology), universal banking departs technologically from the 'classical services' (Hill, 1977) and approximates the standard manufacturing mode.* In deviation to the decentralized branch network, the production units of a bank are more centralized, showing varying degree of economies of scale and scope (Chandler, 1990; Berger et. al., 1987)[91]. For some banking products the value chain involves also an intermediary phase called 'processing'. As a value creation activity, the processing serves a logistical function and brings the customer configurations in the delivered products and services. The processing also feeds back the market information required in the product development and provides technical consultancy to the

[90] Most often the principle of full cost coverage is applied. That is, all the costs entailed in production, development, investments and delivery are included in the internal and external product prices.

[91] To illustrate, the delivery of the financial services as packaged products is based on the synergies between the product lines, or *economies of scope* (Chandler, 1990), which favours joint production by a single production unit. Accordingly, any improvement in economies scope enables higher value added through reduced costs or increased revenues for the universal bank (Berger et. al., 1987). Within the banking industry economies of scope can be gained e.g. by spreading fixed costs or utilizing excess capacity such as the market information. In this case the accumulated information on customers' behaviour can be 'reused' to anticipate the behaviour in the cases of other banking services. On the revenue side, joint production is an effective way of pooling risks, when the demands for products and services are not highly and positively correlated. Banks may be will willing to incur additional operating costs and/or interest costs in order to reduce risks in their revenue streams (Berger et al., 1987). Economies of scope are also present in customer management, as the opportunity for one-stop shopping for the customers economizes on transaction costs and the enhanced customer loyalty. Owing to the technological diversity and the multiple sources of differentiation, competing banks may differ in the scale of operations and the product mix. The rationales for a unified ownership of the interrelated activities, i.e. the scope of the firm, are discussed at further length in Section 4.3.

customer management, respectively. To be productive, the processing necessitates some degree of mobility of the human resources between the production and the sales units.

With the product specific value chains, which define the technical core of 'the production function', there exist hierarchically structured value chains from the strategic management to the customer management (C-A) and to the product management (C-B) in Figure 36. As the highest decision making authority, the strategic management of a bank coordinates the operations of customer and product management and formulates the underlying operative strategies. In this setting strategic management constitutes a centralized core activity, which provides managerial services (Penrose, 1959) complementary to the services of the sales and the production activities (Løwendahl, 2005). The main task of the strategic management is to lay down the long term goals, e.g. growth targets, based on the market information provided by the sales and the production units. Another task is to coordinate sales and production to keep consistency between the 'long-linked' activities and compliance with the corporate goals. In the customer management, the chain of hierarchy in Figure 36 also reflects the geographic scope of business responsibility and hence the size of the focused markets. At the lowest operative level, the account manager assumes the key responsibility for managing customer relationship and sales to various customer segments. Depending on corporate strategy, branches may be specialized or non-specialized with respect to the customer segments. The branches in a specific geographic area constitute a 'district bank', which is the next upper level in the hierarchy of the customer management and the business responsibility. The administrative model applied in 'district banking' and hence the policy on corporate governance can be characterized by the degree of economic autonomy assigned to an individual branch. This holds also for the next upper level of 'a regional bank', which is usually under the supervision of the executive team of the corporation.

Compared to the customer management, the chain of hierarchy in product management is more complex and based on the scope of responsibilities over the sub-systems in the supply chains. While most of the product management is conducted in 'back-office' contrasting with the 'front-office' activities in the customer management, the organization of product management is not subject to a dominant model. This owes to a high flexibility in the utilization of economies of scope in the production of the financial products and services. The high diversity of the product mixes in the offerings is amplified by the characteristic differences between the knowledge-intensive services such

as investment banking, and the ICT-based financial commodities exemplified by the cash management systems. In general, however, three levels of business responsibilities can be identified. The physical *production* of the financial services in each product line is often accompanied by product development and a dedicated ICT support. The operations of internal supply chains from the production to sales, including processing, marketing and consulting, are managed at a next higher level of corporate hierarchy[92]. At the highest level of authority, the product management is focused on the strategic design of the product portfolio of the bank. Product portfolio management, which usually receives its mandate from the executive team of the corporation, collects market information on products and services. This information is utilized in the product portfolio development.

The strategic decisions of how to coordinate the banking activities encompasses the coordination through the markets and hierarchies as well. *The make-or-buy issue is particularly relevant for universal banks which show high degree of diversification and vertical integration under a unified ownership.* In part the integrated structure is dictated by the regulation and the banking law. For instance, the services in transactional banking, which are based on scale-intensive, repetitive and highly automated processes, could be profitably outsourced to a specialized supplier. High standards set on banking confidentiality and privacy protection, however, impedes the externalization of transactional and related banking services by the universal banks. Owing to the high technical interdependencies between transactional banking, cash management systems and account products, as well as the firm-specific capabilities embedded in the value chains, outsourcing of the product activities would also lead to excessive contractual costs (cf. Williamson, 1985). Consequently, beyond the security considerations, banking regulation tends to foster economically inefficient or, 'too integrated' organizational structures. While practically non-existent, vertical disintegration between the production and the distribution could be economically feasible option. This is particularly case with banks implementing the 'follower strategy' (Tirole, 1989) in the product management[93]. In Finland for instance, some small regional banks and Svenska Handelsbanken have outsourced the service activities related to the maintenance of the ICT product applications (see also Appendix 2).

[92] Some of the processing and related activities may be assigned to branches as well.

[93] In such a case the banking products show a low asset-specificity with respect to the sales activities, and the product management thus lies outside the core capabilities of the bank (Teece et al., 1997). Vertical disintegration is impeded however by the 'thinness' of the market or the lack of independent product and service providers.

From the distinct product development strategies follows that the products and services are highly specific to the bank and its sales activities (cf. Masten, 1982; Williamson, 1985). The outsourcing of production in this case is impeded by the apparent contractual hazards entailed in the market governance. Product innovation and commercialization imply high sunk investments and the resulting need for high capacity utilization (frequency of transactions). As noted by an interviewed banking executive "banking products or services cannot be produced for storage". Given the significant quality externalities in the distribution (Williamson, 1981), vertical integration under the unified ownership is favoured over market procurement. At the margin, universal banks address the make-or-buy issue with respect the activities that are less subject to the regulatory setting. Tangible and easily tradable products and services, which lie outside the core competences of the bank and serve as to maintain the range of products and services exhaustive, are increasingly purchased from the competitive markets[94]. This is the case with many insurance products and 'product-like' investment stock funds. In the knowledge-based services of the capital markets and the investment banking, in contrast, where innovation requires continuous learning, imitation is difficult, and the utilization of market procurement is costly (Teece, 1980; 1982; 1986a), there is no alternative to internal production. At the customer end of the value chain, new business opportunities for an enhanced product diversification emerges as corporate customers outsource their treasury activities to banks' asset management and risk management units[95].

5.4.2 The strategic role of ICT

The implementation of information and communications technologies (ICT) reshape the business activities and enhance the productivity of the value creation processes within the universal banking industry. At the optimum, a bank's ICT strategy is aligned with the objectives of the corporate strategy and hence the productive regime (see below). The production and delivery of the financial services and products is increasingly based on advanced ICT applications, which improve the cost- and scale-efficiency of the transactional processes. As with the labour costs, the operative costs of ICT

[94] The rationale for diversification in such a situation follows the reasoning of Penrose (1959). If the new 'line' is successful, other firms will be forced to follow suit; the necessity of carrying a 'full line' then becomes an important reason for diversification.

[95] Along with the utilization of economies of scale and scope, the size and the hierarchical structure of the leading universal banks follows from the general argument by David Teece in his path-breaking article: *Profiting from Innovation* (1986). That is, hierarchy is favoured to the extent that the commercialization of innovations necessitates the utilization of complementary asset (production and distribution), the information is subject to weak property rights regime (product information externalities) and the complementary assets needed are specific to the innovation (organizational capabilities within the value chain).

(investments and the maintenance) is a significant cost category included in the internal transfer prices the bank's product lines[96]. The ICT cost assumes approximately 30-40 % of the total operative costs in the banking industry. This is almost as high as the share of the labour costs which amounts approximately to 50-60 %. Within the classification of Van Ark et al. (2003), where the distinction is made between the ICT-using and ICT-producing services, the banking sector is regarded as an *archetype of the ICT-using services*. This characteristic is also taken as the major explanation of the high labour productivity (value added/ hours worked) within the banking sector (OECD, 2005a). On the basis of the new qualitative data of this study, it can be concluded that the production of the financial products and services makes universal banks *significant producers of the ICT-based services as well*. Moreover, the digitalization of the financial offering and the computerization of the delivery channels are expected to enhance the productivity growth of the customer industries (cf. OECD, 2005c)[97].

Owing to high ICT-intensity of the banking processes, the traditional (economist) view of the appropriate measurement of banking productivity also needs qualification. As manual work has been increasingly replaced by ICT, the key question is no more how much value added can be generated from a bank's labour inputs, but rather *what is the value adding capacity (productivity) of bank's ICT infrastructure*. The most critical issue with regard to labour and competitiveness is the availability of human capital capable of managing the ICT-guided production and business system, and thereby to release the productivity potential embedded in the bank's information systems. The role of the information systems and responsibilities in the value chain of a universal bank can be highlighted by the chain of promises depicted in Figure 37. The sales units, which make a promise to the customer, are thus responsible for the customer management. This promise relies on the promise of the ICT-based delivery by the product and service units to the sales units, as well as the promise by the ICT sales support, which maintains customer relationship management (CRM) systems. In large banks, the product lines (units) are further supported by 'dedicated' ICT units, which maintain and develop product-specific platforms and applications. Usually the ultimate responsibility for the internal and

[96] Moreover, as the management of customer and product information as well as the accounting, reporting, and business planning processes are performed by advanced information infrastructure, strategic planning within the universal banking industry has become increasingly reliant on, and guided by the technological advances in ICT.
[97] This is the indirect productivity contribution examined e.g. by Wölfl (2003).

external functioning of the banking processes is assigned to the head of the corporate information systems.

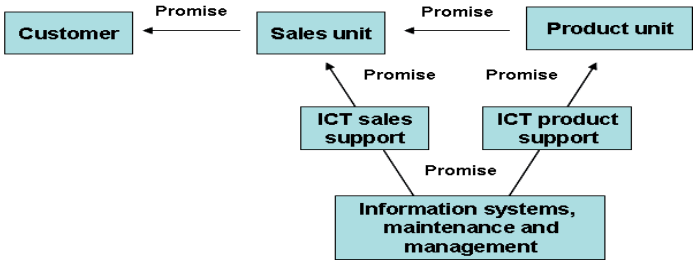

Figure 37. The role of ICT within the bank's 'chain of promises'.

A complementary way to address the importance of the information and communications systems to productivity is to identify the strategic domains, where ICT can support the competitive advantage of a bank. From the corporate perspective, the information systems are competitive to the extent they are capable of advancing the strategic goals of the bank. In reference to the Porterian (structuralist) approach to the competitive strategy (Porter, 1985; 1980), *ICT is implemented to promote cost-leadership and differentiation*, that is, *the product-based strategy.* For the cost-based strategy, ICT is utilized to outperform competitors with cheaper products based on cost- and scale-efficient processes. While the universal bank shows a general strive for the cost-leadership (McGahan, 2004), there exists bank-specific differences in the emphasis and the modes of cost-cutting. The product-based strategy, where the utilization of ICT is focused on the product differentiation, requires substantial investment in R&D particularly in the global competition. This assumes specialization with respect to a bank's product portfolio.

The information systems also enable the third strategy - *customer-based* strategy, which amends the Porterian model of strategic management. In this case, ICT is utilized for the compilation, processing and storing of customer-specific information, which enables higher value of sales, customer satisfaction and hence the continuation of the banking relationship (customer retention). While customer orientation is the proclaimed strategy in most banks, there exist considerable differences in the actual approaches and implementation. The main distinction can be made between *ICT-guided* and *ICT-supported* approaches, which parallel with the codification and the personalization strategies of the

knowledge-management systems in the consulting services (Hansen et al., 1999). The ICT-guided strategy involves a constant follow-up of the economic status of the clients, their purchases from the bank, and the estimation of the sales potential in the future. Customer intimacy is pursued through advanced customer relationship management (CRM) systems, targeted marketing campaigns and segmentation, which facilitate the production of the pre-designed offerings (package) for each customer segment. Through codification, knowledge can be stored so that it is accessible and used easily by anyone in the company (Hansen et al., 1999). Accordingly, this opens up the possibility of achieving economies of scale in knowledge reuse and thus growing the business (op. cit.). For the ICT-supported customer strategy, the chief purpose of ICT is to help people (seller and the customer) to communicate knowledge, not to store it. Knowledge on customers' needs is primarily, tacit collected through face-to-face interaction with the clients, and shared through networks of people within the bank. The related personalization strategy is distinctively less focused on segmentation, utilization of scale economies, or the reuse of customer information. Instead, a higher emphasis is laid on the search of customized solutions for unique problems, which stresses the effectiveness of the service offering.

The 'triplets' of the ICT-facilitated corporate strategies in Figure 38 summarizes the strategic space in the competitive positioning within the universal banking industry. The construct of the model is based on the dialogue with the head of information systems of Nordea. It is essential to note that the model is compatible to the value creation approach to service productivity (VCA), as each corner (strategic domain) in Figure 38 balances between scale-efficiency and effectiveness. Of the two case banks, 'Svenska Handelsbanken' is balancing between cost-based and customer-based strategies, with a lesser emphasis given to product development and differentiation[98]. The customer-orientation in Svenska Handelsbanken is based on ICT-supported strategy, which is reflected by substantial outsourcing of the ICT-services and product applications. 'Nordea' in turn shows a higher product-orientation and overall balance with respect to the three strategic domains. Consistent with the product-oriented organizational structure, the key aspect in Nordea's customer management is customer-intimacy based on a distinctive codification strategy. Corporate policy in both domains is supported by the extensive in-house production of the ICT services[99]. Beyond the overall strategy of a bank, an individual product line and customer segment may require different approaches with respect to the three strategic domains. The

[98] The recently launched development project called 'product ownership' is a new initiative reflecting an increased product-orientation in Svenska Handelsbanken.
[99] The ICT department of Nordea Group employed some 1700 people in 2009.

requirement for the cash management system for instance, by many domestic corporate clients and industries may by high standardization and scale-efficiency, while multinational corporate customers often expect more sophisticated and tailored cash management solutions. Asset management and investment banking are archetypes of product lines, where high customer-intimacy is a precondition.

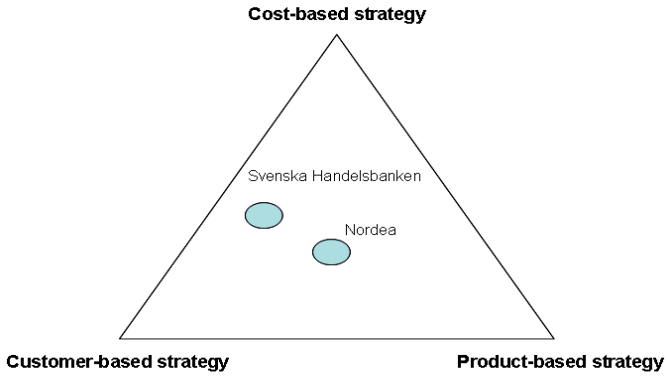

Figure 38. The domains of ICT-facilitated corporate strategies.

In conclusion, ICT holds a marked potential for a higher banking productivity in all three domains. With the productive opportunities come also the major challenges. Through the geographic expansion of the banks and the growing investments in the new sub-systems, the ICT management is faced by the accumulated problems of the incompatibility between the various 'layers' of the corporate information systems[100]. This is a particular problem in the situations, where the cross-border acquisitions and the green-field investment in different countries are subject to the harmonization of the business models set at the corporate level. Whereas ICT enables the utilization scale economies in geographically dispersed business activities, uniformity is often hampered by country-specific differences in the ICT infrastructure and legislation. These problems will be partially off-set by the growing standardization and 'commoditization' of information processing services, and the automation of the software production. Standardization is conducive to enhanced outsourcing of ICT by the banks, while automation is a precondition for the improved cost- and scale-efficiency of the external supply of ICT. The biggest managerial challenge is to recognize that corporate ICT services is not a cost-cutting

[100] This is called the embedded inflexibility -problem.

'island' isolated from the core activities of the bank. The more information systems, customer management and product management can be organized along co-operative teams with improved communication, the more innovation and productivity can be extracted from the internal value chains and the ICT capabilities of the bank. As noted by Hansen et al. (1999), companies that isolate knowledge management in functional departments like HR (human relations) or IT (information technology) risk losing its benefits.

5.4.3 Strategic goals in the case banks

The company policies in ICT and knowledge management follow from the strategic goals of the banking corporations. *The corporate goals of Svenska Handelsbanken are predominantly qualitative, expressed at a systemic level.* According to the annual review 2009, Svenska Handelsbanken is a universal bank, which offers a full range of financial products and services in Sweden, Denmark, Finland, Norway and in Great Britain. The bank regards these countries as its domestic markets. Handelsbanken's goal is to have higher profitability than the average for banks in its home markets. The goal is pursued via more *satisfied* customers and lower costs than the competitors have. The business idea is essentially based on trust and respect for individual customers and employees (Svenska Handelsbanken, 2009). The essence of the strategic goals of the bank is reflected in the slogan 'the branch is the bank' which implies that all business decisions concerning the individual customer's relationship within the bank are made by the local branches. The bank's organisation and working methods are based on the branches' responsibility for individual customers and not on the central departments' responsibility for product areas or market segments. Svenska Handelsbanken's concept is to offer private and corporate customers a full range of financial services and a high level of service *based on the customer's requirements and a personal relationship*. The bank does not strive to be a mass-market bank. Instead, it aims to do business with customers who have a stronger cash flow than the average bank customer (Svenska Handelsbanken, 2009).

The branch-centric approach is associated with other complementary elements. In particular, since the branch is the bank, there are no central market plans or marketing campaigns e.g. on prioritized product or services. Nobody knows better than the local branch which efforts are required in the local area. Svenska Handelsbanken has consistently and successfully applied this basic concept for many years. While the business decision-making process is highly decentralised, the bank's credit policy applies

throughout the group and is therefore centralised. Svenska Handelsbanken has a low risk tolerance. Growth is necessary in order to achieve and maintain high profitability. The bank's growth is based on doing more and better business in its existing branch operations and opening new branches in new locations. Regardless of where an employee works in the organisation, the purpose of their work is the same: to meet the customer's requirements. In the case of customers with special requirements, the branches may delegate the business responsibility to a regional unit or a central business area[101]. The interaction between branches and central business areas/departments creates a dynamic organisation, which benefits customers (Svenska Handelsbanken, 2009).

As the branches hold the main responsibility for the customers' value creation, the availability of the bank's services for the customers and the reorganization of work at the customer interface assume high priority in the corporate goals. "To meet this greater demand from our customers – while keeping costs in check – we have continued our work to boost *productivity*. Since its launch in 2006, the programme to improve productivity has increased the time available to meet customers by 40 %. But we believe that there is a greater potential for further rise in productivity" (Annual Review, 2008). With the streamline of the working procedures, the increased customer time is searched from the opportunities of doing business outside office hours via the internet and the phone service Handelsbanken Direct, which is staffed around the clock by experienced banking employees led by a branch manager. The objective here is that customers should be able to discuss and carry out advanced banking transactions with expert help, even when their own branch is closed. A complementary and contested way of enhancing time for customers is the increase of the opening hours of the branches in the evenings and the weekends.

Also the central aspects of *Nordea's* strategy are incorporated in the corporate goals and communicated to the shareholders and potential investors. In deviation to Svenska Handelsbanken, however, *the corporate goals of Nordea are distinctively quantitative and presented systematically at a various levels of the corporate hierarchy*. The hierarchy of the corporate goals in Nordea is presented in Figure 39, which is constructed from the data received in the company interviews. According to the annual review 2009, Nordea's overall mission is to make it possible for its customers to reach their objectives.

[101] The four central business areas/product owners are Stadshypotek, Handelsbanken Capital Markets, Handelsbanken Asset Management and Handelsbanken Finans (Svenska Handelsbanken, 2009).

Nordea has an ambitious vision of being the leading Nordic bank, acknowledged for its employees, creating superior value for the customers and the shareholders. The mission and vision of the bank are supported by the 'triplets' of corporate values. "Great customer experiences" (i.e. customer satisfaction) is the core value that guides the behaviour and decisions of all employees. "It's all about people" (i.e. employee satisfaction) is the second value, and recognizes that people make difference and business growth and growing competences of people (i.e. human capital) go together. The third value is that "customers will experience one Nordea team" (i.e. the efficient division of labour) working together to find the best solutions for them. Based on the managerial interpretation, the successful implementation of the values is reflected in improved customer satisfaction and loyalty, also relative to competitors, and in higher scores of internal employee satisfaction (Nordea, 2009).

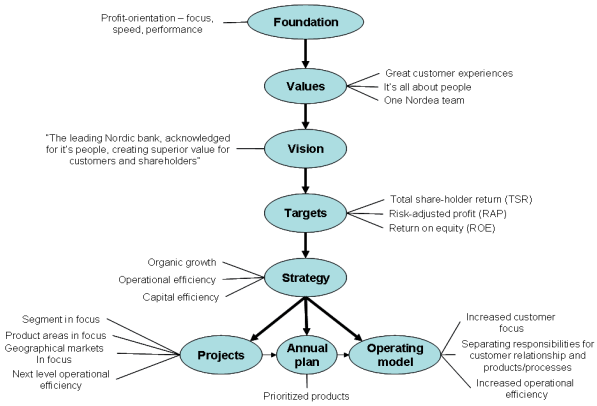

Figure 39. The hierarchy of the corporate goals in Nordea.

Corporate values provide the general guidelines in the pursuit of the financial targets. They reflect the ambitious vision of value creation, which is measured by total shareholder return [TSR]. The profitability dimension of value creation is measured by return of equity [ROE] and the long term growth dimension by risk-adjusted profit [RAP] (Nordea, 2009). In connection to the quantitative targets set for these indicators, Nordea has adopted an explicit risk management and capital structure policy and capital ratio targets[102], which are adapted to changing market conditions. Subsequent to the shifting strategic priorities at the beginning of the 2000s, Nordea has embarked on a clear organic

[102] The capital ratio is the percentage of a bank's capital to its risk-weighted assets.

growth strategy in the Nordic markets, as well as in the New European markets. The first and most important organic growth areas are to increase business with the existing household and corporate customers and to attract new profitable, high quality customers through a proactive relationship banking strategy. The organic growth strategy is facilitated by the focused policy to take Nordea to the next level of operational efficiency, where a central role is played by the operating model (see below).

The fundamental principle in Nordea's operating model is to ensure clear responsibilities and avoid overlapping of activities across organizational units and across borders along the value chain. The operating model represents the lowest level in the hierarchy of the corporate goals shown in Figure 39. *Suggesting a hierarchical top-down approach, each level in the hierarchy follows from the upper level goals.* Strategy, which operationalizes the quantitative targets set at the highest level of authority (executive team), can be presented by the generic decomposition of ROE (see Section 5.2.5). The elements in the decomposition highlight the changing strategic focus since the formation of Nordea in 2000. On the basis of quantitative targets, the present focus on the organic growth is implemented through specific projects within four strategic domains. These domains are the 1) customer segment, 2) the product area, 3) the geographic markets, and 4) the increase of operational efficiency which supports the other three areas. The segment in focus follows from the explicit division of customers into household and corporate segments, which are further divided into four categories based on their actual and potential value for the banking business and the generation of profits. The focused product areas imply that organic growth is facilitated by product development and the promotion of prioritized products and services. The focus on the geographical markets implies the implementation of specific growth plans in each of the four Nordic countries, Poland, Russia and the Baltic countries. The focus on the operational efficiency implies that cost- and scale-efficiency is regarded as an important source of increased competitiveness (Nordea, 2009).

5.4.4 Centralization versus decentralization

The pattern of centralization and decentralization of the business activities and responsibilities follows from the corporate strategy and indicates the dimensions of productivity, which are prioritized by the management of a bank. *In Svenska Handelsbanken, the decentralization of the business activities and responsibilities is supportive of resource flexibility and effectiveness of the banking products and services.* As the present business model is largely the creation of Jan Wallander, the appointed CEO in

1970, the overview on Wallander's ideas on the principles of 'decent banking', will be highly contributory to the analysis[103]. Based on his earlier business experiences, Wallander was aware and concerned about the risks of conflicts associated with the detailed goals set for a firm. According to Wallander (2002), the formulation and expression of goals is often complicated. There may be conflict between the short-term and long-term objectives. What seems to be good for the present is not necessarily so in a longer perspective. For instance, the objective may be to increase the volume of sales and after a while the objective is achieved, but this may eventually turn to substantial losses if the growth of sales is directed to customers with low creditworthiness. Wallander asserts that a growth strategy risks of loosing effective control on costs. And if the outright policy is boosting sales, the management can intervene only through centralization. This implies that a strategy based on growth of sales is inconsistent with a decentralized organization[104]. Nevertheless, if the objective of a bank is to increase productivity (efficiency) this should not take place at the cost of bad quality, high reclamation costs or annulments. In a similar vein, there may be conflicts between the goals of the various parts of the firm[105].

In Wallander's reasoning, effective management and organization of a firm accounts for the basic premises of the psychology of the human nature and behaviour. The fundamental challenge in organizing an enterprise or social activity is how to make a group of people, in a harmonic co-operation, strive for a common goal, and to do it with pleasure, commitment and enthusiasm. Any improvement in this respect will result in an improved performance. Consequently, it its clear that to make the employees committed to the goal, it is necessary that they perceive the goal as clear, comprehensive and attainable. Moreover, to make the goal feasible, it has to be clear for the employees how their personal input will contribute to the attainment of the goal. This latter requirement is of high importance for the choice of the organizational form[106] (Wallander, 2002). As a young scientist in the 1950s Wallander became increasingly convinced of the importance of the 'inner milieu' of an organization for employees' satisfaction. The quality of the 'inner milieu' can be assessed with respect

[103] The main source of data here is Wallander's book: *Med den mänskliga naturen – inte mot, att organisera och leda företag* (2002).
[104] Following the logic of Wallander an appropriate objective for a decentralized organization is thus *profitability*, which implies a high managerial freedom in choosing the value creation tactics.
[105] In general, this may be taken as an implicit statement that the standards of the desirability in an organization are unambiguous.
[106] Here Wallander makes an indirect reference to the M-form (multidivisional form) which is also suggested by Williamson (1985).

to the satisfaction of the immaterial human needs, such as feel of community, encouragement, initiative and increased responsibility.

Based on earlier academic studies and his own insights, Wallander (2002) asserts that there exist specific characteristics of an organization conducive to a high satisfaction of the human needs. First, the basic accountable units have to be small, and second, the decision-making power and responsibility must be as decentralized as practically possible. According to Wallander (ibid.), organizations are decentralized to the extent that the decision-making authority and responsibilities are brought down in the hierarchy of the organization. In the case of Svenska Handelsbanken this implies a profit centre organization, where the 'branch is the bank' and the principal accountable business unit. Along with the higher employee satisfaction and commitment, decentralization is accompanied by other distinct advantages including the *proximity to the customers and the opportunity to adjust the decisions and actions (services) by the needs of different customers and local circumstances*. Decisions can be made quickly, and there exists the possibility in a small scale to try out different solutions, which can make the enterprise dynamic.

Te reasoning of Wallander implies that the decentralization of the banking activities induces higher labour productivity (scale-efficiency and effectiveness) in two ways. *First*, the higher quality of the 'inner milieu' reflected by a high employee satisfaction will result in an improved productivity of the labour services at the customer interface. Within the decentralized regime, the headquarters was made the servant of the branches, which for Wallander represents the opposite of the mainstream within the banking industry. It is the branch, however, which brings the revenue to the bank. Hence, the *second* source of an increased labour productivity is the cut-down of the 'unproductive bureaucracy' of the headquarters and the increased cost-transparency of the centralized and the decentralized activities. On aggregate, Wallander concluded that the delegation of duties down in the administrative hierarchy as well as the decreased administrative burden associated with the improved cost control should result in lower unit costs (cost-income ratio) and higher customer satisfaction relative to the competitors. As indicated by the bank's performance for the past 30 years, the conclusion was largely correct.

In deviation to the standard practises in internationally listed companies, Svenska Handelsbanken does not use organizational charts to demonstrate outside how the activities and business units of the

corporation are organized and interrelated. This follows partly from the company's deliberate policy in conveying the values and the corporate culture to the customers, shareholders and investors. Since an organization chart is a clarification of how the hierarchical structure of the company looks like, it is a source of major problems (Wallander, 2002). Any changes in corporate structure would require changes in the chart as well, which may give unintended and counterproductive signals e.g. to career-oriented employees. An organizational chart is a simplification and thus an inadequate description of the cooperation of individuals with differing characteristics and power. On balance, informality of the decentralized organization that accounts for the characteristics of the human nature lays the basis for the unique business model[107], which the competitiveness of Svenska Handelsbanken is considered to rest on. Reflective of these principles, the operating model communicated to the bank's stakeholders in Figure 40 is systemic and presented horizontally.

Figure 40. The operating model of Svenska Handelsbanken (Annual Review, 2009).

Representing the conventional pattern within the banking industry, *the centralization of the business activities and responsibilities in Nordea is supportive of the specialization of resources and the scale-efficiency of the banking services and products.* Lacking a sound business philosophy comparable to Svenska Handelsbanken, the analysis of centralization in Nordea's case builds on the data of the annual reports and the company interviews. The corporate objective of organic growth is promoted by the operational efficiency of the operating model which is subject to the hierarchically organized administrative structure. Common to all Nordic markets the operating model is gradually being implemented in new European markets (Annual Review, 2009). Depicted in Figure 41 the operating model is a specification of the long-linked technology (Thompson, 1967) in the bank's four value chains, where the production and the sales units are specialized profit centres.

[107] The principles are expressed more systematically in the booklet *Mål och medel* written at the beginning of the 1970s by Wallander. As a common practise, Mål och medel is revised by every new appointed chief executive and distributed exclusively to the staff members. The booklet is thereby inaccessible to researchers.

The sales division, called Nordic banking, is organized hierarchically by the four regional banks (see Figure 36), which are responsible for the customer management (sales operations) in each of the four Nordic countries. The regional banks in turn operate some 20 district banks, whose position in business responsibility is comparable to the branches in Svenska Handelsbanken[108]. Each district bank consists of a number of branches which are 'specialized sales organizations' having low economic or strategic autonomy. Owing to the restructuring and the re-location of the production units across the four constituent countries, product management is on aggregate less systematically organized than Nordic banking. The production division is based on the hierarchical management depicted in Figure 36.

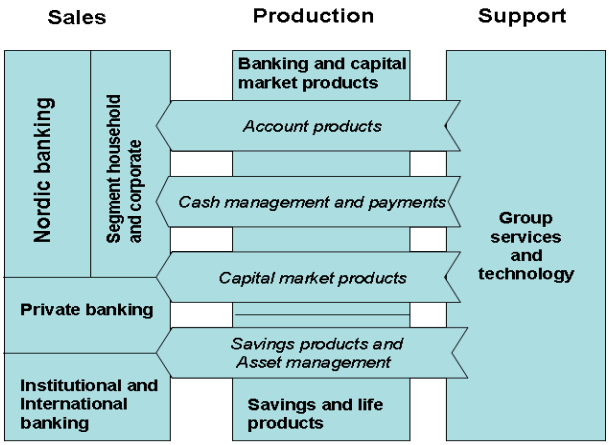

Figure 41. The operating model and the value chains of Nordea (Annual Review, 2009).

The operating model and the prioritized product areas suggest a *product-oriented approach* to the banking business. According to the annual review 2008, Nordea's operating model is designed to support the organic growth strategy and to ensure operational efficiency by improving the quality of customer relations, by increasing the time spent with the customers and by reducing the time required to bring new products and services to the market. The household banking relationships are supported by a focused product strategy. Nordea has a broad and well-performing range of products, a highly skilled product organization and a strong distribution power. Product development in the current market environment will ensure a flexible range of products. In the product strategy for corporate

[108] Strategically, however, Svenska Handelsbanken's branch is a closer counterpart to Nordea's regional bank.

customers, Nordea aims to make risk management products and capital market transactions a natural part of the basic product offering to customers in the segments of large and medium sized companies. The product-orientation is suggested by the managerial interpretations as well. According to an interviewed executive, "it is a good question whether it [the operating model] is product-, or customer-driven. We would like to see that the driver of the value chain is the customer needs, but it is just organized into these four product lines, which makes it efficient". The sensitivity of the issue is reflected by the notion of an interviewed manager that "I would probably be shot [by my boss] if it turned out that I have prescribed our operating model as product-oriented. [However], we have identified a kind of problem, that we have emphasized too much the product-push [in our strategy]. Now the customer interface has become the driver".

Customer segmentation is a standard practise to utilize economies of scale in the production and the sales of the banking products and services (Yilidrim, 2005). Based on the value and the volume of sales, the household customers are segmented into private banking customers, gold customers, silver customers and bronze customers. With the identification of the 'representative patterns of demand in the different wealth categories, the rationale for the hierarchical segmentation is to boost sales and the concentration of customers' purchases to Nordea[109]. Corporate customers are also segmented hierarchically based on the volume of sales and the size of the company. On the top of the hierarchy are the customers in corporate merchant banking (CMB), the biggest and often listed companies that are attended in strategic partnership with tailored services and solutions. The other segments are large, medium size and small enterprises, accordingly. Customer segmentation is fostered through the specialization of the branches in the segments of the highest value to the bank. Indicated in Figure 41 private banking constitutes a separate business unit with a specialized branch network. In a similar vein, there exists a specialized sales unit for the CMB customers in each of the Nordic countries and for the large and medium size customers in specific regions and districts. The specialization of sales and customer service by customer segments is driven by two sources of productivity. *First*, there exits inherent economies of scale in serving each segment based on the 'average pattern of the financial needs'. This is fostered by the pre-designed product- and customer service concepts for each segment

[109] More specifically, the objective of the strategy is to provide the best service and advice and best product solutions and prices to the customers generating most business and income to Nordea. The short-term focus is to identify and to migrate customers into the private banking and the gold customers segments and to improve *efficiency of the services* to the customers in the Silver and the Bronze segments (Nordea, 2009).

(see below). The *second* source of productivity is the accumulated learning and human capital as well as knowledge spill-overs among the account managers. The utilization of learning requires a spatial proximity. As noted by an interviewed executive "it is good to have sparring colleagues nearby for the construct of your offering…at the same time you learn something new…[in this regard] it makes sense to concentrate skills and knowledge in one place".

The project called the next level operational efficiency in Figure 39 is of a particular interest here. It is concerned with two interrelated organizational objectives, the *harmonization* of activities and processes across the four constituent national banks (unification), and the *centralization* of the core and supporting activities in the large-scale units (centralization). These two objectives coincide in the development of the operational model. Harmonization, which is reflected by the idea of 'one Nordea team', involves three focus areas. The first is the harmonization of the *ICT platforms*, a challenging task where the objective is to streamline the production, sales and managerial processes, and economize on the scale in the information management. The ICT harmonization is highly relevant for the second area: the unification of products and product development where the utilization of scale-efficiencies need to be balanced with the heterogeneity of the business environment in each of the four countries. The product development and competitiveness in the product lines draws on the common and dedicated ICT support units. The third focus area of the harmonization is the *sales processes (concepts)* designed for the four customer categories within the corporate and the household segments. The guiding principle in the sales process is scale-efficiency which implies the identification of the right segment for the customer, the selection of the right course of action (customer service), and the selection of the right offering (financial products and services). The service concepts are associated with contacting rules and plans, as well as the monitor of the customer needs and profiles (Nordea, 2009). The design and implementation of the service concepts is assigned to the specific *segment groups* to assist in the sales to the corporate and the household customers in each of the four Nordic countries[110]. The segment groups facilitate the scale-efficient coordination of the operative model, as the service concepts build on the information on the production possibilities received from the production units and the market needs received from the sales units. As a corollary, customers' direct involvement in the production

[110] Contributory to an increased volume of sales, the implementation of pre-designed service concept reflects a strategy, where the productive balance is shifted from effectiveness to scale-efficiency.

and design is limited, and the account manager can allocate (concentrate) the working time to the sales of a higher number of customers.

The service function performed by the segment groups manifests more generally the search for improved division of labour between the activities and hence new opportunities to enhance scale-efficiency. The centralization of the supporting activities takes place at two hierarchical levels. Activities such as ICT, the procurement and human relations as well as other staff functions shared by the regional banks are organized at the corporate level. Most of the activities directly related to the banking processes are organized centrally at the headquarters of each regional bank (country). These activities include economic research, the analysis of the financial statements of the customer companies, the processing of loan documents, marketing, call centre services as well as transactional services[111]. An ongoing project, which is aimed to foster centralization, is called *Future Branch*. The purpose of Future Branch is to foster the specialization of the branches in the sales activities. This involves the transfer of the administrative work to the production units and the other supporting service units. In consonance with the objectives of the predesigned service concepts, Future Branch aims to increase the working time of the account managers in the sales and the customer service[112]. High potential for an increased time to the customer lays in the more extensive utilization of scoring and automation in the credit decision processes as well (Nordea, 2009; cf. Yilidrim, 2005).

5.4.5 Models of divisionalization

The hierarchy (order) of the divisionalization of the business activities by a bank reflects the managerial perceptions on the proper division of labour, and thus the dominant *technology* in the provision of banking products and services. *The model of divisionalization in Svenska Handelsbanken is consistent with the pursued flexibility of resources and the preference of effectiveness over scale-efficiency in producing and distributing the banking services and products.* Since its introduction in 1971, the organizational model of Svenska Handelsbanken has been largely unchanged and is implemented in a similar way in each of the Nordic countries and the UK. The hierarchy of

[111] In general, these activities are more decentralized in Svenska Handelsbanken performed mainly by the branches.
[112] The *motion studies* conducted at the corporate level investigate how the effective working time is allocated in the branch activities. It has turned out that account managers use only some 30 % of their working time in the sales activities. The objective of Future Branch is to raise the share over to 50 %. Within the productivity analysis of Jackson and Peterson (1999), this implies the increase of the value-adding time of the account manager with respect to the total working time.

divisionalization depicted in Figure 42 is based on the company interviews and the data of the annual reports.

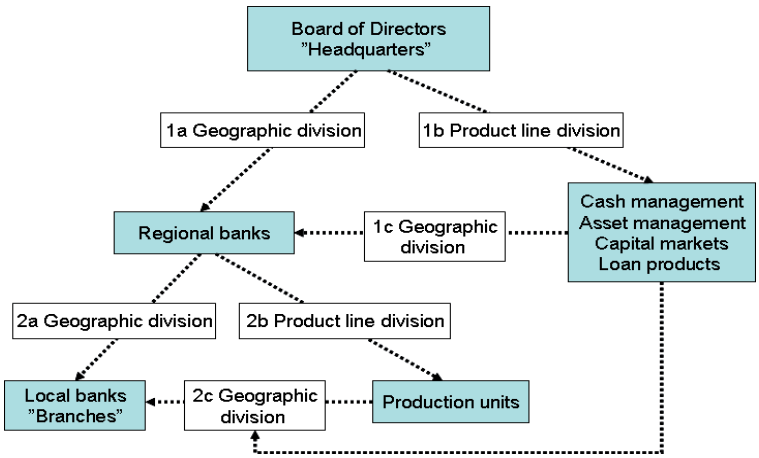

Figure 42. The hierarchy of divisionalization in Svenska Handelsbanken.

On the top of the hierarchy in Svenska Handelsbanken's model the dominant division of the banking activities is made by the geographic markets i.e. country (1a), and the product lines (1b)[113]. Regional banks are independent, administrative profit centres accountable to the headquarters, whereas the product lines are composed of the principal 'product owners', having the highest responsibility for the banking products and services[114]. Distinctively, Svenska Handelsbanken lacks an explicit sequential division, as the products and services sold in each region (country) are produced variably by the central units at the headquarters, by the regional banks or the local branches. The indeterminate organization of the products and services has evolved historically, and reflects the high independence assigned to the regional banks as well as the high emphasis given to the regionally differentiated demand, sales and customer service in the bank's strategy. As noted by one interviewed business manager "the products side in Svenska Handelsbanken has always been an ignored area of focus" [115]. Accordingly, in Figure

[113] In Figures 42 and 43 the white boxes indicate the order and the mode of divisionalization, whereas the coloured boxes indicate the accountable business units.
[114] The loan products in Figure 42 constitute a separate product group also including the lending activities of Stadshypotek and Handelsbanken Finans.
[115] To mitigate the problem Svenska Handelsbanken has launched a project to specify the product ownership in each product line and at each level of the corporate hierarchy.

42 there is a geographic division of product lines at the regional and the local levels indicated by the rectangles 1c and 2c. From a functional perspective the regional banks are smaller scale replicas of the 'bank', whereas the branches in a country are the replicas of the respective regional bank. Consequently, *the hierarchy of divisionalization in Svenska Handelsbanken indicates that the underlying banking technology is seen more in terms of the intensive technology rather than the long-linked technology* (Thompson, 1967).

As independent profit centres, the branches purchase the intermediate 'banking inputs' from the product owners of the 'bank' and the other operative inputs from the local providers. Branches are specialized exclusively by the geographic market, where they are located in. This implies that branches are differentiated by the local customer base upon which there is no competition among the neighbouring branches. Most of the standard products and services sold by the branches are produced and delivered by the product units of the regional bank (2b), whereas more sophisticated products and services e.g. in capital markets products and in asset management services, are produced and delivered by the 'product owners' at the headquarters (2c). These business units appropriate part of margin of the sales through the local branches. Having the principal customer responsibility the branches retain the profits from the products and services produced locally. From the principle 'branch is the bank' follows that branches are not comparable to the sales units (branches) in Nordea's organization. With the distribution of the banking products and services, the activities of a branch in Svenska Handelsbanken encompass the processing of the purchased banking products as well the provision of transactional and miscellaneous administrative services directed to the customers of the branch. As a rule of thumb a branch is not allowed to grow over the size of ten to fifteen employees. The rationale for this is to foster the spirit of entrepreneurship, i.e. to keep the organization lean and responsive to the needs of customers and employees, all conducive to a higher labour productivity and customer satisfaction.

As an archetype of the multidivisional form, or the *M-form* (Chandler, 1990; Williamson, 1985), the organizational design of Svenska Handelsbanken rests on the rationales raised in transaction cost economics and the organization theory. The guiding principle of the multidivisional form is coupling divisional autonomy with centrally controlled performance evaluation and resource allocation, where the divisionalization is based on groupings by products or markets overlaid on functional forms. The superordinate corporate level oversees divisional performance and allocates resources, accordingly

(Scott and Davis, 2003). The comparative advantage of the M-form to the U-form becomes pronounced in the face of corporate growth. The traditional functional form is exposed to communication overload and bounded rationality of the management as the managerial services become increasingly congested. Decomposing and decentralizing of managerial responsibilities along independent product lines and geographic profit centres mitigates the costs of bounded rationality and at the same time attenuates opportunistic pursuit of sub-goals (Williamson, 1989). *Of the two contrasting organizational objectives; scale-efficiency and flexibility the M-form of Svenska Handelsbanken is the manifestation of the latter*. As noted by Yilidrim (2005), flexibility is an important point of reference in the evolution of organizational structures of banks in the cases that are characterized by increasing uncertainty, instability and dynamism. Flexibility requires decentralization in decision making, operating activities, and in coordination of administrative staff and production units.

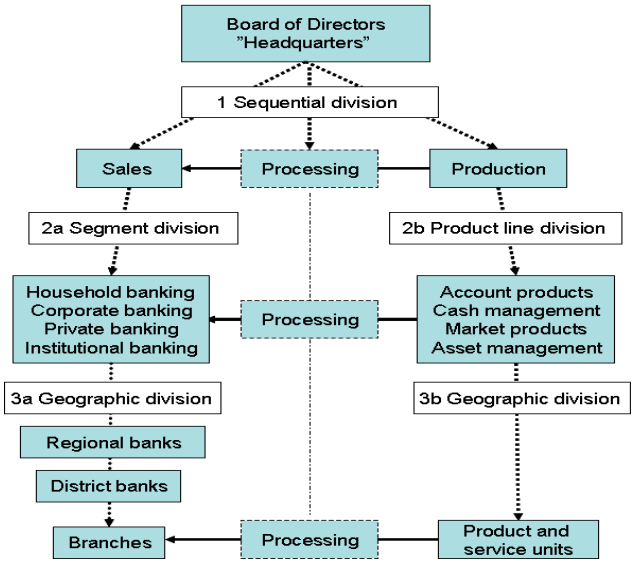

Figure 43. The hierarchy of divisionalization in Nordea Group.

In Nordea the model of divisionalization is consistent with its operating model, the pursued specialization of resources and the scale-efficiency in the production and distribution of the banking services and products. The hierarchy of divisionalization, depicted in Figure 43, is based on the company interviews and the data of the annual reports. The dominant mode in Nordea is sequential

divisionalization (1), which distinguishes between the sales and the production activities. For specific products, the sales and the production are linked with the processing activities. All processing activities, which may be mobile (experts) or located in the branches, are administratively integrated in the production units. On aggregate, the sales activities in Nordic banking are segmented (2a), where the main division is made between the household and the corporate customers and the institutional customers, the latter being mainly non-profit organizations in the public sector. The segment division is followed by the geographic division (3a) into the four regional banks, which are responsible for each of the Nordic countries and markets. The production and processing are divided into the four product lines (2b): the account products, the cash management products, the capital markets products, and the asset management products including savings products such as equity funds. The product line division is followed by the geographic division (3b), where the location of the production and the logistics is guided by the identified economies of scale and scope in the four product lines. To conclude, *the prominence of the sequential division in Nordea's hierarchy of divisionalization implies that the banking technology is seen more in terms of long-linked technology rather than intensive technology.*

In Nordea's model, the regional banks and the district banks hold no strategic autonomy. Their decisions are bound by the corporate strategy and the associated targets in the financial and other key performance indicators (KPI) set by the executive team. The regional banks can however, 'within some limits' decide how to implement the (growth) strategy in the regions and in the districts to achieve the corporate goals[116]. A central strategic device allowed for the regional banks is resource allocation, including investments in physical, human as well as financial capital across the heterogeneous district banks. This is associated with the option to apply *adjusted* objectives for different districts and product lines. Equivalent managerial coordination is employed by the district bank with respect to the branches, which they are responsible for. While most of the branches are profit centres in accounting terms, their autonomy is in practice highly limited as well. The independence is further constrained by the Future Branch project, which fosters specialization of the branches in sales and customer relationship management (CRM). As with the operative targets and the customer service concepts, which are given from above, the operative costs of the branches are to a high extent determined at the corporate level. The corporate procurement unit, which purchases the office facilities and other non-financial inputs for the branches *centrally*, negotiates the contracts with the external suppliers. As a result, the cost-income

[116] These 'adjusted regional strategies' are aligned with the organic growth strategy at the corporate level.

ratio is not a valid measure of productivity for an individual branch, and the productivity comparisons across branches are thus limited[117].

As an archetype of the functional form, or the *U-form* (Chandler, 1990; Williamson, 1985), the organizational design of Nordea rests on the rationales raised in transaction cost economics and the organization theory. Yildirim (2005) notes for instance, that the U-form organizations, commonly known as functional organizations, are organized around business functions such as finance, marketing and manufacturing. The decision-making authority is concerned with both the development of strategy and operating activities. The general manager, who has the access to information from all the functions and has the company-wide point of view, provides coordination among the units. The guiding principle of the functional form is centrally coordinated specialization, which utilizes the economies of scale and scope in the corporate activities. The core functions related to manufacturing, sales and distribution are hierarchically organized line departments, whereas supporting (staff) functions are usually laterally interdependent (Scott and Davis, 2003). Hence, *of the two contrasting organizational objective; scale-efficiency and flexibility the centralized U-form of Nordea is the manifestation of the former*. Yilidrim (2005) notes that due to the increase in competition and maturity of the banking industry, efficiency necessitates technological investments and organizational changes that will reduce operating costs, enhance productivity and realize potential synergies in production, sales and distribution functions. Efficiency necessitates avoiding duplications and asks for centralization of activities and common functions to gain economies of scale.

5.4.6 Corporate merchant banking

The company interviews indicate that *corporate merchant banking* (CMB) is a central business line within the universal banking industry. As a valuable asset in reputation, innovation and profitability, CMB customers require highly customized attendance independent of the bank's corporate strategy. The examination of the organization of corporate merchant banking (CMB) is thus instructive for the outline of the productive regime in the case banks. In the light of the systemic paradigms on effective organizations discussed in Section 4.3.1, the following analysis also highlights the differences between

[117] As a partial imitation of Svenska Handelsbanken's business model the *Future Branch* involves the concept of street branch with a team of 10-15 sales officers. Based on the internal benchmarks by Nordea, branches with such a scale and specialization by customer segment generate the highest productivity with respect to value added per employee.

the *natural-open* approach in the case of Svenska Handelsbanken and the *rational-open approach* in the case of Nordea.

In Svenska Handelsbanken all customers, including the biggest corporations, are attended indiscriminately within the common organizational setting. As a rule of thumb, the customership of each corporate client is 'owned' exclusively by the branch whose business *territory* the headquarters of the client is located in. Consequently, the service concepts in the case the biggest customers may be differentiated across the branches and determined ultimately by the responsible account managers, most often by the branch manager. Based on Svenska Handelsbanken's generic service model, the account managers collect information on customer's needs, which are then adapted to the customized offerings made of standard and non-standard products and services. As the economic importance of the client and the scope and complexity of the financial needs, increases with the company size specific corporate-wide *routines* in managing CMB customerships have evolved, accordingly. In general, it is in the interest of the account manager to work as an intermediary link between the corporate customer and the product owners, which may be located at various levels of the organizational matrix.

An organizational response to the contingencies of corporate merchant banking (CMB) is an informal and customer-specific network, 'a team' which is coordinated by the account manager, and in the case of the most important customers, the branch manager. To quote an interviewed business manager "the account manager has the overall responsibility for the coordination. And to see that it [the customer relationship] is managed, that all the customer needs are met, there exists a counterpart [a product owner] at the product units". Besides the inter-organizational collaboration between the account manager and the product owners, there exists a close collaboration among the product owners as well. This is a prerequisite for meeting the customers' needs effectively and fostering sales in the future. The service teams are temporary organizational arrangements, however, and their size varies by the number of the experts needed. They are rather virtual organizations, built up *ad hoc* to take care of the customer's specifications and requirements. As there is no explicit market segmentation based on scale-efficient use of product packages or the size of the customer, the coherence of service teams varies. To quote an interviewed business manager "…our approach differs from the approach of a product organization [i.e. product-oriented competitors]. We regard ourselves more like a service company rather than a product company, or a seller of products". An interviewed branch manager notes further

that "…from the perspective of the team, the customer is the common denominator…but banks have different approaches. [In contrast to our competitors] we have no pre-designed solutions or products to offer…we first listen to the customer…then we take our products and combine them and make a proposal, and readjust them if necessary".

In deviation to Svenska Handelsbanken, the corporate merchant banking (CMB) in Nordea is a semi-autonomous, specialized business unit under the sales division Nordic banking, which operates in each of the Nordic countries. The Finnish CMB unit employs some 15 account managers and 85 supporting service specialists. The attendance of around 250 biggest listed corporations in Finland is based on a well-established partnership. The present operational model of the CMB unit was created in response to the need to improve the cost- and scale-efficiency of the CMB activities at the beginning of the 2000s. Accordingly, the unit is promoted by the slogan "CMB Finland - striving for efficiency". Antecedent to the *Future Branch* project, the CMB was restructured to focus on its core activities: sales and relationship banking. In that restructuring, initiated in Finland, all unrelated processes and activities were transferred to Nordea's specialized production and service units. The new organization has improved cost- and scale-efficiency as well as the transparency in costs. The conduct of Nordea's CMB is based on a standardized relationship management process (RMP) shown in Figure 44.

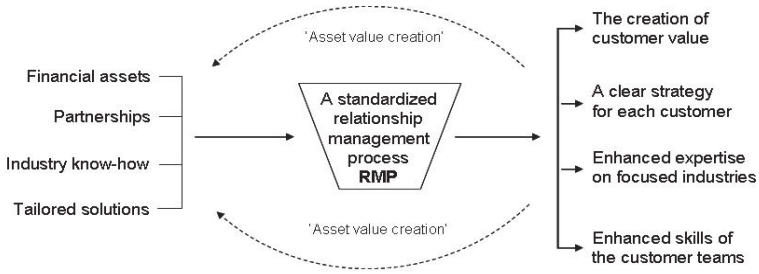

Figure 44. Nordea's relationship management process (RMP)[118].

On the input side Nordea's RMP is facilitated by the assets and resources. While the financing of the customers' investments relies predominantly on the capital markets, a strong position in the financial

[118] The figure is constructed from the data of the company interviews.

assets is needed for 'the bridging' i.e. short-term loan funding by the bank. The established partnerships, the accumulated industry know-how, as well as product development are the key drivers of the competitive edge of Nordea's CMB. While strategic partnership requires tailored, individual solutions, tailoring is based on efficiencies enabled by modularization. On the output side of RMP, the creation of customer-value assumes the highest priority. Contributing to the reduction of customer's costs and risks and the increase in income the head of the Finnish CMB sees that "the customer value is created if we can help the customer in the implementation of its own strategy". Given the characteristics of the partnership[119] and customer's strategy, the customership is managed through a strategic *plan* based on the service concepts provided by the segment group. Competitiveness requires that industry- and product-specific skills of the service teams are enhanced by continuous training.

The customer relationship management (CRM) and corporate sales is based on a permanent organizational arrangement called *customer teams*. According to the head of the Finnish CMB unit "such customer teams are the cornerstone of our activity. There exists a dedicated customer team having experts in the different service and product areas. They know the customer firm and its specifications. The [global[120]] relationship manager coordinates this organization or the network. In fact, this is a kind of virtual organization…the task of the relationship manager is to generate business. They visit the customer and find the deals…they are sniffing new business opportunities". The personal skills and talent of the relationship managers are crucial for successful performance. The head of CMB stresses that "everything is based on knowledge, you have to understand how big companies operate, how they make decisions, what are relevant issues etc…big companies use banks in a totally different ways than smaller companies". Competitiveness lays in the customer-specific information, and in understanding the customer's field of business. The head of CMB continues "we have to understand the industry drivers, and in the case of the forest industry for instance, we have to understand the determinants of profitability and industry evolution…as customers notice that we have the knowledge and expertise on the on the customer's business, we are a better party to negotiate with, and this gives us more business…the knowledge will accumulate as you meet people in the professional circles".

[119] This involves the share of customer's wallet and Nordea's position as customer's 'house bank'.
[120] As in Svenska Handelsbanken, the CMB clients are served globally by a dedicated relationship manager.

A customer team highlighted in Figure 45 involves supporting service staff which processes and transmits the customer's order to the production and service units. The supporting services included in the CMB unit provide an 'advisory interface' between the production and the sales. The production and service experts gain customer-specific information through their participation in several customer teams. Customer-specificity is enhanced by the direct contacts between the financial managers of the customer and the experts of the product and service units of the bank. To foster specialization, information externalities and effective risk management the customer teams are grouped along ten industry sectors including e.g. pulp and paper, telecom, energy. The productive performance of the teams and the relationship manager is assessed by the same criteria as the account managers in the other corporate segments.

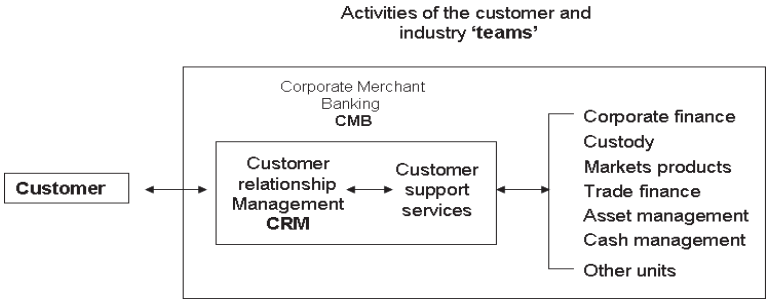

Figure 45. The team-based customer relationship management in Nordea[121].

The head of CMB notes that "our main function is to use the product and service experts as efficiently as possible to generate more income from the customer[122]…we are being evaluated by the sales of Nordea's products and services to our customers". In comparison to retail banking, the assessment of the performance of each customership and relationship manager in CMB is based on better information on costs, however. This owes to the fact that the effective time allocated by the relationship manager and the product and service professional to a customer can be calculated more accurately, not based on the 'estimated averages' which is the case in retail banking and the segments of smaller companies. Moreover, the operating expenses of the customership are generally high, which results from the extensive tailoring of the products and services, and the high fixed costs of the team. This holds also for

[121] The figure is constructed from the data of the company interviews.
[122] The main objective is not to gain new customers, but to have a larger share of the present customers' wallet.

the revenues, of which a high proportion consists of various fees from highly tailored solutions in capital markets and cash management product lines. On balance, the average cost-income ratio around 30 % suggests much higher productivity compared to the other corporate segments and retail banking.

The implementation of high-price/high-cost -strategy (differentiation) for the CMB enterprises and low- price/low-cost -strategy (cost-leadership) for the smaller enterprises corresponds to the focused strategy within the Porterian framework (Porter, 1985). Moreover, corporate segmentation and the associated service concepts suggest the trade-off between scale-efficiency and effectiveness in the search for the 'optimum' productivity for each corporate segment. For the most demanding CMB customers, the team-based service concept is organizationally the most efficient arrangement, given the needs of high customization and effectiveness. As the company size decreases, the scale-efficiency becomes increasingly important to attain the predetermined level of effectiveness of the 'representative' (average) corporate customer. Such diversity is a major source of competitiveness in Nordea, particularly as the innovations made with the CMB customers tend to 'flow down' to the segments of smaller companies. The main lesson, which CMB provides with Nordea's retail banking, is the promotion of specialization. The head of CMB concludes that "…if different kinds of customers are served with the common [unspecialized] resource base [as is the case with retail banking], the productivity and profitability will vanish in the pulp…specialization enables an improved monitor of the productivity of a branch…firms can be served more efficiently with lower costs".

5.4.7 The key aspects of corporate governance

The established conventions in the corporate governance put the company's organization in action. In particular, they highlight the consistency between the corporate strategy and the activities performed by individual employees and the teams of employees. Hence, assuming that consistency holds, the characteristics of corporate governance provide supplementary information on the productive regimes of universal banking as well. The specific areas of the banks' corporate governance examined here are the 1) business planning (corporate budgeting), 2) the pecuniary incentive schemes in the motivation of employees, 3) the internal competition between the business units, and 4) the coordination between the production and the sales. The company interviews indicated that these specific areas are central in the conduct of the productive regimes and they show differentiated, bank-specific patterns. *In Svenska*

Handelsbanken the decentralized organization with the pursued flexibility of resources and organizational capabilities is compatible with the market-driven and entrepreneurial approach to corporate governance. This contrasts with *Nordea where the centralized organization and the pursued specialization of resources and organizational capabilities are compatible with the hierarchical and intervening approach to corporate governance.*

The former CEO and the originator of Svenska Handelsbanken's present business model Jan Wallander considered *corporate budgeting* as an unnecessary evil and in most cases outright dangerous for any business planning. According to Wallander (2002) budget is a sophisticated estimate on the revenues and costs for the next (fiscal) year, two years or several years ahead. It is a goal that should be attainable with a reasonable exertion. The problem is, however, that any estimate is always continent on simplistic assumptions on the rules of how to predict the future. This means that estimation is nothing but projection of our historical experiences into the future. If the future is influenced by something we have no experience at all any estimate will be wrong. We know nothing about the future.

The predominance of Wallander's thinking in the bank's present policy is confirmed through the company interviews as well. Though still in suspect by the main competitors, Svenska Handelsbanken makes no conventional budget. For the rationales, an interviewed business manager notes that "for instance, the budgets [made by other banks] in the fall 2006 for the year 2007 lost their basis through the evolving financial crisis. As there exist so many things, which we cannot control it makes no sense to use much effort to guess, what is happening somewhere, and then to conduct the activity according to the stated objectives…budgeting leads usually to a situation, where the objectives on the volumes [quantities] become prioritized and then they need to be sold to the customer. In that case customer's approach is surpassed by the product approach…we are lacking a medium-term planning or an annual budgeting. We stress the importance of the present, this moment…that we work sensibly just now…because with a high probability it generates a good outcome. And then we have the long term policies and Wallander's theses". In effect, the business planning in Svenska Handelsbanken focuses on the monitor of the actual profitability (ROE) and productivity (C/I), in online and monthly basis. This implies a continuous adaptation by the bank to match the current costs with the current inflow of revenues given the best available data on the corresponding industry averages. Action plans made by the branches are used as rough estimates of the future sales and costs, but they are subordinate to the

'overriding objective' that Svenska Handelsbanken should constantly exhibit the same or a higher level of profitability (ROE) and productivity (C/I) than the average of the bank's group of reference[123].

The pecuniary incentive scheme in Svenska Handelsbanken's is the staff pension foundation *Oktogonen*, which aims to enhance the commitment of the employees to the bank and the 'overriding objective'. Oktogonen receives some third of the annual after tax profits in excess of meeting the minimum of the 'overriding objective' in profitability (ROE). Serving as a substantial capital reserve for the bank's external lending as well, Oktogonen provides and extra pension for all current and former staff members, as they retire (Wallander, 2002). In the spirit of decentralization, community and encouragement of the employees, all employed staff members – as the owners of the fund – receive an equal bonus independent of his or her salary or position in the bank, if the minimum criterion for bank's profitability is exceeded. Except for the years of the deepest recession at the beginning of the 1990s the 'overriding objective' of the bank has been achieved. The value and the capital stock of the foundation have been boosted by the profitable reinvestment of the accumulated profits of the bank.

Another mechanism conducive to the 'overriding objective' in Svenska Handelsbanken is the *internal competition* among the business units. At the intermediate level, the relatively independent regional banks in each of the Nordic countries compete against one another in the generation of ROE, or more precisely, the return on the financial capital allocated to the regional banks. The ranking of the regional banks in profitability is observable on-line by the executives of these regional banks, which try to improve their relative positions. Reflecting the governance of the M-form organizations (Williamson, 1985): the higher is the performance and the ranking of the regional bank, the more they are 'awarded' with additional capital which is allocated to their business operations (Wallander, 2002). As the marginal productivity of the additional capital tends to decrease due the intra-firm competition, the idea is that the average profitability of the regional banks gravitates upwards and the differences in profitability over the regions diminish gradually. A similar dynamics is characteristic of the rivalry among the branches of a region, which compete in the cost-income ratio. The appropriateness of the cost-income ratio for the benchmark is based on the fact that the branches are highly differentiated in

[123] This implies that the longitudinal comparison of company performance is useless *per se* and highly contingent on the economic environment in the past.

their customer base as well as in the financial offerings, which are not directly comparable. As an independent profit centre a branch can influence both components of the ratio.

The market-mediated *coordination of the sales and the production* in Svenska Handelsbanken involves three levels of hierarchy: the branches, the regional banks and the 'bank'. The coordination between the branches and the regional bank is conducted through a decision making body called the *planning committee*, the members of which are the branch managers of 'the representative' branches of the region (country). Each of the local product owners and representatives of the staff departments of the regional bank are invited to meet the planning committee usually once a year to present a proposal (action plan) on the provision of the products and services for the following fiscal year. As all expenses of the services and products are born by the branches through the internal transfer pricing, the most important issues in the proposal concern the planned investments, the improvements in the products and services, and hence the internal transfer price itself. Contingent on the market outlook, the price information on the competing banks and the cost-income objectives set by the branch managers, the planning committee either accepts or rejects the proposals. In the latter case the plan will be revised till it is acceptable to the committee. With the cost control exerted on the product owners, the coordination guarantees that the internal markets for the products and services are competitive guided by the external market supply and demand. Based on the same logic there exists a 'big' planning committee, which represents the interests of the regional banks with respect to the 'bank'. It monitors the activities of the product owners and staff departments at the headquarters[124].

The market-driven, adaptive governance in Svenska Handelsbanken deviates essentially from the hierarchical and intervening governance in Nordea. The well-established *budgeting procedure* in Nordea is based on the financial key performance indicators (KPIs), the targets of which are set at the highest level of authority, by the executive team, for the following fiscal year. As noted by the interviewed region manager "this is quite a top-down goal setting, the starting point is what is expected from us, and they [the highest executives] see from above how this could be achieved…there are mutual discussions but ultimately the corporate goals flow all the way down". In practise the corporate objectives, focused largely on the growth of the 'gap' – the difference between the revenues and cost –

[124] The big planning committee decides *inter alia* how the profits of the sales through the branch network are divided between the centralized product owners and the decentralized branches having the customer responsibility.

are translated into more detailed plans on the products, prices and costs at the lower levels of managerial hierarchy. A central body in Nordic banking is the *market meeting,* which specifies the objectives for each region, i.e. country. The market meeting is attended usually by the corporate executive, the regional executives and the segment managers of the segment group. According to the interviewed district manager, "the region manager and the district manager agree on the objectives of the district bank…[and finally] the branch managers and the account manager agrees on the personal objectives for the account manager". At the most disaggregated level, the account manager makes a specific sales budget*,* which is a detailed estimate on the profits generated from his or her clientele. The quantitative objectives are brought in to the accounting template and the budget is monitored through a rolling financial forecast (RFF) made quarterly for the next four quartiles. To the extent the actual sales and costs deviate from the forecast, the action plans are revised to reach the path conducive to the corporate goals. Accordingly, whereas the goal-setting in the corporate budgeting is a *top-down* process, the control and monitor of the business processes, facilitated by the managerial hierarchy, is a *bottom-up* process.

In Nordea, the *pecuniary incentive scheme* as well as the evaluation of the productivity of the individual employees, is based on the key performance indicators and their quantitative targets. The interviewed region manager notes that "we [the bank] monitor the work of the account managers with respect to the customer….we try to improve the productivity, i.e. that how much we get revenues per account manager…in a way it is an improvement of the productivity of the sales activity". In deviation to the incentive scheme in Svenska Handelsbanken, which involves all the company employees on equal basis, the incentive scheme of Nordea is applied selectively to the key officers with a personal profit responsibility. In Nordic banking for example, every account manager and higher officers have an incentive scheme tailored and designed with their direct superior. Based on a specific scoring system and weights given to the sales KPIs, the managers receive an annual bonus, if they have exceeded the predetermined quantitative targets. According to the interviewed district manager, the bonus varies usually between half a month's salary and three months' salary. The individual bonuses are also bound to the overall performance of the corporation, which is evaluated by equivalent but more generic KPIs. As with the divisional and individual KPIs these indicators are adjusted each year to reflect the short term strategic focus. In 2008 for instance, income growth and customer satisfaction were selected as common group KPIs (Annual Review, 2009). The productivity of an account manager is evaluated e.g.

by the customer satisfaction index in his or her clientele, by the profitability of the customerships (including the approximated time to customer), and by the sales of the prioritized products. Correspondingly, the evaluation of the managers of the branches, the districts and the regions is based on the employee satisfaction at the respective levels[125].

As with Svenska Handelsbanken, the central element in Nordea's governance is the promotion of *intra-firm competition* among the main business units. In Nordea, however, the performance benchmark is more systematic and developed in support of the corporate strategy. As some 95 % of the corporate activities are comparable internally, the benchmark data on the KPIs is central in the development of the business activities. As the regions as well as districts in Nordic banking are subject to a continuous corporate-wide ranking, the conduct of focused analyses of branches provides detailed information on the actual sales performance. In the Finnish regional bank for instance, the monitor of branches generate a lot of follow-up information of their relative performance, which the branch managers see on-line. To quote an interviewed region executive, "we have constructed internal reference groups, that is, all branches are divided into several key groups [clusters] in the Nordic countries based on the characteristics of their business environment". Such characteristics are e.g. the growth of the local markets and the demography, which are then compared to the market position of the branch and the concentration of customers' purchases to the branch. The interviewed region executive summarizes,"…internal comparisons of the branches play a prominent role for us…We pick up the comparable branches and they are subjected to a detailed comparisons…This is a corporate-wide convention in the enhancement of branch productivity. As the manager and all the people in the branch see on-line that our branch ranks on the bottom with respect to the reference group, something has been made wrong. Then this will be improved…but we also try to transfer the best practises [knowledge and skills] from the best performing branches down to the low scoring branches and in this way develop all branches".

In comparison to Svenska Handelsbanken, *the coordination of the sales and the production* in Nordea is more balanced and based on hierarchical control. In the technical matters of the business operations, the two-way communication is facilitated by the processing specialists positioned between the sales units and the production units. At the higher strategic level, the coordination is facilitated by the

[125] Among the main KPIs of the product owners is the unit cost of the service and the product.

segment groups, which are responsible for the design of the service concepts in each customer segment. As a coordination instrument the service concepts combine the information of the production possibilities and the market needs that is utilized in the budget planning and monitoring as well. The segment groups contribute also to the work of the *product coordination forum*: a high level decision-making body attended by the top executives in Nordic banking and the product divisions. According to the interviewed region executive, "a dialogue [in this context] is the right word. It means that ultimately the highest executives decide which products are developed and which products are prioritized…inputs to the decisions are collected from the customer side and the production side to the construct of an annual product plan that is monitored and revised quarterly". While the pricing and the costs of the products and services follows principally from the budgeting procedure, the actual coordination is manifested in the internal transfer pricing which is based on the *cost-pricing principle*. In the internal accounting, profitability and other performance indicators are calculated and monitored in each product and service category, and at each hierarchical level of the customer management. The convention is simple and avoids the potential transaction costs of haggling and profit-sharing (cf. Williamson, 1985).

5.4.8 The propositions on the two productive regimes

The comparative outline of the corporate strategy and the organization of the case banks highlight the main attributes and differences in their productive regimes. The purpose here is to synthesize the main characteristics of the two productive regimes and the underlying measurement of productive performance. This is based on the propositions, which draw on the theoretical arguments of organizational design (see Section 4.3). In the light of the contingency theory (Scott and Davis, 2003; Thompson, 1967), the *M-form of Svenska Handelsbanken represents an organizational response and adaptation to a heterogeneous and dynamic environment*. It aims to manage reciprocal interdependence between the technical core and the boundary-spanning activities of delivery and procurement. For the analytical purpose here the condition of the dynamic environment can be replaced by the condition of subjective dynamics and uncertainty. This implies that the environment is perceived dynamic and uncertain by the corporate management.

As the division of the technical core and the boundary-spanning activities into several clusters of profit centres is an effective means to manage uncertainty and bounded rationality, the *overall rationality* of the M-form in comparison to the U-form becomes inevitably more constrained. This follows from the

stylized fact that the technical core, which represents the rational system itself, cannot be separated from the boundary-spanning activities in the M-form. As the boundary-spanning activities follow the open system logic (Thompson, 1967; Scott and Davis, 2003), the technical core of the organization – in each of the decentralized value chains - is more exposed to the dynamics and the uncertainty of the local environments. Hence, given the axiomatic view that the management cannot control the external uncertainty completely, and the high priority given to the effective adaptation, the following proposition by Thompson (1967) characterizes the organizational model of Svenska Handelsbanken: *under conditions of complexity [heterogeneity and perceived dynamics], when the major components of an organization are reciprocally interdependent, these components will be segmented and arranged in self-sufficient clusters, each cluster having its own domain*. Given the inherent trade-off between organizational flexibility and efficiency (Yilidrim, 2005), *it can be concluded that the productive regime of Svenska Handelsbanken is less responsive to the efficiencies arising from the economies of scale or functional specialization, and more responsive to effectiveness in meeting the differentiated needs of individual customers and the differentiated demands in the geographically separated markets. This is associated with entrepreneurial cost control in the locally decentralized business units.*

In reference to the systemic paradigms discussed in Section 4.3.1, *the analysis of Svenska Handelsbanken demonstrates that the decentralized and adaptive strategy is fostered by the managerial view on organizations as open and natural systems.* Openness follows the entrepreneurial orientation that activities of the organization (branch), tightly or loosely connected, must be continuously motivated, produced and reproduced, if the organization (branch) is to persist. In particular, organizations (branches and the region bank) are based on interdependencies - of varying degree - between their constituent parts. Individuals and subgroups form and leave coalitions (e.g. service teams), which makes coordination complex and the determination of the boundaries of the organization arbitrary, and most often a secondary issue (Scott and Davis, 2003). The systemic logic implemented by Svenska Handelsbanken is inherently natural as the degree of goal-specificity and the formalization of the bank's organization are distinctively low. The strong affiliation by the former CEO Jan Wallander to the ideas of the human relations school is instructive. The underlying argument raised by the human relations school is that given the logic of the natural systems, which characterize all productive organizations there exists a positive correlation between worker satisfaction and labour productivity. High productivity of motivated workers in turn enhances the overall labour productivity

of teams and larger working units (branches). The domains, where employee satisfaction can be enhanced, include supervisory practises and leadership style, job enlargement and rotation as well as worker participation in the decision making (Scott and Davis, 2003). These issues assume high priority in the operational principles in Svenska Handelsbanken.

The organization theory further suggests that the criteria in assessing bank's performance and the question of the fitness of the bank for the future action (Thompson, 1967) are derivable from the characteristics of the M-form. Namely, the open-natural systems logic followed by Svenska Handelsbanken implicitly assumes that the managerial understanding of the cause-effect relations in banking performance is highly incomplete, and therefore the standards of desirability of the organization are ambiguous (Thompson, 1967). The ambiguity results from the recognition that ultimately the intrinsic objectives of the various stakeholders (management, owners, employees, society etc.) are numerous and partly in conflict. As the performance of any complex organization such as banks, can be evaluated only in satisficing terms, the evidence on Svenska Handelsbanken supports the proposition that *under norms of rationality, organizations (branches, banks) facing dynamic task environment seek to score favourably in relation to comparable organizations (branches, banks)* (Thompson, 1967). The 'overriding objective' of the bank and the supportive arguments raised in the company interviews reflect Thompson's (1967) notion that in a dynamic task environment there is considerable uncertainty about what the organization may be called upon to achieve in the future, and improvement on absolute criteria may be of little consequence. Lacking absolute criteria of fitness, and being unable to assume that improvement over its past capability is a reflection of its future, *the complex organization then turns to social references to demonstrate that it is doing well or better than others in its league*.

In the light of the contingency argument (Scott and Davis, 2003; Thompson, 1967), *the U-form in Nordea can be seen as an organizational response and adaptation to a heterogeneous and stable task environment.* According to Thompson (1967), when the task environment is heterogeneous - a reasonably realistic assumption for all international, multi-product corporations - and stable, organizational efficiency assumes that there are several functional divisions (specialized in production, distribution, procurement etc), which are capable of coping with the diversity of the environmental constraints. For the analytical purpose here the stability condition can be replaced by the subjective

stability condition. That is, the environment is perceived stable and predictable enough by the management, which justifies the implementation of systematic preplanning and budgeting practises. Accordingly, the adaptation of the functional divisions to the uncertainty is based on standardized responses and rules[126], which enable the utilization of economies of scale and scope as well. Given the heterogeneity and (subjective) stability conditions the following proposition of Thompson (1967) characterizes the organizational model of Nordea: *when the technical-core and the boundary-spanning activities can be isolated from one another except for scheduling, organization under norms of rationality will be centralized with an overarching layer composed of functional divisions*. Given the inherent trade-off between organizational flexibility and efficiency (cf. Yilidrim, 2005), *it can be concluded that the productive regime of Nordea is less responsive to effectiveness, i.e. meeting the differentiated needs of individual customers, and the differentiated demand of the geographic markets, or the efficiencies arising from the entrepreneurial cost control, but more responsive to the efficiencies arising from the economies of scale enabled by the specialization and the centralization of the core and the supporting activities.* In Nordea's regime effectiveness of the banking services results from - and is constrained by - a systematic preplanning and the deliberate effort to control uncertainty.

The centralised and efficiency-driven productive regime of Nordea is associated with the managerial view on organizations as *open* and *rational systems*. As noted by Scott and Davis (2003) rational system paradigm views organizations as collectivities oriented to the pursuit of relatively specific goals and exhibiting relatively high formalized social structures. Accordingly, the distinctive features of a rational organization are high specificity of goals and formalized structure, which both are regarded conducive to, and prerequisites of the productivity of organized action. In practise, however, rationality is a matter of degree determined by the extent to which organized actions lead to predetermined goals with maximum efficiency (Scott and Davis, 2003)[127]. Accordingly, rational systems paradigm also accepts the assumption of bounded rationality and the satisficing behaviour of the human economic agents. This leads to a distinction between organizational (imperfect) rationality and technical (perfect) rationality. In this setting, the U-form of Nordea and the established conventions in corporate governance can be seen as efforts to economize on the imperfect rationality and to attain the maximum

[126] Standardized rules are characteristic of internal coordination of pooled interdependence as well.
[127] In reality, perfect or technical rationality is a hypothetical optimum, which cannot be reached by any individual or organization.

bounded rationality in the pursuit of the closed system strategy[128]. The embedded rationality of Nordea's regime is associated with openness, which is reflected e.g. by the team-based customer management in corporate merchant banking (CMB). The service teams are open systems based on interdependencies between their constituent parts. While individuals and subgroups form and leave coalitions, which makes coordination complex, and the determination of the boundaries of the organization arbitrary Nordea's service teams show higher closeness and rationality compared to Svenska Handelsbanken.

The organization theory suggests that the criteria in assessing Nordea's performance and the question on the fitness of the bank for the future action (Thompson, 1967) are derivable from the characteristics of the U-form. From the rational-open systems logic follows that the understanding of the relations between causes and effects is imperfect. The standards of desirability set for the organization are thus regarded ambiguous (Thompson, 1967). The systemic rationality and the empirical evidence on the corporate governance suggest, however, that in comparison to Svenska Handelsbanken, the productive regime of Nordea assumes a higher subjective rationality (lower imperfection) and better understanding (control) of the cause-effect relations. Hence, given the above notion on the subjective stability, the deliberate strive for the reduction of uncertainty, and the stylized fact that the performance of any complex organization such as banks can be assessed only in satisficing terms, the evidence on Nordea supports the proposition that *under norms of rationality, organizations facing a relatively* (subjectively) *stable task environment seek to demonstrate fitness for future action by demonstrating historical improvement* (Thompson, 1967). As the subjective stability can be expected to correlate positively with the subjective understanding (control) of the cause-effect relations, the main reference group in this case is the organization itself. While Nordea benchmarks itself to a specific reference group of competing banks as well, the performance in cross-sectional comparisons is regarded predominantly as the outcome of the deliberate actions in improving the absolute performance longitudinally. This is manifested e.g. by the number of financial targets such as the annual organic growth rate of 10 %. In this setting, an acceptable performance in the past can be taken as evidence of preparedness for the future. Demonstrable improvement over the past lays the basis for the claim of even more satisfactory future performance and hence indicates response to the norm of rationality (Thompson, 1967).

[128] The ingredients of the organization are deliberately chosen for their necessary contribution to a goal, and the structures established are those deliberately intended to attain highest efficiency (Thompson, 1967).

5.4.9 Summary

The outline of the organizational models and the productive regimes of the two case banks in this section complement the empirical observations of the technological characteristics of banking productivity and its measurement in Section 5.3. The examination of strategic and organizational perspectives to service productivity within the universal banking industry as well as the managerial views of service productivity in Appendix 3, illustrate the synthetized (explanatory) value creation approach (VCA) developed in Section 4. It is shown that competing firms within the universal banking industry may adopt different productive regimes, which can be characterized by specific attributes of organizational design and corporate governance. The examination of the productive regimes of the case banks supports the conclusion that the case banks are managed with 'high bounded rationality', i.e. *there exists a high consistency between the company's organization, strategy and the utilization of ICT*. The organizational model reflects the strategic objectives - and the competitive advantage - of a firm with respect to the scale-efficiency and effectiveness of the service offering. In a similar vein, the productive strategy and the organizational design highlight the technological premises and routines, which define the 'recipe' (production function) of the service production and delivery (cf. Nelson and Winter, 1982).

The identification of the productive regimes through the case study is facilitated by the preparatory analysis of banking activities and the strategic role of ICT. The model of the banking activities and their functional relations manifests the organizational technology of the universal banking industry. The sales and the production activities, which are the integral parts of the long-linked technology, are coordinated at various levels of corporate management. These layers define the 'administrative value chain'. Its productivity draws on the organizational routines, which indicates how the strategic and the operative choices are made at each level of the managerial hierarchy[129]. As with the operative value chain between the production and sales, the organization of the administrative value chain[130]

[129] In reference to Nelson and Winter (1982), organization and technology are in practice intertwined in a one functioning routine, and it is difficult to say exactly where one aspect ends and another begins. Accordingly, organizational capabilities of the administrative value chain of the firm provide a complementary asset to exploit the productivity potential of the individual skills in the sales and the production.

[130] For the administrative value chain, there exists a *trade-off between routine-based and deliberate choices* at each level of the managerial hierarchy (cf. Nelson and Winter, 1982). At the highest level of strategic management, the activities are guided mainly by deliberate choices, which show high effectiveness. At the operative levels of sales and production the activtieis are more guided by scale-efficient routines.

demonstrates bank-specific differences. Given the prominence of the organization in the service technology, the issue of the optimal boundaries of a firm is of high relevance for the universal banks. The banking corporations show a marked product and service diversification and vertical integration under a unified ownership. As the regulatory framework (safety) of the banking system tends to foster 'excessive integration' in economic sense, the enhancement of a bank's competitiveness in the face of evolving rivalry and market liberalization requires a deliberate policy in balancing between internalization and the externalization of the activities. This is manifested e.g. in the outsourcing of the treasury activities by the big corporate customers to their house banks, as well as the outsourcing of the standardized products and services as well as the supplementary activities by the universal banks to the independent suppliers.

With the intensified competition, the outsourcing of the internal service activities is boosted by the technological advances in the performing technologies and ICT therein. Pervasive in the banking processes, ICT shifts the strategic focus from the productivity of labour and human capital to the productivity of bank's ICT infrastructure in the conduct of the bank's processes. The empirical data on the two case banks indicates that the appropriation of the competitive 'leverage' of ICT requires that the ICT strategy of the bank is aligned with the overall corporate strategy. Like corporate management, ICT provides complementary services to the effective implementation of and balancing between the cost-oriented, the product-oriented and the customer-oriented strategies. In each of these strategic domains a further decomposition can be made into the effectiveness and the scale-efficiency of the key processes. Whilst customer-orientation is the proclaimed strategy in all universal banks, the case study shows that there exist bank-specific differences in its implementation. The comparison of the customer information management of the two case banks indicates that the ICT-guided strategy of Nordea builds more on the utilization of economies of scale and the reuse of knowledge. The main role of *the ICT-supported* strategy of Svenska Handelsbanken is to facilitate personalization and communication more on *ad hoc* –basis. The differences in customer information systems are compatible to the attributes of the productive regimes of the two case banks (see below).

More generally, the comparative case study of Nordea and Svenska Handelsbanken showed that there are *substantial* differences in strategic objectives, organizational design and hence competitive advantage with respect to service technology (scale-efficiency and effectiveness) in the universal

banking industry. The strategic goals and the organization of the case banks revealed differences in the principle of the divisionalization and specialization as well as in the centralization vs. decentralization of the banks' activities. Along with the specific characteristics of the corporate merchant banking (CMB), the differences are further identifiable in specific aspects of corporate governance. These aspects include a) the practices of business planning, b) the corporate incentive schemes, c) the coordination of production and distribution, and d) the intra-firm competition and benchmark. The main elements of the two productive regimes are outlined in Figure 46. The co-evolvement of the organizational design and the productive strategy is reinforced by the industry competition and learning.

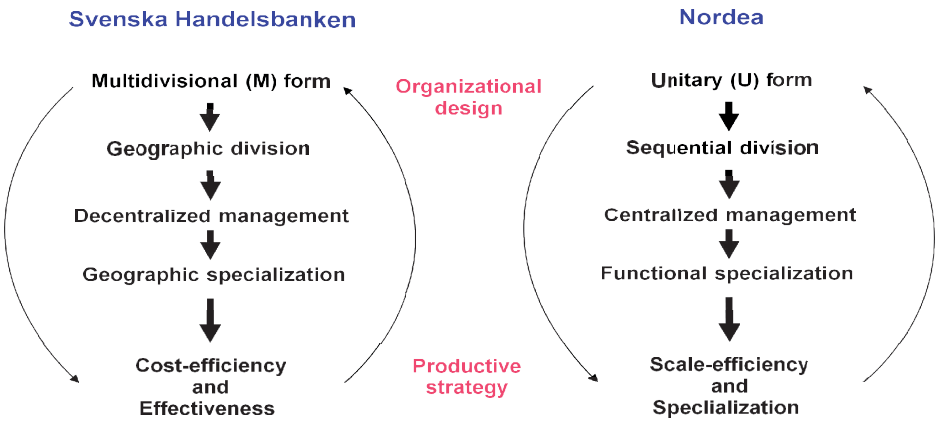

Figure 46. Productive regimes of the examined case banks.

The organizational structure of *Svenska Handelsbanken* can be characterized as multidivisional or M-form (Williamson, 1985), where the main business units have high autonomy. The principal mode of divisionalization is geographic (horizontal), implying decentralized management and business responsibilities, as well as the specialization of production and sales activities by geographic markets. The corporate governance of Svenska Handelsbanken is to a high extent guided by external factors – the competition between banks – and it shows high adaptability to changes in the market conditions. Thus, the overall performance is assessed predominantly horizontally in relation to the competitors. In the organization of Svenska Handelsbanken, the division between sales and production has not been

made explicitly. This inseparability is in line with the general conclusion that the production and delivery of the service offerings is based on *intensive technology* utilized in traditional labour-intensive services (Thompson, 1967). Such technology is more concerned with the effectiveness of the offering rather than scale-efficient processes.

There is also other evidence which indicates that in Svenska Handelsbanken the productive regime draws predominantly on the effectiveness of services. According to the interviews, the management regards high customer satisfaction, which refers to high customer's productivity, and tight cost control in branch operations as the principal sources of the bank's own productivity. High customer satisfaction is pursued via the customized quality of service offerings. An entrepreneurial business model is implemented at local branches, where the utilization of the economies of scale is limited. This kind of business model enables to some extent the adjustment of effectiveness and scale-efficiency to meet the demands of various types of customers. It also means that the utilization of the options of co-production with the customer is generally high and flexible. The high autonomy and business responsibility assigned to the branches encourages proactive collection of information on customers' context – yet, the collection and management of this information has not been organized systematically. This is reflected in *ad-hoc* customer service concepts and varying service offerings across branches and account managers.

The organizational structure of the other bank, *Nordea* can be characterized as unitary or U-form (Williamson, 1985), where the functional activities of the corporation are separated and organized hierarchically. The principal mode of divisionalization is sequential between the production and sales activities. Such a pattern is associated with centralized and hierarchical management and business responsibilities, and functional specialization in the production and distribution. The corporate governance of Nordea is to a high extent guided internally, through the corporate goals. It is less responsive to the changes in the market conditions. The overall performance is assessed horizontally in relation to competitors, but also longitudinally in relation to the bank's historical performance and the predetermined goals. The prominence of sequential division in the organizational model supports the general conclusion that the production and delivery of the banking offerings are based on *long--technology* utilized in traditional capital-intensive manufacturing (Thompson, 1967). Such a technology is more concerned with scale-efficient processes than effectiveness.

Also the interview material indicates that the productive regime of Nordea draws predominantly on the scale-efficiency of services. This owes partly to the bank's history and the evolving organizational structure. Deviating from Svenska Handelsbanken, where the static cost-efficiency implies cost-cutting at a given scale of production, the cost management in Nordea is focused more on the utilization of economies of scale in the banking processes. As the scale of operations and the centralization of the banking activities are controllable variables by the top management, there is the option for continuous improvement in cost- and scale-efficiency. The growth of sales and the margin between revenues and costs are considered to be the main performance indicators. The key drivers of productivity are centralization and the division of labour between the core and the supplementary activities. In Nordea's regime, high emphasis is put on preplanning and budgeting. Hence, customer's productivity results from the predetermined levels of effectiveness and standardization. Standardized quality of the offering is enhanced by specific customer service concepts and the service modularization which are targeted to the 'representative customer' in each of Nordea's customer segments. This implies that the utilization of the options of co-production is generally low and rigid. While the information on customers' context is collected and managed systematically, it is based on rough segmentation. This does not enable a profound analysis of customers' situations.

The strategic positioning of the two banks with respect to the hypothetical productivity surface of the Nordic banking industry is illustrated in Figure 47. Based on the implications of productive strategies discussed in section 4.2, the productivity surface here is constructed to highlight the service technology of the universal banking industry. Accordingly, the findings on the productive regimes of the case banks indicate that commercial banks are specialized in their utilization of effectiveness and scale-efficiency. In particular, the comparative case study revealed that service productivity is not explicitly on the agenda of the operative management of the case banks, but manifests itself mainly indirectly via the productive regime, which is embedded in the corporate culture and organizational capabilities of the banks. However, the R/C ratio shows high performance in both case banks.

Another interesting observation is that the two banks do not recognize the differences in the productive regimes in the same way, and their perceptions on each other do not correspond to their self-image. The interviews showed that Svenska Handelsbanken believes that it differs clearly from the main competitors; from Nordea in particular. However, a number of Nordea's managers does not consider

Svenska Handelsbanken's model to deviate much from the dominant model of the industry, which is also Nordea's model. Such an observation indicates that banks are not fully aware of the diversity of the business models and the actual competitive advantages of their rivals.

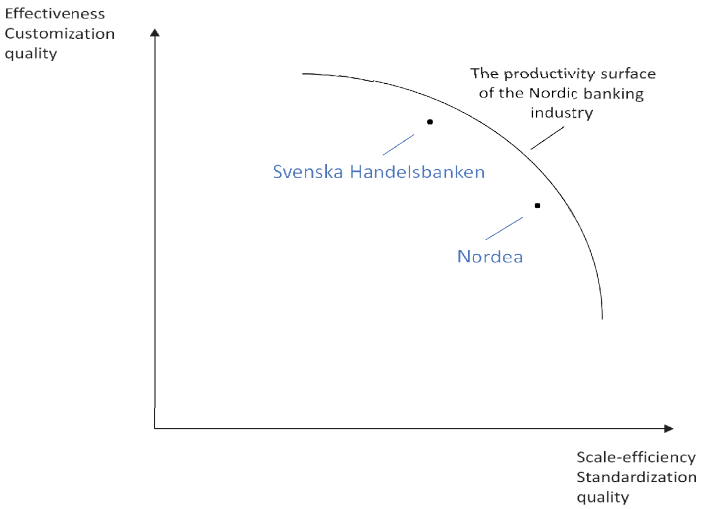

Figure 47. Strategic positioning of the case banks in the productivity framework.

In summary, the empirical results show that it is possible to organize the production and delivery of banking services in very different ways – actually in the ways which in some respects can be regarded as opposite. From the viewpoint of productivity, both of the opposite ways seem to enable success. The cases also question the simplifications regarding the favourability of the 'service-oriented model' (Svenska Handelsbanken) over the 'manufacturing-oriented model' (Nordea). Even though the former results in higher effectiveness, it is evident that not all customers prefer high customization regarding all services. More detailed analyses – both theoretical and empirical – are needed on the ways in which scale-efficiency and effectiveness (standardization and customization) should be balanced in different circumstances in banking and in other service industries.

6 Discussion and Conclusions

The focal issue in service business is how to manage the interplay between technology and organization. The interplay is evolutionary and shapes our perceptions of service characteristics and the central drivers of service innovation and productivity. Whereas technological progress fosters the growth of knowledge-intensity in the business services and the commoditization in the traditional labour-intensive services, organizational adaptation is always needed to appropriate the economic benefits of technological progress. Moreover, the (re)creation of the competitive advantage in service business requires continuous balancing between the producer's and the user's productivities. These considerations hold for all service oriented-businesses. For instance, through the promotion of higher customer loyalty and value, the manufacturing companies shift increasingly from the traditional product-based strategies to the client-oriented service strategies. At the same time, there is an opposite tendency in the knowledge-intensive services to develop standardized service concepts through service modularization and mass-tailoring. The revolving division of labour in services activities and the congruence of knowledge-based business models across industries suggest that goods and services are inter-dependent and co-evolutionary. The key attributes which characterize the differences between manufacturing and services are matters of degree.

The examination of the characteristics of service processes and productivity in this thesis is aimed to enhance the knowledge of the business logic of a service firm. The thesis points out how and why service firms pursue specific goals and modes of productivity. It is argued that service technology, competitive strategy and organizational design manifest the 'main contingencies' of the business management that frame a robust analysis of the productivity of a service firm. In regard of *conceptualization* this implies that the diversity of definitions of services as well as service productivity and its measurement results from the implicit *(ad hoc)* assumptions of the 'main contingencies' in service production and delivery. This is illustrated through the dotted arrows in Figure 48. In general, the thesis asserts that *conceptual, descriptive* and *explanatory* analysis of service productivity, depicted in Figure 48, benefit from the implementation of a *synthetized approach* as it is unconstrained by *ad hoc* assumptions of the contingencies. In this thesis conceptual analysis (A) contributes to the descriptive analysis (B), which focuses on the interplay between service technology and metrics. In particular, the thesis suggests that the explanatory analysis (C), which focuses on the competitive

strategy and organizational design, benefits from the conceptual and descriptive analysis of service productivity. On aggregate the synthetized framework of service productivity and the productivity of a service firm is 'systemic', which also reflects the abductive orientation of thesis.

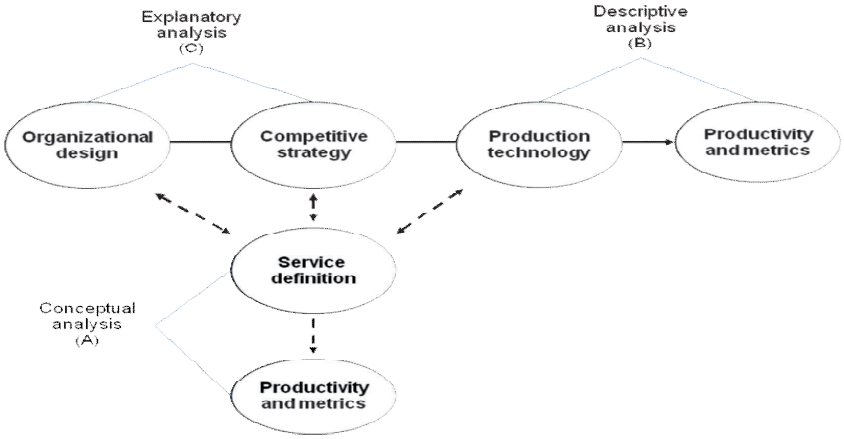

Figure 48. Linkages of conceptual, descriptive, and explanatory analysis in the thesis.

Based on the systemic framework in Figure 48, the thesis contributes to the development of a synthesized framework of service productivity and the productivity of service firm. In that framework the premises of the descriptive value creation approach (VCA) are incorporated within the explanatory approach, including firm's strategy and organizational design. This *extended* value creation approach is used for the explanatory analysis of the productivity of a service firm. In this setting, the triplets of technology, strategy and organization approximate the service technology in different levels of abstraction. Assuming that the managerial choices are *consistent enough*, the firm's strategy of productivity reflects the characteristics of service technology. In a similar vein, a consistent strategy of productivity requires further consistency with respect to the organizational characteristics and the structure of the service firm. As the principal competitive asset of a service firm is its organization, a feasible approach to address the intangible aspects of service productivity is to look into the tangible aspects of the firm's organization. The key characteristics of the value creation framework and the related findings of the thesis are summarized in the answers of the four research questions. They are presented below.

6.1 Towards the synthetized approach

The theoretical analysis in this thesis builds on the assumption 'that new insights' of service productivity can be derived from the established theories of a firm and organization. In this regard, the main contribution of the theoretical analysis in this thesis is to demonstrate how the various theories and disciplines (the theoretical constituents) can be used to derive and generalize the arguments of the value creation approach as well as to identify how the theoretical constituents are interlinked within the synthetized framework. This synthetized framework of service productivity enables 'enriched' theoretical perspectives, which entails higher credibility and generality compared to its theoretical constituents. The first part of the theoretical analysis examines the general aspects of service technology, productivity and the metrics of a firm's productive performance. **Section 3** aims to answer **the research question 1.1:** *how can the presently separate macroeconomic and socio-economic views be reconciled to build a synthesized (descriptive) approach to the analysis of the productivity of a service firm?*

In deviation e.g. to service innovation, where the convergence of the theoretical schools of demarcation and assimilation has shown a progress towards *synthesis*, the analysis of service productivity is split into the two theoretical 'schools' with differing epistemological bases. In recognizing the strengths and weaknesses of the macroeconomic and the socio-economic schools, the value creation approach (VCA) takes an 'entrepreneurial stance', to productivity. In this setting, the overriding objective of the management is to enhance the long term profitability and the value of the service firm. In competitive markets this objective is reducible to various forms in enhancing scale-efficiency and effectiveness. In general, a firm's value can be enhanced through a number of ways, including the productivity of the service process and the outcome, the scale scope of activities and the resources, as well as the prices of the outputs and inputs. VCA points out that producer's productivity, which consists of scale-efficiency, effectiveness and technical progress, is the *principal* source of the firm's value creation process. The realization of the productive outcome of the service episode is manifested in the customer's productivity, which is a specific combination of perceived customization quality and standardization quality. Ultimately, productive performance and value creation is contingent on how the firm's activities and the *resources* available to the firm are employed and how the customer is involved and used as a productive asset.

In deviation to the socio-economic paradigm, which assumes a trade-off between customer's perceived quality and procurer's efficiency, VCA maintains more objectively that the productivity of any service activity can be approximated by a concave trade-off between scale-efficiency and effectiveness at the highest possible level of productivity showing full employment of a firm's resources. In this setting, the key issue is not only the level of service quality, but also the optimal employment of a firm's resources with respect to the customers' preferences on the characteristics of service quality. Contingent on their flexibility and redeployability, a firm's resources can be used in the production of few number of customized services, or high number of standardized services. Reflecting economic scarcity, and the technological constraints and opportunities of a service firm, the productivity surface evolves through the firm's learning and experience of how to attain customer satisfaction in different customer segments. Such a trade-off, which is ignored in the established theories of service productivity, is characteristically continuous for intangible and labour-intensive services.

In VCA customer's productivity is manifested in the perceived quality of a service which is decomposed into the standardization and the customization components. These components are interlinked through a *convex* trade-off. Within the suggested productivity model customization quality is a growing and linear function of the actual effectiveness, whilst standardization quality is a growing and linear function of the actual scale-efficiency. Hence, the level of customer's productivity follows directly from the actual productivity of the producer. Reflected by the convex indifference curve, the modelling of customer's productivity provides analytically improved and more realistic description of customer's preferences compared to the traditional uni-dimensional analysis of customer perceived value in the socio-economic analysis. Hence, higher customization of a service for the client implies a lower standardization of the service, which leaves the level of the net perceived quality unchanged along the indifference curve. This follows from the underlying assumption that high customization leads to higher sacrifices as the uncertainty of the service outcome increases and higher customer participation is needed in the production of the customized service. In reality customers differ in their preferences on service quality, which implies that their indifference curves are dissimilar as well. Some customers prefer customized service whereas some customers prefer standardized version of the same service.

In the value creation approach, service quality is implicitly concerned in all managerial decisions that change productivity. Cost-inefficiency, i.e. the deviations from the first-best productivity frontier, implies a decrease in the customized quality or (and) the standardized quality. It is also shown that the unilateral efforts by the producer to enhance productivity will in most cases lead to sub-optimal productivity for the customer. Managing productivity and the pricing of the services through the producer-user interaction, is fundamentally continuous, inter-temporal optimization. With the prevailing technology and costs, scale-efficiency and effectiveness need to be optimized and balanced to attain high customer satisfaction (perceived quality and value), retention rate and hence high present value of the revenues from the firm's customerships. The flexibility of a firm's resources (most often human) and service technology, which evolve through the interaction with the customers, determines whether and how the differentiated customers can be served through the differentiation of the service offering. Customer retention and profitability indicates the value of firm is ultimately reducible to the productive value of the firm's resources. The dynamics of VCA implies that when customer loyalty (retention) increases with the customization of the service, which is a plausible assumption, then the customization may be more profitable strategy *in a long run* than standardization, even in the situation where the competitive price of the service is determined by the low cost and standardized service.

The *measurement* of service productivity should reflect the distinction between manufacturing and service, which is put forward in the socio-economic approach. Nevertheless, the method examined here is a reflection of the macroeconomic approach. Noting that quality, productivity and profitability constitute inseparable objectives in the production and the delivery of intangible, *marketable* services, it is conclude that the most viable index of service productivity is the *financial* revenue-cost ratio, R/C. Derivable from the standard accountancy of a firm, R/C shows high comparability longitudinally and cross-sectionally. In particular, R/C accounts for the technological trade-off, i.e. the possibility that carious combinations of effectiveness and scale-efficiency may yield a same level of service productivity and profitability. High effectiveness implies high unit prices and high unit costs of services, whereas high scale-efficiency implies the opposite. In conclusion, the opposing cases may generate the same level of financial productivity. As long as the actual prices paid by the customers for the services fails to measure customer's productivity adequately, which usually is the case, the revenue-cost ratio can be considered as *a valid index for the productivity of a service firm.* Further analysis calls for supplementary, non-financial indices, which better account for customer's productivity, and value.

6.2 Deepening the synthesized view

In general, the descriptive VCA and the productivity analysis define the technological opportunities and constraints of the service firm. In the explanatory analysis of the productivity of a service firm specific theories of a strategic management and organizational design are utilized. The rationales are straightforward. While strategy and organization lay at the heart of these constituent theories of a firm and the competitive advantage, they are 'implicitly' involved in productivity and the productivity growth of a firm as well. These considerations are made more explicit in development of the 'extend value creation framework'. **Section 4** aims to answer **the research question 1.2**: *how can the synthesized (descriptive) approach be supplemented with the (explanatory) approaches of strategic management and organizational design*?

6.2.1 The contributions of strategic management to VCA

The structuralist and the resource-based approaches to strategic management have substantially influenced the academic and managerial thinking on the sources of competitive advantage of a firm. Both approaches show a marked realism in the modelling of competitive behaviour of a firm. In reality firms do not strategize in a profit maximizing sense, but they pursue satisfactory levels of profits. This is enabled by a unique competitive advantage of a firm and control of competition and other determinants of the business environment. Firms dislike competition and may pursue anticompetitive tactics, as the prosperity and survival of a firm hangs ultimately on the profitability and consistency of the chosen strategy. Reflective of managerial realism, *the integrated approach implies that physical productivity may be a viable goal as long as it is more beneficial to the long-term profitability of the firm than the other available tactics*. This is also compatible with the argument of the descriptive value creation approach and the measurement of productive performance by the revenue-cost ratio.

The generic strategies of cost-leadership and differentiation within the structuralist framework of Porter (1980; 1985) are path-dependent. The present competitiveness as well as the strategic options companies hold is contingent on the managerial choices made in the past. As a refinement to Porter's original theory, the presumption of a continuous and concave trade-off between cost-leadership and (horizontal) differentiation in Porter (1998), supports methodologically the characterization of service

productivity in the descriptive value creation approach. Within the Porterian analysis, the best-practise productivity follows from the mixes of the generic strategies, which manifest the characteristics of the underlying production technology of the industry. The idea of a continuous and concave trade-off thus invalidates Porter's earlier argument that being 'stuck in the middle' between cost leadership and differentiation will be detrimental to the competitiveness of a firm. In effect, the productivity of a service firm within the structuralist framework results from the *focused* strategy, which combines the generic strategies in a specific customer segment. A further comparison shows that the trade-off between scale-efficiency and effectiveness is a more robust description of the productive strategies in a case of service firm than the trade-off between cost-leadership and differentiation in the case of manufacturing processes.

Influenced by the *service-based theory of a firm and production* by Edith Penrose (1959), the resource-based view puts forward the uniqueness of a firm's assets and capabilities as the origin of the firm's competitiveness. The resource-based view provides an objective but highly abstract explanation for the persistence of profit differentials within competitive industries. In contrast to the strategic pursuit of positioning and monopoly rents, the resource-based view presumes that market structure rather reflects economic *efficiency* fostered by entrepreneurial competition and innovation. While the structuralist approach stresses the successful employment of the *means* to attain competitive advantage (the cross-sectional perspective), the resource-based view stresses the distinctiveness of a firm's *sources* with which the advantage is created and maintained (longitudinal perspective). The debate which of the approaches is more correct is irrelevant as the uniqueness of resources and market power usually go hand in hand. Analogous to the trade-off between differentiation and cost-leadership within the Porterian productivity model, there is a trade-off between *efficiency* and *flexibility* of a firm's resources identified within the resource-based approach. In this setting, the productivity (potential) of the resources is determined by the extent to which the resources are specialized in productive activities to generate a specific number and specific kinds of services. In general, high flexibility of a firm's resources enables competitive utilization of the productive trade-off between scale-efficiency and effectiveness in the provision of services.

The thesis shows that the analytical shortcoming can be remedied by linking the implications of the activity-based view of Porter (1985) with the *dynamic capabilities* theory of a firm (Teece, 2009). This

provides *a holistic and a plausible theory of strategic management of service firm as well.* The dynamic capabilities of a firm enable competitive utilization of the services of the internal and external assets in the productive operations of a firm's activities. Assets (resources) are the productive inputs, which need to be upgraded and re-bundled to provide the required amount and quality of services to the firm's production function. The production function is reflected by the composition of a firm's activities (the value chain). In a similar vein, there is a functional relationship between the dynamic capabilities and the activities of a firm. Facilitated by the managerial skills and organizational routines, the up-grade of a firm's internal activities is needed to attain high productive performance in the provision of external services. Within the '*integrated theory of strategic management'* the Porterian *drivers* of cost-leadership (scale-efficiency) and differentiation (effectiveness) are the *domains*, where the dynamic capabilities enhance the productivity of the firm's activities. The dynamic capabilities of the highest importance are the managerial *control* of the productivity drivers and the *reconfiguration* of the value chain (Porter, 1985).

As an illustration of the explanatory VCA the thesis shows that the integrated (synthesized) approach to strategic management is a robust framework for the analysis of the productivity of the professional services. Professional services are an important point of reference as their characteristics reflect the evolutionary processes of other service industries, such as universal banking. In deviation to the 'sticky strategies' of the manufacturing firms, a competitive strategy in professional services requires responsiveness and adaptation in the face of external contingencies of the business environment. The integrated approach to strategic management 'confirms' the stylized fact that the value creation in professional services is subject to the *chicken-and-egg* dilemma. A given pool of processes and human capital of the service firm favour specific market strategies, whereas the firm's existing portfolio of clients (customer segment) and market position attract professionals with specific skills and competences. It is shown that the ramifications of the adjusted value creation model of the professional services are consistent with the characterization of service productivity in Section 3.6. Given the two key dimensions by which the professional services differ - the *focus* in the domain and the pattern of the *control* of human resources - it can be concluded that high *effectiveness* in professional services is associated with 1) low specification of the service offering *ex ante*, 2) low limitations of the scope of the service offering, 3) *decentralized capabilities* as well as 4) low routinization and technological specialization of the human resources. A high *scale-efficiency* of professional services in contrast, is

associated with 1) high specification of the service offering *ex ante*, 2) limited scope of the service offering, 3) *high centralization* of the capabilities, as well as 4) high routinization and complementarity of the human resources of a professional service firm.

6.2.2 The contributions of organizational design to VCA

The examination of the scientific premises of the organization theory suggests that organizations can offer new systematic insights to service productivity. The emergence of the systemic paradigms in the course of the 20th century highlights the *two facets* of productivity which are considered central to the performance of organizations. Whereas the rational systems school shows a distinct adherence to instrumentalism and organizational *efficiency*, the focus of the natural systems school is more directed to the internal processes and *effectiveness* (outcome) of the organizations. The open systems paradigm, which dominates the present academic thinking, takes a more balanced view. The three paradigms are complementary and guide the organized action in different domains of managerial control. The trade-off between effectiveness and scale-efficiency is addressed implicitly and it shows high relevance for the organizational design, the technological characteristics and the strategic goals of the organization.

With the propositions on the 'organizational fit', the most prominent contribution of the organization theory is the conceptual clarification between the technical productivity and organizational productivity. The organizational productivity (rationality) follows from the 'objective' contingency argument that the choice of the organizational mode should be compatible to the characteristics of technical productivity (rationality) if the objective is to attain the highest possible bounded rationality of the system. It can be concluded that organization is a *complementary resource* providing services with the technological core of the organized activity. Intuitively, the highest technical rationality and certainty is shown by the *long-linked technology*, which is characteristic of the scale-intensive manufacturing processes. The rationality of the *mediating technology*, manifested e.g. in financial intermediation, is generally lower as customers intervene in the production and the delivery. This also constrains the standardization of activities in the 'mediating' service processes. Clearly, the lowest technical rationality is associated with the *intensive technology*, which is utilized e.g. in the highly open systems of knowledge-based services. It can be further concluded that the 'fittest' mode of organization for the long-linked technology is tangible and unambiguous, whereas for the intensive technology the

'fittest' organizational mode is intangible and ambiguous. As a corollary, the relative importance of economic rationality (efficiency) to the instrumental rationality (effectiveness) is the highest for the long linked, intermediate for the mediating technology and the lowest for the intensive technology. Such a conclusion conforms to the technological trade-off suggested in the descriptive value creation approach (VCA).

The organization theory can be regarded as a generalized theory of strategic management. This becomes apparent when 'the firm' is seen as a 'complex organization' having the capability of making deliberate decisions and taking independent actions in the pursuit of high bounded rationality. In both contexts rationality is addressed exclusively from the organization's perspective. The task (business) environment is seen as a residual of the organization itself consisting of customers, suppliers and competitors, the control of which necessitates the possession of market power. This creates an analogy with the *structuralist* approach to strategic management. In particular, the activity-based view of a firm acknowledges that an organizational structure that 'fits' to the firm's value chain will improve a firm's ability to create and sustain competitive advantage (Porter, 1985). In a similar vein, there is an analytical link to the *resource-based* reasoning. In particular, as organizations tend to employ a *mix* of the three generic technologies (long-linked, mediating, intensive), there may be unlimited prospects for the growth of productivity through the utilization of excess capacity of the resources and the technological core of the firm. The inference by Thompson (1967) that organizations with multiple technologies seek to grow until the least-reducible component is approximately fully occupied is analogous to the idea of the least common multiple of a firm's growth introduced by Penrose (1959). Thompson (1967) proposes moreover, that managers seek to place the boundaries of the organization around those activities which, if left to the task environment, would be crucial contingencies. This is compatible to the main contingency argument on the firm's optimal boundaries raised by transaction cost economics.

Transaction cost economics provides a *specific*, operational *extension* of the generic organization theory with consequent managerial implications. The interlinked contingencies originating from uncertainty, opportunism, bounded rationality and the technological constraints of asset-specificity, provide the main rationale for the organizational design by a firm. This is manifested in the managerial choice of 1) the firm's boundaries in the transactions between vertically, horizontally or laterally

related activities and 2) the corporate structuring that facilitate the internal transactions of the firm. In deviation to the organization theory, transaction cost economics is intrinsically focused on the 'ways of organizing exchange'. This implies that all kinds of contractual relationships along the continuum of markets, contracts and hierarchies are considered viable modes for the governance of transactions. Such a view reflects the 'economizing' assumption on the behaviour of individuals and firms. While consistent with the resource-based view of strategic management the economizing assumption contrasts sharply with the 'strategizing' behaviour that guides choices in the Porterian approach to strategic management. As noted by Thompson (1967), organizational rationality is attained by means which the organization can control for the benefit of the firm. Such an assumption of purposeful action of the firm's management is assigned a negligible role in the mainstream of transaction cost analysis. On aggregate, the synthesis of strategic management and organizational design indicate that the pursuit of high productivity in the presence of bounded rationality is guided by 'strategizing' in the external transactions and 'economizing' in the internal transactions.

In its original formulation, transaction cost economics is concerned with the productivity of a firm and the productive ways of employing the transaction-specific assets, mainly indirectly. This is logical as the main focus is geared to the ultimate causes of transaction costs, bounded rationality and opportunism. They are largely beyond the direct control of the firm's management. Nevertheless, the analysis here demonstrates that the productivity in the context of a service firm may be of high theoretical relevance for transaction cost economics as well. Indicating 'economic friction' the occurrence of transaction costs suggests a waste of productive resources, which may be human or technological. Through the perspective of organizational fit and rationality, the mainstream of transaction cost economics is *implicitly* concerned with the productivity of the services of the transaction-specific assets as well as the productivity of labour (managerial) services in planning and executing the business transactions. The importance assigned to the expenses of effective governance suggests a *cost-oriented view* on productivity, or *cost-efficiency*. In this setting, the overall objective of the management is to minimize the costs of labour services (including opportunism) and the costs of governance, given the specifications of the outcome (including effectiveness) that the assets and the underlying transactions are expected to generate. It is pointed out here that the inclusion of the traditional transaction cost perspectives into the analysis services would enhance the robustness of the socio-economic analyses of service productivity. Through the mutual learning in the contractual

relationship and the customer's participation in the service production assets and the competences of the provider and the user become more productive, and at the same time, more specific to the contractual relationship. As the redeployability of the asset decreases, such a 'fundamental transformation' (Williamson, 1985) implies that the identity of the parties becomes increasingly important and the market is substituted for more hierarchical (complex) modes of governance.

In deviation to the traditional perspective of transaction cost economics, the outcome-orientated view developed in this thesis is dynamic and examines how the services of labour and transaction-specific assets can generate more, improved and more effective output. Based on the productivity model developed in Section 3.6, it is shown that the outcome-oriented approach can be addressed and developed systematically through a resource-based analysis of service productivity using vertical integration and control as a special case. Acknowledging the central role of bounded rationality, it is maintained that the profitability of vertical integration is highly dependent on the dynamic capabilities of the firm's management in matching the services of the transaction-specific assets with the optimal organizational mode. The primary concern in the internalization of the services of the assets is to secure the smooth running of the activities whose productivity the specific assets are expected to enhance. The owner of the asset (e.g. human capital), is faced by the trade-off between two sources of productivity, (1) scale-efficiency derivable from general non-specific services which are applicable to standardized activities in case of high number of customers, and (2) effectiveness derivable from the customized services which are used in non-standardized activities in a case of a limited number of customers. Growing asset-specificity enables the delivery of customized services which may improve the productivity of the processes of few clients, or one client only. Hence, *the analysis of service productivity in a case of changing asset-specificity is a special case of the generic productivity trade-off between scale-efficiency and effectiveness addressed in the descriptive value creation framework.*

In recognizing the organizational challenges to align incentives in professional services, the suggested productivity model puts forward the interplay between the technological and contractual choices in the context of service transactions. For instance, even if asset-specificity increases the overall productivity of the activity and the productivity of the user's processes, a 'farsighted' owner of the asset may be indifferent between high productivity impacts of the future uses of the asset and low productivity impacts of the present uses of the asset, if the services of the asset in markets and hierarchies are

expected to generate equal profitability net of governance costs. The outcome-oriented productivity model in the case of vertical integration may provide useful insights to the other contexts of make-or-buy and make-or-sell as well. In forward integration into distribution, diversification as well as the horizontal integration by multinational enterprises, the key driver of internalization is the firm-specific resources characterized by excess capacity in the productive services that are difficult to trade in the market. In the most generic case this is manifested by the organizational design in profitable innovation.

The ramifications of markets and hierarchies for the corporate governance and restructuring shift the focus from the external (inter-firm) transactions of services to the productivity of internal (intra-firm) transactions and service activities organized within a firm. While addressed by the organization theorists as well, corporate structuring is the other major field of application in transaction cost economics. The productivity of the organizational services of a firm is based on the 'models' of corporate governance, which are designed to economize on internal transactions and strategize on external transactions. Of the various organizational models the unitary form (the U-form) and the multidivisional form (the M-form) are the most prominent for the analysis of service productivity. *First*, they represent the main cases, which the various hybrid forms derive from. *Second*, these main cases provide contrasting implications for service productivity. In the original assessments (Williamson, 1989, 1985), the market-oriented *multidivisional* form is considered universally superior to the hierarchically oriented *functional* form in the corporate governance. This owes to the axiomatic view that markets should be relied upon as much as possible to attain high cost-efficiency in production, whereas hierarchy should be utilized limitedly only to attain aligned (low-powered) incentives for the productive use of the corporate assets. In this setting, the cost disadvantage of the functional form is assumed to grow in the face of corporate growth, as the costs of monitor and the congestion of managerial services tend to increase. Such an argument ignores (underestimates), however, the impacts of information and communication technologies (ICT) which improve the productivity of the managerial services in all governance modes.

The organization theory addresses corporate structuring more objectively and puts forward the contingency in the pursuit of the 'organizational fit' with the task environment. The insights of Thompson (1967) suggests that in circumstances where (subjective) uncertainty is low, and when the

productivity of the technological system draws on *functional specialization* and *scale-efficiency,* the U-form is the fittest (most productive) mode of organization. In the unitary form, effectiveness is determined mainly residually. Conversely, in circumstances where (subjective) uncertainty is high and when the productivity of the technological system draws on geographic specialization (diversification), as well as the reciprocal interdependence between the primary activities and high *effectiveness*, the fittest (the most productive) solution to the organizational design is the M-form. In the M-form, scale-efficiency is determined mainly residually.

6.3 Banking productivity and technology

The empirical part of the thesis examines how the theoretical arguments of the *extended* value creation framework can be applied within the universal banking industry, and how the empirical evidence on universal banking can be used to support the arguments that are raised in the synthetized framework. For that purpose the empirical aims to identify the specific industry characteristics that highlight service productivity. In general, the characteristics of the service technology and the measurement of the productive performance in the banking business highlight the diversity of the financial and operative goals of a banking firm. The central issues are whether and how productivity matters in universal banking, and how the characteristics of banking technology and the established methods of evaluating banking performance within the industry and the affiliated economic research illustrate the arguments of the descriptive value creation approach (VCA). **Section 5.3** aims to answer **the research question 2.1:** *what kinds of specifications and alternative approaches can be found in the goals, technology and productivity, when the synthesized (descriptive) framework is applied in the universal banking industry?*

The examination of the specific characteristics of the universal banking industry in this section is supportive of two main conclusions. *First*, the empirical evidence on the industry suggests that analysis of productivity in universal banking calls for a more coherent and robust framework. *Second,* the evidence points out that the premises of the descriptive value creation framework (VCA) are distinguishable in the managerial practises of conducting banking business, and in the affiliated economic analysis. More generally, the examination of the focused aspects of *banking technology*, *banking economics*, *the corporate goals* and *the measurement of productive performance* within the

universal banking industry indicate that the descriptive VCA offers a workable and robust framework for the empirical analysis of service productivity. The inquiry further points out that the banking industry is an ideal case to examine the productivity of evolving service activities that show the characteristics of traditional manufacturing and knowledge-based services. This brings along analytical challenges which necessitates a comprehensive interpretation of the service technology as well. Whereas the productivity of the standardized and tangible banking products is highly reliant on the performing technologies, i.e. the ICT and the other physical facilities, the productivity of the intangible banking services depends crucially on the organizational capabilities, which guide the use of labour services and the services of human capital. In recognizing the strong interdependence between service technology and organization, the focus in this section is geared to the key aspects of technology that are relevant for addressing banking productivity. This in turn provides the rationale for the 'metrics' in assessing the productivity of banking business and services.

Beyond the tangible aspects of ICT that are manifested in the performing technology, the various dimensions of the banking functions can be *comprehensively* addressed through the generic classification of the technologies as outlined in the organization theory (Thompson, 1967). Intensive technology puts forward the outcome and the *effectiveness* of the financial services for the customer. Implemented e.g. in corporate banking and asset management, intensive technology is highly customized and rests on combined capacities required by an individual case or project. Intensive technology is associated with high customer participation in the production and delivery, and hence it is based on the open systems logic. As each task delivers output to, and receives inputs from the other tasks involved in the process, the interplay of activities in the intensive technology is reciprocal. Organizational fit and productivity necessitates mutual adjustment in the coordination of the activities of the parties involved - the bank and the customer. This enables confidentiality, which is prerequisite in all banking business. Intermediating technology stresses transactional and informational *efficiency* in the coordination of the financial markets, where the interdependence of the lenders and borrowers with respect to the banking system, is pooled. In case of pooled interdependence, the highest organizational productivity (fit) is attained through the coordination of standardized activities. This involves the establishment of rules and routines to constrain independent action. The third main dimension of banking technology is long-linked technology, which pursues a balance between the *scale-efficient* production and *effective* sales and distribution of the banking offering. In case of long-linked

technology, the interdependence between the core activities is sequential (vertical). As a consequence, the tasks can be carried out only after the completion of the preceding tasks. When productivity of the banking activities is subjected to pre-design and control, the organizational productivity assumes coordination through an activity plan and a hierarchical control of activities.

Fostered by deregulation and the consequent intensification of rivalry within the universal banking industry, the computerization of the mediating technology (activities) has shifted the strategic focus and sources of competitive advantage increasingly to the management of long-linked and intensive technologies. Facilitated by higher quality of human capital and ICT applications, the service co-innovations with the biggest corporate clients are transferred (replicated) to the offerings - including technical, financial and strategic solutions - of other customer segments. Showing increasing technological complexity, information-intensity and customer service content in the sales activities, the value chains of the universal banking corporations have become increasingly open and responsive to effectiveness and customer's productivity. The appraisal of the banking industry with respect to the synthetized classification of service technologies supports the conclusion that in the past 20 years the business logic in universal banking has shown a marked shift from the standardized consumer and business services towards *knowledge-intensive professional services.* In consonance with Barras' reverse product cycle model, there has been a gradual shift in service innovation and productivity regimes from *efficiency* to *effectiveness*. At the same time the business responsibility is increasingly shifted to an individual account manager at the customer interface.

Based on the mediating and long-linked perspectives to banking technology, the *'assimilation school'* in the applied economics highlights the main challenges in measuring the productivity in banking and services, more generally. However, the closer examination of the established approaches to banking productivity - scale-efficiency, cost-efficiency as well as the profit growth decomposition - shows that the implications of the assimilation paradigm are supportive of the analysis and the arguments of the descriptive value-creation approach (VCA) to service productivity. On aggregate, while the neoclassical paradigm and the efficiency perspectives represent the mainstream in the economic analysis of banking productivity, the unresolved challenges posed by the intangibility of banking production and performance has directed the academic focus towards the socio-economic and the value creation considerations as well.

The *managerial* approach to the measurement of banking productivity is consistent with the premises of the descriptive VCA. The overall performance resulting from capital allocation, risk management and operative processes of universal banks is measured by the total share holder value (TSR), which reflects the market value of the bank. In dynamic terms, TSR reflects the net present value of the future cash flows discounted by the bank's required rate of return. This is analogous to the formulation of the value creation objective of a service firm within the descriptive VCA. Based on the VCA logic, the cost-income ratio enables comparisons of the *productive performance* across banks with differing product portfolios, scale and the scope of the activities and corporate strategies. The inadequacy of the cost-income ratio to estimate customer's productivity and effectiveness suggests that the financial measurement of service productivity will benefit from the inclusion of non-pecuniary aspects of perceived quality and effectiveness in the analysis of service productivity. Highly contributory is the methodological approach of EPSI Rating, where customer's productivity is addressed separately for the 'service offering' and the 'customer service' (sales). EPSI-surveys suggest that the banks' performance in customer satisfaction is contingent on the bank's productive performance in general, and the bank's strategy with respect to scale-efficiency and effectiveness. EPSI Rating provides a viable template for the *further development* of the analytical tools and the empirical analysis of service productivity.

6.4 Productive strategy and organization

The empirical part of the thesis shows the competing universal banks, with shared economic goals, may differ substantially in their corporate strategies and organizational routines. Accordingly, there may also be marked differences is the banks' service technologies. In the light of the synthetized, explanatory value creation approach (VCA), the empirical study illustrates how universal banks pursue differentiated productive regimes. A productive regime is defined here as a systemic (heuristic) view of the top management of a service firm how to balance between scale-efficiency and effectiveness in the production and the delivery of the banking offering. This view is embedded in the corporate strategy and manifests the competitive advantage of the bank. The method of identifying a firm's productive regime in this thesis is highlighted in a comparative analysis of the specific characteristics of the corporate strategy and organization in the two Nordic banks *Nordea* and *Svenska Handelsbanken.* **Section 5.4** aims to answer **the research question 2.2**: *what kinds of specifications and alternative*

approaches can be found in strategic management and organizational design when the synthesized (explanatory) framework is applied in the universal banking industry?

The examination of the productive regimes of the case banks supports the conclusion that the case banks are managed with 'high bounded rationality', i.e. *there exists a high consistency between the company's organization, strategy and the utilization of ICT*. The organizational model reflects the strategic objectives - and the competitive advantage - of a firm with respect to the scale-efficiency and effectiveness of the service offering. In a similar vein, the productive strategy and the organizational design highlight the technological premises and routines, which define the 'recipe' (production function) of the service production and delivery. More generally, the comparative case study of Nordea and Svenska Handelsbanken showed that there are *substantial* differences in strategic objectives, organizational design and hence competitive advantage with respect to service technology (scale-efficiency and effectiveness) in the universal banking industry. The strategic goals and the organization of the case banks revealed differences in the principle of the divisionalization and specialization as well as in the centralization vs. decentralization of the banks' activities. Along with the specific characteristics of the corporate merchant banking (CMB), the differences are further identifiable in specific aspects of corporate governance. These aspects include a) the practices of business planning, b) the corporate incentive schemes, c) the coordination of production and distribution, and d) the intra-firm competition and benchmark.

The organizational structure of *Svenska Handelsbanken* can be characterized as multidivisional or M-form (Williamson, 1985), where the main business units have high autonomy. The principal mode of divisionalization is geographic (horizontal), implying decentralized management and business responsibilities, as well as the specialization of production and sales activities by geographic markets. The corporate governance of Svenska Handelsbanken is to a high extent guided by external factors – the competition between banks – and it shows high adaptability to changes in the market conditions. Thus, the overall performance is assessed predominantly horizontally in relation to the competitors. In the organization of Svenska Handelsbanken, the division between sales and production has not been made explicitly. This inseparability is in line with the general conclusion that the production and delivery of the service offerings is based on *intensive technology* utilized in traditional labour-intensive

services (Thompson, 1967). Such technology is more concerned with the effectiveness of the offering rather than scale-efficient processes.

There is also other evidence which indicates that in Svenska Handelsbanken the productive regime draws predominantly on the effectiveness of services. According to the interviews, the management regards high customer satisfaction, which refers to high customer's productivity, and tight cost control in branch operations as the principal sources of the bank's own productivity. High customer satisfaction is pursued via the customized quality of service offerings. An entrepreneurial business model is implemented at local branches, where the utilization of the economies of scale is limited. This kind of business model enables to some extent the adjustment of effectiveness and scale-efficiency to meet the demands of various types of customers. It also means that the utilization of the options of co-production with the customer is generally high and flexible. The high autonomy and business responsibility assigned to the branches encourages proactive collection of information on customers' context – yet, the collection and management of this information has not been organized systematically. This is reflected in *ad-hoc* customer service concepts and varying service offerings across branches and account managers.

The organizational structure of the other bank, *Nordea* can be characterized as unitary or U-form (Williamson, 1985), where the functional activities of the corporation are separated and organized hierarchically. The principal mode of divisionalization is sequential between the production and sales activities. Such a pattern is associated with centralized and hierarchical management and business responsibilities, and functional specialization in the production and distribution. The corporate governance of Nordea is to a high extent guided internally, through the corporate goals. It is less responsive to the changes in the market conditions. The overall performance is assessed horizontally in relation to competitors, but also longitudinally in relation to the bank's historical performance and the predetermined goals. The prominence of sequential division in the organizational model supports the general conclusion that the production and delivery of the banking offerings are based on *long--technology* utilized in traditional capital-intensive manufacturing (Thompson, 1967). Such a technology is more concerned with scale-efficient processes than effectiveness.

Also the interview material indicates that the productive regime of Nordea draws predominantly on the scale-efficiency of services. This owes partly to the bank's history and the evolving organizational structure. Deviating from Svenska Handelsbanken, where the static cost-efficiency implies cost-cutting at a given scale of production, the cost management in Nordea is focused more on the utilization of economies of scale in the banking processes. As the scale of operations and the centralization of the banking activities are controllable variables by the top management, there is the option for continuous improvement in cost- and scale-efficiency. The growth of sales and the margin between revenues and costs are considered to be the main performance indicators. The key drivers of productivity are centralization and the division of labour between the core and the supplementary activities. In Nordea's regime, high emphasis is put on preplanning and budgeting. Hence, customer's productivity results from the predetermined levels of effectiveness and standardization. Standardized quality of the offering is enhanced by specific customer service concepts and the service modularization which are targeted to the 'representative customer' in each of Nordea's customer segments. This implies that the utilization of the options of co-production is generally low and rigid. While the information on customers' context is collected and managed systematically, it is based on rough segmentation. This does not enable a profound analysis of customers' situations.

6.5 Evaluation of the study and suggestions for future research

Progress in social sciences is usually incremental, based on empirical observations, improved knowledge and improved theories of the real world. In this thesis, many of the presented ideas of service productivity draw on the established theories of the firm. The theoretical progress implies that useful theories are identified, modified, and combined with new insights to capture the intrinsic features of service activities and performance. This contributes to improved coherence and analysis in *service economics*. For instance, the earlier studies on industrial districts and networks (Tsai et. al., 1998), the business opportunities brought about e-business, and firms' competences in creating customer value (Möller, 2006), all point to the conclusion that a firm's overall objective and the criterion of success is the capability to create value. As indicated by the earlier studies on the issue, no single theory can alone explain the value creation potential of a firm. Rather, an integration of the received theoretical perspectives to value creation is needed (Amit et al., 2001). Following the same line of reasoning, the value creation approach outlined in this thesis accounts for the complementarities

as well as the inadequacies of the earlier contributions. The main contributions of the constituent theories to VCA are summarized in Figure 49.

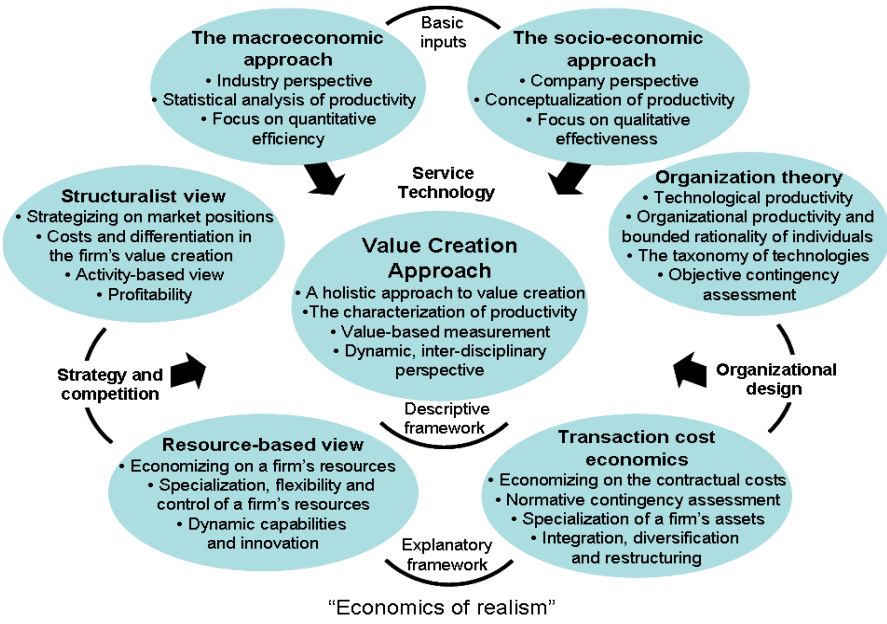

Figure 49. Contributions of the theoretical constituents of the value creation approach.

Stressing the importance of the creation of customer value, the socio-economic theories invariably disregard the economic reality that 'anything cannot be offered for the benefit of the customer'. In reality, the creation of customer value is constrained by the scarce resources, service technology and the profit seeking objectives of the service firm. The macroeconomic approach in turn, particularly in the neoclassical tradition, accounts for the technological constraints of the profit maximizing service firm, but neglects the central role of effectiveness, which largely determines the customer's perceived value in services. The inter-linkage to the other, explanatory disciplines builds on the analogical perspectives to the productive trade-off between scale-efficiency and effectiveness, which characterizes the generic service technology.

It is apparent that each of the constituent theories of VCA benefits from the synthetized analysis as well. The incorporation of 'services' and 'productivity' in the agenda of strategic management 'fills the research gap' and improves robustness of the theory on a firm's competitive advantage. In particular, the conceptualization of the productive regime of a firm refines the implications of the structuralist approach to strategic management in the examination of the relationship between the alternative strategies of differentiation and cost-leadership (Porter, 1998). In a similar vein, the idea that organizational design lays at the core of service technology and productivity, as well as the notion that service transactions, in the face of high asset-specificity, may have marked ramifications on productivity, extends the foci of the organization theory and the applicability of transaction cost analysis in the topical issues. In regard of industrial organization, the examination of corporate structuring and governance through the lenses of service productivity supplements Alfred Chandler's historical accounts on industrial dynamics and capitalism. Moreover, the development of VCA suggests that supplementary perspectives that account for the characteristics of the 'entrepreneurial service firm' may be useful. Instructive are the theoretical insights of *evolutionary economics*, which are utilized in this thesis as well[1]. In regard of evolutionary economics, an intriguing interface to service productivity comes from the hierarchical decomposition of a firm's capabilities into corporate strategy, organizational routines and human skills. At each level the central issue is managing the trade-off between the rule-guided and discretionary decision making by the firm's employees.

For the further assessment and the development of VCA, it is essential to note that productivity represents one of the tactics to enhance the value of a service firm. The validation of VCA in this thesis assumes implicitly that firms within the industry are subject to rivalry, and that the survival of the firm in the competition requires some entrepreneurial innovation. Hence, given the implicit assumption that the markets are competitive, the entrepreneurial strive for higher productivity encourages the co-employment of the complementary tactics, the pricing of the inputs and output as well as the utilization of the scale and the scope of the firm's activities. A closer examination of the domains of a firm's value creation indicates that the utilization of economies of scale and scope as well as the related tactics of vertical and lateral integration draw predominantly on productivity considerations. The pro-competitive focus of the descriptive VCA implies that the explanatory VCA also stresses the competitive tactics of service technology and productivity. Hence, from the productivity perspective, the applicability of

[1] See e.g. Nelson and Winter (1982) and Hodgson (1999).

VCA is more limited when the firms pursue mainly anti-competitive tactics e.g. in pricing. The anti-competitive perspectives are however, also included in the 'economics of realism' which VCA is aimed to present.

In some cases the requirements of economics of realism and the theoretical premises of VCA is hard to reconcile. For instance, while the actual productivity of a service firm can be defined theoretically by the distance to the productivity frontier, the pecuniary indicators of the productive performance are rough, indirect proxies of the firm's actual levels of productivity. In the theoretical setting of the thesis, the revenue-cost ratio assumes that service production is associated with constant returns to scale, and the prices and the costs of the services are mainly determined by the technological characteristics (scale-efficiency and effectiveness) and the quality of the services. In reality, firms hold some monopoly power and production is often associated with scale economies. This puts higher requirements to the productivity indicators. Moreover, the thesis assumes that perfect consistency holds between technology, strategy and organization. In that case the characteristics of service productivity are derivable from the firm's strategy, which in turn is manifested in the firm's organizational design. Given the realistic assumptions of bounded rationality and the prominence of uncertainty, it is easy to conceive that perfect consistency is rather exceptional. In practise, the strategy of a service firm may not be defined in terms of productivity, or it may include elements which conceal the firm's productive strategy. To some extent this turned out to be the case with the examined banks as well. In a similar vein, it is also clear that the design of a firm's organization may result from other considerations than strategy or productivity. This is particularly the case when the ramifications of the organizational fit are poorly understood by the management (the cases of high bounded rationality). In conclusion, these examples indicate that the distinction between the theory and the reality is always a matter of degree and it is manageable with a realistic analysis.

A robust benchmark of companies requires that the qualitative data on their productive regimes is available and comparable across the industry. This holds for the quantitative metrics of productive performance more generally. The case companies in this study enable high comparability, as the attributes of the organizational models and the corporate governance showed systematic variation in the opposite directions. In case of a larger sample of banks - and companies of other service industries – high comparability may require that the organizational models are addressed with a higher number of

dimensions and more detailed data. A critical issue is also the company size. The organizational models of big listed corporations such as the universal banks are usually established, identifiable and replicable to various geographic markets and locations. Many knowledge-based services in contrast, are provided by small- and medium-size enterprises, whose organizational models may be unstable and less transparent. Further modifications in the organizational analysis is then required. Another issue for the future research is the distinction between the back-office activities and the front-office activities in service processes. While the productive strategy of a firm may be common to both categories of activities, this cannot be considered as a universal rule. The distinction is made explicit in the customer satisfaction surveys. The analysis of the producer's and the customer's productivity can be improved through the implementation of better indicators and the inclusion of additional data on the customization quality and the standardization quality in the customer satisfactions studies.

In summary, the empirical results of the thesis show that it is possible to organize the production and delivery of banking services in very different ways – actually in the ways which in some respects can be regarded as opposite. From the viewpoint of productivity, both of the opposite ways seem to enable success. The cases also question the simplifications regarding the favourability of the 'service-oriented model' (Svenska Handelsbanken) over the 'manufacturing-oriented model' (Nordea). Even though the former results in higher effectiveness, it is evident that not all customers prefer high customization regarding all services. More detailed analyses – both theoretical and empirical – are needed on the ways in which scale-efficiency and effectiveness (standardization and customization) should be balanced in different circumstances in banking and in other service industries.

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Appendix 1

The list of topics in the company interviews

1 The background information

- The company and the unit
- The number of employees and turnover
- The ownership structure
- The duties and position of the interviewee
- History, others

2 The key characteristics of banking business

2.1 Industry structure, competition and technology

- The developments in the corporate and consumer markets
- The growth of the markets
- The competitiveness of the business environment
- The means and features of competition
- The degree of industry concentration
- Technological development
- New services and the synergy with insurance

2.2 The organizational structure of the bank

- The headquarters
- Districts and district offices
- Hierarchy and autonomy of a branch
- Decision making authority at the customer interface
- Specialization by market segment
- The optimum size of a branch
- The supporting corporate activities/services

2.3 The service strategy of the bank

- Strategy: what, to whom, how and where
- Size of the market segments, and the sophistication of services
- Consulting services

- Customership: size of the client, partnership, customer turnover, predictability
- Customers' concentration of purchases
- Cost-leadership, differentiation and specialization
- Competitiveness and competitive advantage
- Resources and their development
- The staff turnover, the competitive advantage of human capital

3 Service productivity and its measurement

3.1 The evaluation of success and the competitiveness of the bank

- Economic goals,
- Market share (definition), size of the company
- Return on Equity
- Cost-income ratio
- Compatibility of the goals
- The goals of the branch and the bank

3.2 The importance of service productivity

- The productivity of the business activity from the company perspective
- The definition of service productivity
- The compatibility of the goals
- Operative efficiency, e.g. back office activities
- Effectiveness, e.g. front office activities, customer needs
- Quality and the customer needs

3.3 The challenges of measuring service productivity

4 Productivity growth and innovation

4.1 The organization of innovation

- The methods of innovation
- Internal vs. external innovators
- The role of customers

4.2 The means of innovation

- New services and concepts
- New technologies, the role of ICT
- Organizational and managerial innovations

4.3 The obstacles to innovation and productivity growth

5 Service technology

5.1 The critical characteristics of service process

- Capital-intensity vs. Labour-intensity
- Tangible vs. intangible service outputs
- Standardized vs. tailored services

5.2 The customer's involvement in the service production

5.3 The importance of team-work

5.4 The problem-solving strategy (the complexity of customer's problems)

5.5 Face-to-face interaction in customer service

5.6 Back office-front office technologies

5.7 The standardization and customization of service quality

Appendix 2

Industry drivers and productivity in universal banking – The Porterian perspectives

1 Introduction

On the basis of the empirical data collected in the thesis, Appendix 2 examines the industry characteristics and dynamics of universal banking from a broader perspective. In support of the empirical analysis in Sections 5.2 and 5.3, this overview further highlights the business logic and the main drivers of banks' competitive advantage and productivity in the actual business context. *The analysis here points out that the evolutionary perspective to the structuralist analysis of strategic management (Porter, 1980, 1985; McGahan, 2004) provides a viable framework to link technology, market structure and the rivalry of an industry with the analysis of productivity in the universal banking industry.* As noted in Section 5.2.2, the techno-economic change of the Finnish banking industry in the last 20 years is characterized by the evolving financial markets with increasing business orientation, corporate entrepreneurship and innovation enabled by new technological standards. From a broader perspective, they are reflective of the evolutionary trajectory which defines the general business environment of the universal banking industry (cf. McGahan, 2004). A prominent role here is played by the banking regulation policy. Through the promotion of strong financial institutions and effective consumer protection, and the preservation of financial stability (OECD, 2005c), banking regulation aims to facilitate the competitiveness of the business sectors and consumers' welfare. Whereas the issues of stability of the banking sector and the need of regulation are central and intimately related to the intensity of the rivalry and the functioning of the financial markets[1], the focus in this overview is geared to the non-regulatory aspects of the banks' business environment.

[1] The importance of *competition* in fostering efficiency and productivity across industrial sectors is acknowledged in theory and practice (OECD, 2005c). In the banking sector, however, the case for unbridled competition remains controversial, owing in large part to the inherent vulnerability of financial institutions to instability and to the potential damage that systemic problems in the financial sector can cause to other sectors (Goddard et al., 2001). While historical experience has underscored the potential costs of financial crises, there is little consensus regarding the nature and significance of the trade-off between stability and efficiency, and the extent to which limits on competition can be justified. From a policy perspective, it is therefore not straightforward to identify which competitive structure maximises the overall economic benefits. According to OECD (2005c), past trends in deregulation (the removal of price controls, the elimination of barriers to cross-border capital flows, the easing of regulation on banking activities, etc.) and improvements in the technologies of information and communication (ICT) *have fostered competition* in most segments of banking activities, especially in the

2 The evolutionary perspective

Building on Porter's path-breaking work on competitive strategy (Porter, 1985; 1980) and the studies on the US industries, McGahan (2004) concludes that every industry – including universal banking - follows one of the four evolutionary trajectories characterized by *progressive, creative, intermediating* and *radical change* (see below). Industry evolution reflects the changes in the ways business is conducted within the prevailing regime called 'the dominant model'. Encompassing the technological standards of services as well (cf. Anderson et al., 1990; Murmann et al., 2006), a dominant business model[2] exists when the leading firms in the industry organize (and conduct) their activities similarly. A single basic approach emerges as particularly efficient and effective and gains grater legitimacy than the alternatives (McGahan, 2004). Network effects and externalities are the major facilitators of the adoption process. While the transition of industries across the four evolutionary trajectories is exceptional, the changes that alter the dominant model within the trajectory may be profound. The ways in which business is conducted in the dominant model of the evolutionary trajectory is inter-elated with the broad conditions called the *defining rules* and their *corollaries* (see Sections 3 and 4) as well as the changes in the business environment (see Sections 5-9).

The business environment *shapes* the structure, the attractiveness and the profitability of the industry through the *five fundamental forces* defined in Porter (1980; 1985). The five forces (buyer power, supplier power, threat of substitution, intensity of rivalry and threat of entry) provide the *guidelines* (the rules of thumb) that describe how the industry structure changes[3]. The central point made by McGahan is that the core of sustainable and superior performance of a firm is not to *defend* against the five forces or to influence them as suggested by Porter (1980), but to *understand the rules* of industry change (McGahan, 2004). Developing a successful strategy depends of understanding the implications

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area of investment banking. And, although the wave of liberalisation that took place in the 1980s was initially followed by a series of crises in the financial institutions, developments since then underscored the major role played by other factors such as inadequate regulation, skewed incentives created by tax systems, and macro-economic policies. In the aftermath of the latest global financial crisis which started to proliferate in 2008, these concerns seem particularly justifiable.

[2] A dominant model allows the leading firms to develop the economies of scale and scope necessary to capture some of the value that they create. Changes in the dominant models mark breakthrough transitions in industry structure (McGahan, 2004).

[3] According to McGahan (2004) any change in an industry structure must work through these five forces to take hold (McGahan, 2004).

of the change of the industry structure irrespective of the driver (ibid.)[4]. Accordingly, when strategy is aligned with industry evolution, a firm's performance can be improved as buyer acquisition and retention becomes significantly more effective and less expensive, supplier relationships become easier to manage, and competitive threats diminish as the organization is perceived as distinctive. Porter (1980; 1985) maintains that there are three generic strategies for outperforming the competitors, i.e. the overall cost leadership, differentiation and focus. While a cost cutting is the prominent facet of the Porterian strategy within the universal banking industry, the empirical evidence of the thesis shows that the Finnish universal banks are engaged in differentiation with respect to products, services and organizational capabilities as well as focused strategies at the same time.

On the basis of industry data collected in the thesis, it can be concluded that the characteristics of the *evolutionary process of the Finnish universal banking industry show the highest compatibility to the progressive trajectory. The analysis shows that the productivity implications of the progressive trajectory can be interpreted within the value-creation approach to service productivity outlined in Section 3.4.* According to McGahan (2004), firms following a progressive trajectory show stable core activities and assets[5]. Such firms tend to build on their established capabilities over time rather than abandon old ways of doing things in favour of something new. Under progressive change innovation tends to be relatively small in scale - companies excel by innovating incrementally in a ways that don't rock their core positions (McGahan, 2004). Moreover, innovation typically revolves around constant feedback from the buyers and the suppliers. Growth of the firms usually involves geographic and product-line extensions by firms that seek to dominate the competition in their local areas. Phases of the industry life cycle tend to be long, and adhering to the dominant model is essential to a sustained performance. Other attributes of the progressive trajectory conforms to the characteristics of universal banking as well. Namely, "companies that [aspire after or] achieve better profitability than their rivals find ways to upgrade their approaches through constant refinements of the links between activities" (McGahan, 2004, p. 154). This is necessary, because competitive advantage tends to bleed into the dominant model over time. In particular, core assets are created through experience and learning effects that accumulate from the repetition of the activities of the firms. As indicated in Section 5.2, banking

[4] According to McGahan (2004) the essence of strategy is a set of guidelines that describe how the firm will uniquely *create and capture value*. Strategy guides decisions by executives, middle managers, field managers, and front-line employees in any organization.

[5] Central in the typology of the evolutionary trajectories are the *core activities* and the *core assets* of an industry. They may be unthreatened (stable) or threatened (unstable) with obsolescence by the evolutionary forces (see below).

technology is embedded in the organizational routines (Nelson and Winter, 1982). When firms conform to the rules of progressive evolution, they are able to achieve stable profits with relatively little risk to their survival. In such an environment, successful companies usually operate under simple organizational structures with straightforward decision hierarchy, a clear allocation of responsibilities, and aggressive cost management (McGahan, 2004). On balance, performance is contingent on two primary capabilities, *the development of efficient set of interlocking activities, and the ability to respond quickly to feedback from buyers and suppliers*[6]. These attributes are distinct in universal banking as well.

3 The defining rules

The rules that define the industry change hold in all stages of the trajectory. The defining rules are concerned with the robustness (stability) *of the core activities and core assets*. Individual activities are regarded as the basic unit of firm's competitiveness within the Porterian approach (Porter, 1985), whereas assets and other resource are viewed as the main source of competitiveness within the resource-based approach of strategic management (Barney, 1991; Hoopes et. al., 2003). In the formulation of McGahan (2004) assets are *durable* objects that retain their productive value even after lying dormant for some period of time (e.g. one year). To qualify as an asset, a durable object must be a firm's property[7]. The necessary conditions for the existence of a firm's activity is that it is *controlled*

[6] The other three trajectories bear some implications on universal banking as well. The *creative* industry evolution involves major innovation but not a threat to the core activities. This implies that the industry's relations with buyers and suppliers remain relatively stable as well. The main difference with respect to progressive change is that under the creative change the core asset are threatened with obsolescence. The threats do not come directly from the suppliers or the buyers, but rather from the current competitors and new entrants. In the case sustainable performance is contingent on several primary capabilities such as project management, risk assessment capabilities for managing portfolio of projects, and the development of a network of complementary upstream and downstream relationships for commercializing new product [and services] efficiently (McGahan, 2004). An *intermediating* industry evolution occurs, when a new approach threatens an industry's core activities and thereby jeopardizes the firm's relationship with buyers and with long-term suppliers. Intermediation typically involves substantial changes in the structure of information available to the buyers and the suppliers, caused e.g. by the liberalization of the regulated service markets. Under the intermediating change, performance depends on the reconfiguring activities to create value in unprecedented ways, and on the ability to unbundle old assets and redeploy them in new ways, while building new buyer and customer relationship (McGahan, 2004). A *radical change* occurs when a new approach threatens both the core activities and core assets within an industry, and is usually motivated by a substantial technological and a regulatory breakthrough. In that case a critical challenge faced by the firm is to avoid deepening the commitments to the old business. Hence, the performance depends on the ability to avoid redoubling investments in the business and to extract value out of the established assets and activities (McGahan, 2004).

[7] To modify the argument incrementally, it is pointed out here that the assets owned by a firm are important but not the only category of resources which bear on a firm's competitiveness in services (see e.g. Løwendahl, 2005). The overall resources include the external resources and capabilities which are beyond the firm's direct control.

by one or more firms within the industry and the action is profit oriented, i.e. its increases *revenues* or lower *costs* (McGahan, 2004). Assets and other resources constitute the foundation on which the competitiveness a firm's activities build on (Porter, 1985; Løwendahl, 2005). By definition, an asset or an activity is 'core' if its eradication today would lead to diminished *profitability* one year later, despite the efforts to replace the eradicated asset or activity (McGahan, 2004)[8].

From the stability of the core activities with the progressive trajectory (see above) follows that firms' relationship with the buyers and the suppliers are stable. When incremental changes occur, the main logic in the value creation is not disturbed, and the value of the changes is quickly verified through the feed back from the suppliers and customers who appropriate part of the enhanced value McGahan (2004)[9]. As noted in Section 5.3 the core activities of a universal bank are related to sales, production and strategy, which exhibit a various forms of specialization based on banks' differentiation in their organizational capabilities. Examples of other activities that are compatible to the definition of McGahan (2004), are the procurement of the non-financial inputs (e.g. office facilities) and the management of the financial capital (by the treasury), the processing of the loan documents, as well as the ICT management, human relations and controller functions. The degree of specialization and decentralization in the core activities is not particularly consequential with respect to the supplier and customer relations. On the customer's side the most influential are the improvements in the existing products and services by the banks to create new and to establish the existing business relations. For instance, many of the capital markets products are first developed and tested with big corporate clients before their implementation in a larger scale in other customer segments. The incremental product development is based on a proactive monitor of customer feedback and market outlook. Profitable 'product secrets' are nevertheless difficult to maintain over longer periods. The introduction of the improvements in the cash management services and the banks' information systems in particular, necessitates a close co-operation with independent ICT suppliers. In general, the stability of business

[8] Accordingly, *core asse*ts are durable resources that make the firm more *efficient* or *effective* at performing core activities, and can include intangibles such as brand capital and knowledge capital. Core assets are threatened with obsolescence when a new approach accelerates their real rate of depreciation. *Core activities* are recurring actions that create value both by making industry's supplier more willing to transact and by generating greater willingness to pay among the industry buyers (McGahan, 2004,).

[9] In case of the banking industry, Goddard et al. (2001) notes that once the bank's activities have been disaggregated, the process of appraisal can take place. Each of the support activities is linked to each of the primary activities to a greater or lesser extent. The Porterian analysis examines how these links can be improved in order to increase the margins on each product.

relations within the banking industry correlates positively with the size and the strategic importance of the supplier and the customer.

From the stability of the core assets within the progressive trajectory follows that firms can plan their investments carefully and firms are not forced to innovate as they are not subject to large scale threat to the industry's foundations. Consequently, the terms of competition tend to change in predictable ways (McGahan, 2004). As noted by Goddard et al. (2001) competitive advantage can arise in the four main areas of the banking industry: human resource, financial resource, physical assets and intangible assets, which are all relevant for the banking productivity. Within the universal banking industry, physical capital involves buildings (locations) and machinery such as the ICT equipment and infrastructure and other investments in the physical facilities, while the financial capital involves assets that show a varying degree of liquidity, such as cash, deposits, trading stock, debts and other receivables from the public. The profitable use of the tangible assets, the financial capital in particular, is highly contingent on the quality of the intangible assets (or resources), which constitute the competitive core of a bank. Of the highest importance are 'the organizational capabilities' (Nelson and Winter, 1982; Teece et al., 1997) which guide the management of the core activities and the information systems. Part of the organizational capabilities is the corporate culture, which is conducive to brand capital of the bank. It is the asset, which is the most difficult to imitate. The influence of brand loyalty is reflected in the composition and in the quality of the customer base[10], which influence the volume of sales and profitability. Another type of the core resources is employees' skills. The actual competitiveness and performance of the banking firm is highly dependent on the qualified personnel. On aggregate, universal banks are competing for skilled human capital in the labour markets and for the valuable customerships in the product markets, simultaneously.

4 The corollaries

Within the evolutionary framework, the *corollaries* follow from the defining rules of the evolutionary trajectory and they deal with three major issues, 1) the clarity of industry boundaries, 2) the terms of

[10] With respect to employees' skills, the evolutionary trajectory of the banking industry shows some characteristics of the *creative change* as well. Followed by the financial crisis at the end of the 1980's, the technological change led to the obsolescence of the traditional manual skills which were based on *promptness* and high efficiency in the transactional services. Respectively, there was a growing demand for the marketing and ICT-oriented skills. These skills were needed in the production and the sales of the financial services in the competitive markets.

operational effectiveness, and 3) the locus of innovation (McGahan, 2004). In general, the *boundaries* of progressively changing industries are easy to define as the dominant model of organizing activities sets a high standard for efficiency in the business. Some definitional problems are caused by 'fringe' firms which are more difficult to identify as insiders or outsiders. The fringe firms deviate from the industry's leaders either geographically or in product features (McGahan, 2004). With respect to *operational effectiveness* (this corresponds to the overall productivity) the dominant model of the progressive trajectory emphasizes a system of inter-locking activities. In particular, while each activity is relatively easy to copy by the rivals, the entire system of activities is difficult to imitate. This owes to the high complexity in the coordination of the activities. Often a powerful corporate culture emerges to coordinate choices made by dispersed employees (ibid.). *Innovation* is usually most effective when it involves (i), adding a new activity to the system, and (iii) adjusting the way the activities are coordinated and, (ii) improving information flows between the activities (McGahan, 2004).

For the *industry boundaries* of universal banking, an appropriate criterion is the extent to which the companies share common target customers, products and service activities, and common suppliers for a particular core, or supporting activity. From this perspective the universal banking industry in Finland encompasses three leading players, Nordea, OP-Pohjola Group and Sampo Bank, and the smaller banks including Svenska Handelsbanken, Tapiola Bank, Bank of Åland, and Aktia Group. Moreover, there are two banking groups of independent savings banks and cooperatives, which operate locally. The branch network of the leading universal banks and Svenska Handelsbanken offers the full range of banking services and products, and covers most of the geographic markets in Finland, whereas the smaller banks with limited scope in geography and the offering represent the 'fringe' firms in the universal banking industry. The 'fringing' is also manifested in the insurance services. Based on the financial synergy in the savings and the borrowing as well as the economies of scope in service production and marketing, insurance services are to a varying extent integrated with the banking activities. The integration between the banking and the insurance activities is, however, unsystematic and shows firm-specific patterns. At the margin, there also exist a large number of firms, which are specialized in specific products and services of the universal banking industry[11].

[11] Examples can be found in investment banking, asset management, investment fund management and direct banking. Some chain stores also offer banking services to their customers.

Within the analytical framework of McGahan (2004), *operational effectiveness* means performing similar activities better than rivals perform them (Porter, 1998). Hence, it approximates conceptually to a firm's productivity (see Section 3). According to Porter (1998), operational effectiveness includes but is not limited to efficiency. It refers to any number of practises that allow a company to better utilize its inputs, for example, by reducing defects in products or developing better products faster (ibid.). The structuralist approach to strategic management (see Section 4.2) assumes that operational effectiveness can be defined in terms of cost-based strategy and differentiation for which there is a concave and a continuous trade-off on the best-practise frontier (Porter, 1998). For the industries under progressive change the operational effectiveness of enterprises is rooted in the organizational capabilities in coordinating the interlocking activities, and inducing individual skills to enhance the corporate strategy on productivity (cf. McGahan, 2004).

Within the universal banking industry, productivity and profitability are enhanced through the management of the core activities and underlying assets. The main task of the top management is to lay down the long term goals, e.g. the growth strategy, on the basis of the information provided by the sales units and the production units. A related task is to coordinate the sales and the production activities to reach the consistency between the upstream and the downstream processes, and to ascertain the compliance with the corporate strategy. Effective coordination is of particular importance in the situation, where the framework conditions are expected to change, e.g. through the changes in the market demand and technology. Independent of the organizational design of the bank, the operative management allocates resources across the sales and the production units as well as the supporting activities. The main objective in the operational effectiveness of a bank is reducible to a dual problem of boosting revenues generated by the branch network and decreasing the unit cost of individual products and services[12]. The coordination of sales and production is facilitated by the transfer pricing practises, which determines the profit shares for each branch and production unit. A standard practise within the universal industry is to set the transfer price equal to the unit cost of the individual product and service. In the corporate accounting this implies that the production unit makes a zero profit whereas the sales margin (profit) is calculated for the benefit of the selling branch and the respective sales officer. The unit cost pricing is considered the best-practise solution, *inter alia*, as it avoids the

[12] More specifically, the objective is to increase the total margin $(p \cdot q) - (c \cdot q)$, where p is the unit price vector of the total offering of products and services, q is the quantity vector and c is the unit cost vector, respectively.

measurement costs (Barzel, 1982) and other transaction costs (Masten, 1982) associated with the 'fair' division of the profit between the sales and the production units. In particular, the unit cost pricing is a simple and effective device to align incentives for the enhancement of profits and productivity of the bank. In that case the productive performance of the sales units can be evaluated by the sales volume, the ability to charge high unit prices, and at the same time customer satisfaction. Similarly, the performance of the production units can be evaluated by the ability to develop effective and cost-efficient products and services that are compatible to the corporate strategy and the market demand[13].

Under progressive change *innovation* tends to be incremental and relatively small in scale. This owes to a low market push and the fact that commercially successful innovations - excluding the innovations that strengthen organizational capabilities and firm's information systems - create competitive advantages which tend to leak out to the dominant model over time (McGahan, 2004). Within the universal banking industry, the dominant model is manifested in the characteristics of the financial products and services and in the underlying processes. It thus evolves through the product and service innovations of the competing banks. Among the main channels of the innovation externalities are the clients[14], the suppliers of software, the information systems and equipment, as well as the key employees that switch from a bank to another. With respect to the competition in the product and the service innovations, some banks are characteristically 'leaders' and they invest substantially in the R&D activities, whereas other banks have adopted the 'follower' strategy and imitation. The leaders in a specific product and service category may hold a marginal but sustained advantage, whereas the followers may have low R&D expenditures but still retain competitiveness through a rapid imitation. The innovation externalities can be organizational as well, which can be demonstrated by the changes in the coordination of the sales activities. For instance, through its entry into the Finnish banking markets in the mid 1980s, Svenska Handelsbanken introduced a new 'branch concept' based on a markedly smaller average size of a branch and a leaner hierarchical structure compared to the dominant model at that time. The new branch concept with 10 to 15 sales officers proved to be competitive as it enabled a more customer-oriented service encounter, and at the same time, a higher cost-efficiency and productivity of an individual sales officer. Simple, transparent and flat hierarchy prohibits the emergence of 'unofficial' hierarchies and thus compels the employees to focus on their duties in sales

[13] Transfer pricing policy is complemented with financial incentive schemes and firm-specific coordination practises. They are based on hierarchical and market driven management systems.
[14] Big corporate clients are particularly important in this respect.

and customer service. This went unnoticed by the competitors, and to date, the 'small-size branch concept' has become the dominant model within the universal banking industry.

5 The buyers' power

Of the five forces by Porter (1980, 1985), an increase in the *bargaining power of the clients* tends to force prices down and raise quality and service-intensity of the business at the expense of industry profitability (Porter, 1980). In industries with progressive change, buyers tend to become more aware of their preferences over time, and often favour increasing convenience which increases their negotiation power (McGahan, 2004). However, the power gain may be more than offset by increases in buyer's transaction costs, which become elevated as firms within the industry become distinctive and buyers become dependent (op. cit.). In the Finnish universal banking industry the awareness of the customers on their preferences became apparent, as the deregulation of the financial markets, initiated in the mid 1980s, led to increasingly competitive and demand-driven financial markets. Among the legislative acts that contributed to a deeper market liberalization, was the removal of the stamp duty on the mortgages in 1998. This enabled competitive tenders and markets for the 'running mortgages'. Through the marked reduction in the switching costs and the loan margins, individual borrowers became increasingly alert in changing their 'house bank'. In the household segment, the mortgage is decisive in the establishment of the bank relationship by the customer.

On aggregate, the deregulation and the technological innovations has been conducive to enhanced buyer's power across all customer segments. In the corporate segment, where the financial needs of the customers are versatile, the most important criterion for the selection of the house bank is the contract on the cash management and the payment services. The cash management contract is usually put out for tender in every three or five years and it *locks-in* the client company and the winning bank for the respective period of time. While the banking relationship in that case is exposed to contractual hazards and opportunism (Williamson, 1985; Masten, 1982), the problems are mitigated by mutual learning (Grönroos and Ojasalo, 2004) and the opportunity to establish a new and better contract in the subsequent periods. During the cash management contract, the balance of power is most often on the bank's side, as the potential switching costs and other transaction costs in case of the cancellation, are mainly born by the client. It makes a lump sum investment in the cash management system. Therefore,

to delimit excessive rise of the supplier's power and the dependence, the global corporate clients have usually cash management contracts with several banks e.g. for specific geographic markets of the client. Accordingly, the buyer's power, which is manifested in low unit prices and the high degree if tailoring of the offerings, increase with the size of the customer and the customer's strategic importance to the bank. Cyclical fluctuations matter as well. The loan margins tend to increase in the economic downturns - increasing the seller's power – whereas in the upturns the margins diminish and banks compete for customers showing lowered risk ratings and enhanced negation power[15].

6 The suppliers' power

As with the buyers' negotiation power, the *supplier's power* within industries of progressive change is indeterminate and varies (McGahan, 2004). The suppliers tend to invest in specialized capabilities as they tailor their activities to create value for the customer industry. All else being equal, this may raise the supplier's power. At the same time however, the supplier's transaction costs tend to increase as they customize their activities to the industry and become more dependent on the dominant firms in the customer industry. Whether supplier power increase or decreases depends on the net effect of the changes in the supplier's capabilities and the transaction costs. Within the universal banking industry, the realization and the control of supplier's power is contingent on the corporate strategy of the bank and the characteristics of the supplied inputs. A prominent example is information and communication technology (ICT) and the related services, the supply of which of high importance for the 'smooth' operations of a bank. Of the leading universal banks Nordea for instance, has retained a substantial part of the ICT activities such as product development and support in-house to maintain the company-specific capabilities and the competitive advantage. The parts of systems management, maintenance, and product applications of lower strategic importance are outsourced to big independent providers (IBM, Tieto). For these companies, universal banking is one though an important customer industry. In that case the balance of power is distributed evenly in the user-provider partnerships. The competitive advantage of smaller banks such as Svenska Handelsbanken, Aktia, and the local savings banks and cooperatives, relies less on distinct ICT systems and capabilities, and they have outsourced most of the supporting activities to the external suppliers. To avoid extensive supplier dominance in the provision

[15]The loan contracts for corporate customers often involve built-in covenants on customer's liquidity and solidity which influence the interest rate. The covenants change the interest margin of the bank as the economic conditions change.

of tailored ICT solutions (cf. Williamson, 1981; 1985) the smaller banks have established a jointly owned ICT service provider, Samlink. The company represents an organizational arrangement, which economizes on contractual costs in the user-provider relationships.

The influence of a bank's corporate strategy on the seller's negotiation power can be illustrated in the *procurement* of the supplies and the supporting services used in the branch banking operations. In Svenska Handelsbanken and in many of the cooperative banks and savings banks as well, the procurement is a *decentralized* activity and performed independently by the local business units, often with the local suppliers. In an opposite case such as in Nordea, the respective procurement activity is *centralized* which implies that the buyer is the corporation itself. Accompanied by economies of scale and scope as well as high negotiation power with respect to the provider, a centralized procurement enables higher volumes of purchases from a single supplier and hence lower unit prices compared to the decentralized procurement model. A related notion by McGahan (2004) puts forward the power of individual employees as the supplier of important resources. Employees, who are often unskilled when they first time enter an industry, accumulate and learn skills which tie them to that industry. Within the universal banking industry, the technological change to a higher ICT-capital intensity of the banking processes, and the respective decrease in the labour-intensity, has diminished the negotiation power of the labour union substantially. At the same time the accumulation of knowledge, skills and business responsibility of highly educated employees has increased their power relative to the employing banks. Despite the enhanced knowledge-intensity of the sales activities and the product development and that banks compete increasingly with other industries for skilled labour force, the negotiation power of individual employees is still limited, however. This owes to the fact that the competitive edge of universal banking resides ultimately within the organizational capabilities and the managerial practises rather than within individuals' skills (cf. Løwendahl, 2005; Nelson and Winter, 1982).

7 The threat of substitutes

As noted by Porter (1980) identifying *substitutes* is a matter of searching for other products and service that can perform the same function as the specific product and service of the industry. "Sometimes doing so can be a subtle task, and one which leads the analyst into businesses seemingly far removed from the industry" (op. cit. p. 23). The same difficulty holds for the identification of close substitutes of

differentiated products and service models within the universal banking industry as well. For instance, Svenska Handelsbanken, a well-established traditional bank in the Swedish banking markets, posed a threat to the dominant business model of the Finnish banking industry in the 1980s. The threat became realized as the bank entered the Finnish markets in 1986. Such considerations conforms to the notion of McGahan (2004) that substitutes for buyers within industries of progressive change tend toward incorporating more features or greater functionality, although at a higher price than the industry's products and prices. Without a substantial impact on the prices of the financial products in Finland, Svenska Handelsbanken introduced a new service concept where the balance in productivity was shifted from efficiency more towards effectiveness. On balance, the products and services of the Finnish universal banking industry has not been subject to major external threats, or if they had, the industry has successfully incorporated the evolving threats. For instance, with the liberalization of the capital markets and foreign exchange policy in the 1990s, corporate investments shifted increasingly from loan-based funding to equity financing and profit-based financing, which threatened the traditional banking business particularly in the smaller banks. The leading universal banks responded by the development of the investment banking activities, which increased the 'universality' of the banking businesses. Another example is the technological threat posed by proliferation of internet banking and ATM (automated teller machine) in the 1980s, which reduced the need for human interface in the routine transactional services. Whereas the relationship (branch) banking and the internet banking are currently incorporated as two complementary channels by most universal banks in the Nordic countries, the slower pace in the adoption of the internet banking in many European countries follows partly from the perceived technological threat to the traditional ways of banking[16].

8 The threat of entry

The threat of entry into an industry depends on the effective barriers to entry, coupled with the reaction from existing competitors that the entrant can expect (Porter, 1980). With respect to industries of progressive change, new entrant may be attracted by the prospects of a stable return on investment in the industry, but the costs of entry may increase in step with its rewards (McGahan, 2004). In

[16] As noted by McGahan (2004) the ultimate effect of the threat of substitution depends on the relative rates of improvement of the other alternatives. This is manifested in the labour markets of the banking industry as young banking professionals are attracted by better compensations and prospects in more dynamic and fast-growing industries.

particular, the notion by McGahan that entry barriers accumulate as economies of *scale* (e.g. branch network) and *scope* (e.g. product lines) are built into the dominant model and as the complexity of the incumbents' activity systems raises the standard of efficient operations captures the essence of the entry barriers within the universal banking industry as well. In effect, the change in the threat of entry depends on how the potential entrants perceive the opportunity to catch up with the industry leaders in the operational effectiveness (McGahan, 2004)[17]. The stylized fact that there exist substantial barriers to 'new' entry within the universal banking industry is indicated by the robustness of the industry structure. With the entry by Svenska Handelsbanken in the mid 1980s and the small scale start-up, such as Tapiola Bank founded in 2004 by the insurance company Tapiola Group[18], the major market entries in Finland have been acquisitions, exemplified by the take-over of Sampo Bank by Danske Bank in 2007. Even in these cases the competitive positions of the market leaders have remained relatively intact. As with the economies of scale and scope in the production, a significant barrier to a large scale entry within the universal banking industry is the required differentiation in the products and services. Differentiation may assume substantial investments in marketing by the potential entrant to overcome existing customer loyalties (Porter, 1980). Differentiation in 'the financial product packages' is also a major source of switching costs within the universal banking industry. This implies that the competitor must bring major improvements in the cost or the performance of the customer to induce is to switch from the present supplier. In particular, the primary strategy among the leading banks is not dispose competitors of their most valuable customers but rather to strengthen the business relations with the existing customers through increased sales. Such a tactics raises the customer retention rates[19].

9 The industry rivalry

The most pervasive of the Porter's five forces is the *intensity of rivalry*, which through the other four forces, determines the competitiveness of a firm. In his original formulation Porter (1980) notes that the rivalry among the competitors take the a familiar form of jockeying for *position* – using tactics like price competition, advertising battles, product introductions, and increased customer service or

[17] It is important to stress that the threat may be effective regardless of the correctness of the perceptions of the incumbent firm.
[18] In 2009 the financial products and services of Tapiola Bank were directed mainly at households.
[19] Actually, it is not sufficient that rivals can match with the buyer 'surplus' provided by the current supplier. The rivals must also cover the buyer's switching costs to induce the eventual switch.

warranties. In most industries, competitive moves by one firm have noticeable effects on its competitors and thus may incite retaliation or efforts to counter the move. That is, competing firms are *mutually dependent*. McGahan (2004) posits that incumbents within a *progressively changing industry* attempt to manage rivalry by building increasing economies of scale and scope and by seeking to differentiate in geographic markets and product features. The best opportunities for building *scale* involve incremental changes in activity systems to incorporate insights through experience and learning, whereas the best opportunities for building *scope* involve incremental changes to coordinate activities more effectively (ibid.). Incumbents work toward isolating themselves from the competition by building distinctive positions (McGahan, 2004). In the presence of slow growth of the industry, competition turns into market share game for firms seeking for expansion (Porter, 1980). Characteristic of progressive change is that markets shares tend to change hands only incrementally. On aggregate, the above characterization of rivalry involves two central arguments on the nature of competition in the progressive change. First, in seeking and defending their market positions, competing firms employ the strategies of cost-leadership and differentiation, which in the case of service industries, implies balancing between effectiveness and scale-efficiency. Second, the fact that competitors make their moves interdependently indicates that markets are relatively concentrated and competition is characteristically *oligopolistic*.

These insights characterize the essence of the rivalry in the universal banking industry as well. Through the interlinked activities, the implementation of the productive strategies and the employment of the firm-specific resources, banks can gain and sustain competitive advantage over the rivals. In case of the EU's banking sector Goddard et al. (2001) notes that rivalry will lead to an oligopolistic market structure where few banks dominate. Following the growth of the GDP, the average annual growth rate of the production in the universal banking industry indicates high maturity of the industry and the financial markets. Price competition is particularly fierce in the mortgage markets, where the 'unbundled' loans are usually unprofitable for the lending banks. Another example of fierce price competition is the business area called corporate merchant banking (CMB). Nordea dominates the customer segment of the biggest listed companies in Finland, whereas Sampo Bank and OP-Pohjola Group are viable challengers within the smaller customer segments. The fierce price competition for the market shares tends to depress the overall profitability of corporate merchant banking. Price competition in the universal banking industry is accompanied by the product and service innovations,

where some banks such as Nordea, pursues the leader strategy, and some banks exemplified by Svenska Handelsbanken has adopted the follower's strategy.

Related to price competition and the product development, a distinct feature of the rivalry in universal banking is 'bundling' or 'packaging' the financial products and services in the banks' offerings to the customers. In general, universal banks are discouraged to offer a single product - particularly loans - for an individual customer, as they are usually of low profitability to the banks. On the other hand, the offerings of bundled (composite) goods are associated with substantial economies of scale and scope[20] and profitable business opportunities for the bank. Many of the cost advantages of bundling are informational, i.e. sharing the costs and increasing the revenues in processing the customer data, as well as transactional based on 'one stop shopping'. Bundling also enables the price discrimination of individual products and services within specific customer segments. That is, given the subjective price limits (ceilings) of the customer, the bank may allow price cuts in some products and services if the price reductions can be cross-subsidized with higher prices of the other products and services in the offered bundle[21]. In general, discriminatory pricing and bundling avoids contractual problems in the markets (Williamson, 1981; 1985), when assets are specific in use and the transacted commodity or service cannot be stored, or when storing entails substantial costs[22]. This is the case with most of the financial products and services. In bundling universal banks are also tempted to shade prices to insure the continuity and the growth of sales (Porter, 1980). This involves a potential distortion of the markets, however. Smaller banks with a limited opportunities to bundle, maintain that bundling by the bigger banks prohibits transparency in pricing and thus limits competition and market entry.

In general, bundling is a standard practise to implement the firms' strategy and the productive regime within the universal banking industry. In the strategies based on cost- and scale-efficiency, bundling reduces the unit costs by promoting economies of scale and learning in the production and distribution. Porter (1985) notes that, providing the same package to all buyer guarantees an equivalent volume of all items in the bundle, perhaps lowering the costs. The provision of packaged services may also increase the productivity of sales force, as there is a reduced need to inform the buyer about what parts

[20] Consequently, it is common that a new household customer finds it difficult to get an acceptable loan offer from a bank, when he or she does not have a savings account at that bank as well.
[21] According to Porter (1985) bundling allows a firm to increase total profits, when different buyers have different price elasticities (cf. Kreps, 1990) for the individual parts of the bundle.
[22] In this case profitability of the firm is highly dependent on the smooth running of the production processes.

of the bundle to select. At the other end of spectrum, bundling van be used to differentiate vis-à-vis competitors. The banks may sell only parts of the bundle or combine the parts differently. In particular, bundling enables the provision of tailored solutions which meet the specific needs of customers. Porter (1985) notes that the provision of 'modularized packages of services' by a supplier becomes a necessity when the interface among complementary products is not standardized. In contrast to efficiency-based bundling, where the composition of the offering is determined prior to the sales process, the bundling which pursues high effectiveness assumes high discretion by the sales officer and customer participation in the design of the offering.

Appendix 3

The six managerial narratives on banking productivity

1 Introduction

The purpose of Appendix 3 is to highlight the empirical data of service productivity provided in the managerial narratives. They offer complementary evidence on the differences between the productive regimes of Nordea and Svenska Handelsbanken. The interviewed managers were requested to provide their subjective views and interpretations on service productivity within the context of the business unit (organization) they represent. The underlying questions are presented by the list of topics in the company interviews (see Appendix 1, Section 3, Service productivity and its measurement). More specifically, the narratives aim to find out the extent to which a) productivity is a *plausible concept* in the operative business management, b) how productivity is *defined and measured* as well as c) how productivity can be *improved* to enhance the competitiveness of the bank. The company interviews were used as a multiple case study to highlight the intra-bank similarities and inter-bank differences in the managerial views of service productivity. The guiding principle in reporting the results is to let the narratives *speak for themselves* in a genuine, comprehensive and interpretable form[1]. For that purpose the key words and sentences are indicated with the underlines. Moreover, the original quotations of each *six cases* are augmented with supplementary notions (in square brackets) by the interviewer, when a contextual clarification and interpretation is required. The narratives presented below have been translated into English from Finnish, which is the original language.

2 Svenska Handelsbanken

Manager A[2]: "Service productivity, in my way of thinking, means that we sell service solutions, which help customers in their affairs, and make them stay as our customers. In our case it means that we get revenues in a cost-efficient way and we calculate it continuously for every customer…we watch closely

[1] The methodological choice follows from the subjective assumption that given the complexity of the issue, a good story will outperform a good construct (Eisenhardt, 1989).
[2] The manager A is a head of a branch located in Espoo Finland.

and continuously the loan margins and the prices of the services, which generate the overall profitability out of the customer. Then we can meet the customer halfway [in the prices of the financial products] if we regard the overall profitability of the customer relationship good enough. It is an optimization of the [product-service] package in the long-run, such that both [the bank and the customer] are satisfied. It is costly to loose a customer…we have acquired quite a many new customers in regard of our short presence in the Finnish market, and we want to keep the acquired customers as it is costly to get a new customer as a substitute for the lost one. Central to [our] service concept is that we keep the customer satisfied, so that they inform other [potential] customers who come to ask our services. Our way of thinking is based on long-standing relationships with our employees and with our clients…our objective is to recruit people for the rest of their lives. We produce solutions which are profitable to us and to our clients, and which are produced and delivered in a cost-efficient way. Customer satisfaction is the cornerstone of our business activity. We make customer satisfaction studies [on our clientele], and we are also involved in a [industry-wide] customer satisfaction survey participated by all the Finnish banks…we have held the peak position in customer satisfaction for years…Nowadays everybody is concerned about their productivity. This holds for us and for our customers as well. Part of the service solution is that we run this branch efficiently, that we employ the experts [in the product units] efficiently. They help us in that work, and we guide our customers to the experts, when we see that the customer can benefit from that".

Manager B[3]: "Productivity is revenues relative to costs [used for the evaluation of a branch], or the return on equity [used for the evaluation of a district bank and the corporation]. This is the way we think about it, because our thinking on these issues deviates from a [traditional] product-oriented approach. Our way of thinking is customer-specific, customer-oriented. A satisfied customer is... [the main driver]. It [the logic] goes the way like this that if you have satisfied and motivated employees [as well as authorized to make decisions], it radiates out to the customers…so it starts from the motivated group of people working together, which creates the brand[4], the feeling, that now I am [the customer] getting good [customer] service. This is a good place [bank], where I want to be as a customer. Then you will tell this to the neighbours and friends…and the brand is created, without any action of

[3] The manager B works as a head of a branch in the Helsinki having big corporate customers.
[4] According to the manager B "the creation of brand is based on the experience that people get as they enter the bank, and the way of how the banking affairs are dealt with in practice. Brand cannot be created through a centralized marketing, which is product-oriented approach. In a service industry brand is created through the [experienced customer] service".

marketing or advertising…then the customers will concentrate their [banking] affairs here as they get a personal customer advisor who takes care of all my [customer's] affairs and the threshold to contact here is [thus] low. Things are being taken care of, and in a convenient manner. And automatically, when people make the initiative to concentrate their affairs [purchases] by themselves, based on their own will, we will have more business out of a smaller number of customers…thus small clusters will be created…and this is the main principle of our activity on the corporate side as well".

"…at the moment the cost-income ratio is [the principal quantitative measure for the monitor of a branch's performance]…and both [components of the ratio] can be influenced, revenues can be increased and costs can be decreased [locally]. [This way] it enables the adaptation [by the branch] to the region such that the banking business is profitable…we also monitor customer satisfaction, which is outstanding, and employee satisfaction, and also profitability [cost-income ratio], these three measures are the main things, customer satisfaction, employee satisfaction[5] and profitability [cost-income ratio]. From the macro-perspective the financial products of different banks are close substitutes, which is a major difference in comparison e.g. to the car industry. In effect, any bank can't have better products than the others [in the long run]. The products are easy to imitate, and they will be imitated rapidly. And once the competing products are substitutes and their prices are given, the bank with the lowest costs is the last to exit from the market…this [race] will be won with labour costs and to some extent ICT costs. How then to keep the labour costs at a lower level than competitors? The answer is decentralization, which is perfectly consistent with the [logic of] better customer service [discussed above]. Through decentralization we need a smaller size of personnel than the competitors, as we have no intermediate level of administration and management. Hence, with lower labour costs we are invincible in the cost-based strategy, and on the top of that there is the better customer service based on decentralized authority and responsibilities with close proximity to the customers".

Manager C[6]: "It [banking productivity] is a multidimensional and difficult issue, that if you approach it through service perspective...As we noted last time [the first session], we put a great emphasis on service, and the satisfied customers is the cornerstone of our business activity. Productivity can be maintained partly because satisfied customers stay as customers longer, they buy more services and

[5] The manager B notes that based on the external surveys Svenska Handelsbanken outperforms the main competitors with respect to the employee satisfaction as well.
[6] The manager C works as a general business manager in the Finnish region bank.

productivity thus rises. In other words, in the long run the same [amount of] labour input generates more [revenues], because new customers are less needed to substitute for the lost customers, which are small in numbers. Productivity implies that output or profits will be generated as much as possible with the given inputs, such that if the quantity of inputs is kept constant, output or profits can be increased gradually. In our case [the Finnish region bank] it takes place hand in hand with the increase in inputs…I am speaking about Finland now, where the banking business is still young, we set up new branches and hire new people. Inputs are increased continuously and of course the output and revenues increase, but this is a non-linear process. When inputs are increased, productivity is deteriorated at that stage with respect to absolute and relative numbers [C/I and ROE]. This is a natural consequence of investments. And then the profit starts to come in the longer run".

"So, this is approximately how the process goes, but speaking about productivity and efficiency, to some extent they go hand in hand, while to some extent they do not...for instance, when a comparison is made to the business model of big competitors such as Nordea, which in a general view is run [managed] efficiently. Nordea has efficient processes and the 'mills are grinding out' well, which is as such efficient. But it is not a synonym to productivity although in the light of the main indicators, Nordea shows a high productivity for the past few years as well. Productivity involves then these other aspects as well, doing the right things. The customer will be sold the right services, which is one of our principles. The customer will be sold only the services he or she needs and nothing else by pressing on. And here come the differences, where we depart from the pure efficiency thinking towards the productivity thinking, that we [only] do the necessary and the right things. Of course, the objective is to do the things as well as possible and in a way to match with the customer needs…as a local objective [for the region bank Finland], so to say... we have grown, since we are quite a new player in Finland and the objective is to grow, to extend the branch network and the customer base. Within a branch, a stage of growth will of course be reached, where a higher number of customers can no more be served [prudently] and their affairs cannot be [prudently] dealt with. Then we hire one or two people more, which means that from the efficiency point of view, some idling [excess capacity] may exist in the short run. Then it [idling] gradually vanishes…so it goes in such a staggered way [the labour input cannot be increased incrementally][7].

[7] As noted by the manager C the same mechanisms are effective in the situation of setting up a greenfield branch.

3 Nordea Finland

Manager A[8]: "If we are speaking about corporate customers [small and medium size enterprises] performance [productivity] is monitored by the development of the customer-specific sales margin in the case of an individual account manager[9]. We have an on-line monitoring system, which tells us how much [profit] the customer-relationship has generated [is generating] to the bank this year. And the account managers make an annual sales plan, a *budget*, which indicates the planned size [value] of the customer-specific margin, and the bundle of products and services to be delivered. Ultimately, the performance of an individual account manager will be evaluated by the size of the margin generated from the clientele which the account manager is responsible for, and whether he or she has achieved or exceeded the budgeted targets. The [effort of] sales managers are induced by an incentive scheme which gives an extra bonus based on the sales performance. [In other words, there is an explicit objective, and the performance is evaluated with respect to the attainment of the objectives]. On aggregate, the sales budgeting is based on top-to-down approach, where the goals are set at the highest level of authority…that is, if the corporate executives decide that the sales revenues will be raised by ten per cent [for the next fiscal period] then at the other [the lowest] end of the [hierarchical] *chain* every account manager must think what this ten percent implies for the implementation of the sales budget, and the actions taken at the customer interface".

"In effect, the most important [indicator] for us is the difference of growth between the revenues and the costs [the spread], that is, costs are allowed to increase if revenues increase for some amount. The costs are also increasing, and [while the operating costs are to a high extent fixed], you can always do the things more efficiently and this way influence the costs…activities can be centralized and in this way pursue for cost efficiency. Increase in operational efficiency [which is the proclaimed strategy of Nordea Group] means a higher productivity, which is typical in the case where the loan application documents are not processed separately by each branch, but the processing is executed centrally in one location [site]. And this is substantially more cost-efficient [in comparison to a decentralized processing of the documents]. And with the higher [organizational division of labour] cost-efficiency the work is done by people who do nothing else, they are capable of doing it, and they do it with less

[8] The manager A is a district manager in Nordic banking (the sales division) in the metropolitan region in Helsinki.
[9] An account manager is a sales officer with customer responsibility.

mistakes. Mistakes and their correction are always costly. So, the cost-efficiency rises out of all this, and it can be influenced e.g. without lying off people".

"[The provision of the value-added services[10] to corporate customers] means that we are able to sell our customers the products and solutions, which generate value-added to the customer. More specifically, the account manager has succeeded well if he or she is able to create something new between our customer and the customer of our customer, which is beneficial our customer…and this assumes partnership. Such [innovations] solutions are most conducive to a higher score in customer satisfaction. We measure annually the customer satisfaction for the account managers and the bank based on a number of questions asked from the customers. The next level of operational efficiency[11] and *Future Branch* is a [productivity project] related to the present policy to create one bank out of the four [country-based] banks…that functioning of the branches in all Nordic countries is based on the common [service concept] model. And the objective of Future Branch is to allocate more time [of the effective working hours] to the customer [sales and customer service]. Whereas an account manager uses approximately 30 % of the effective working time for the customers, and 70 % is used for something else, our objective is to raise the customers' share to 50 % within the next two years. For instance, activities [which are unrelated to customer service] are centralized [and out-sourced internally] to be produced more efficiently, and then there is more time for the customer such that the number of customer meetings can be increased and the volume of business increases. This leads to increased customer satisfaction as well".

Manager B[12]: "[In general] cost-income ratio is important indicator in retail banking, but in our business [of corporate merchant banking] the measurement is in a different scale…because these two business areas cannot be compared directly. In effect, ROE is the most important measure for us, as the revenues per an account manager is much larger here than in the retail banking, and the structure [of the revenues] is thus different…the concept of service productivity is not used in our business activity. We monitor the net profit of this business activity, which is a function of the costs of the production [and delivery] of the services and the cost of capital allocated to it. These costs are managed relative to

[10] As with the higher operational efficiency, the provision *value-added services to corporate customers*, is put forward in the communication of investors' relations.
[11] This is also an explicit statement in the communication of investors' relations.
[12] The manager B is the head of the corporate banking unit in Helsinki specialized in the sales to the biggest, most often listed companies.

the flow of revenues we receive [from the customer]. In that case productivity results from the productivity of the [financial] capital[13] and the productivity of this operative activity, i.e. efficiency. And we have made a tremendous work to improve both, and to improve the operative activity [productivity] we have changed over to a *process organization* …we started to redevelop [reorganize] this activity [the corporate merchant banking unit] six years ago, and then we described all the processes we had [operated internally]. To illustrate, corporate banking unit was like a *bank within a bank*. We had [internalized] all the activities [we needed], and at the beginning we operated around ten different processes. Then we started to assess whether these processes actually belong to our activities, whether they are part of our core business or not. And then, over the years we gradually cut off processes [externalized the processes], and ultimately we decided to transform our unit into an [sales] organization that is focused on customer management and responsible for the maintenance of customer relationships. Now we buy the services from the centralized product and service units [inclusive of the supporting activities] in the [Nordea] corporation".

"This [new business model] has worked excellently, and we have been able to squeeze a remarkably higher efficiency out of this [organization]. I am very pleased…and when I started six years ago…the productivity has really increased substantially, we have cut off personnel some 15-20 % in this change and moreover, the operative risk management has improved substantially. [This owes to the fact that] they [the employees at the product and service units] are all professionals in their jobs. They do it full time. The efficiency arises from [the division of labour]…let's take the phone service as a simple example. Previously we operated it here by ourselves…you centralize the service to an expert who does it full time, they have their processes and systems of their own and the service is associated with a specific expertise, and the service improved, and the efficiency was enhanced…[the service units are profit centres] and we pay for that service of course. [This implies an increase in the replicability and standardization] but the point is that we are still able to *tailor* in this business model…yes, [it is like mass-tailoring]. We were suspicious of not being able to tailor in this new setting. It is not *ad hoc* tailoring, but controlled tailoring, where things are built up from specific modules without doing anything separately to the customer. And the tailoring is made by the experts [in the product and service units], and not by the sales officers. It makes a huge difference, since the expert knows what to do and how to tailor…rivalry within the corporate banking industry has become [more intense] and led

[13] In financial terms this indicator equals to the return on the economic capital.

to cuts down of the margins, but we have been able to respond with this business concept, and I venture to say that we are quite efficient with respect to any corporate merchant bank in the world…I don't believe that we are able to squeeze much more efficiency out of this concept, but on aggregate our most important function is to employ these experts [in the product and service units] as efficiently as possible to generate more revenues from the [*existing*] customers".

Manager C[14]: "In a way productivity concept is ambiguous within the banking industry…at least within the service sector, compared to the manufacturing sector…In the light of big numbers the number of private customers [households] is substantially bigger, where the process-efficiency and productivity is more important than in the corporate clients which are fewer in numbers…I would like to outline the business model of [Nordea corporation] to you, since it is essential to understand when we are talking about Nordea and productivity, in particular…the way we have organized the [banking] activity, is linked to [the issue of] productivity. Assume that the customer is located here [in the chart], the customer relationship is managed by our customer [sales] units, which in practise equals to [the division called] Nordic banking…and Nordic banking in Finland is divided into three geographic profit centers, and I am responsible for one of them. Then we have four product-based value chains, which are responsible for the basic banking products [and services]. So, our product units are organized under the four value chains. [Accordingly, those who are responsible for the value chains are in charge of the innovations, profitability, efficiency, productivity and competitiveness of the product groups]…but here we, who discuss with the customer, play a central role as well. We are faced by the demands and wishes of the customer, so that this is largely a co-operation with the [sales and product] units. But when we come to the question of how we see productivity. I would claim that its importance is constantly growing. We are not necessarily using the same terminology than economics on productivity, but we discuss much the same issue".

"Then if we go on and look into how we develop the [sales] activity and measure it in Nordic banking in the case of corporate clients [in particular], there are a number of indicators [called key performance indicators, KPIs]. There are simply the [volume of] revenues and the growth of the revenues from each customer, and the equivalent total over all customers. So, we calculate [monitor], in the case of an individual account manager, how the flow of revenues generated from the [corporate] customers she or

[14] At the time of the interview the manager C worked as a chief executive for a region bank in Central Finland.

he is responsible for, has grown and *should* grow [with respect to the budgeted sales]…it is not only the flow of revenues but also profitability, [that is] costs are allocated to each customer relationship to get the statement of profit for each customer. Then we make the equivalent calculations for the branches and then for the larger units within the hierarchy of the profit centers. The next organizational level is a district [district bank], then there is a region bank, which I represent. Then we calculate in various segments [e.g. based on company size] and of course at the level of Nordic banking…Moreover we monitor customer satisfaction [as well as employee satisfaction]…and the focused product groups which are monitored in each customer segments. The focus may change over time…so, that we set specific objectives for the focused products, i.e. how much these products will be sold to your clientele in the next coming year…Then we set activity objectives such as the number of customer [contacts] meetings, i.e. how often the account manager is in contact with the customers and so on".

"[Now as I am looking at the chart of the business model, it shows a close resemblance to the productivity definition used in the service management literature. Namely, there exits operational efficiency, which works at this end (the product units), and at this end (sales units) we have effectiveness, with which value-added is provided with the customer, and what he or she needs. In other words this activity is not scale-oriented, as it is in the product units, and in the middle (processing) the objective is to combine the two dimensions[15]]...we are measuring [monitoring] productivity at the customer end quite a lot, so if we talk about productivity and not profitability, it is *revenues per employee* in the sales units whereas in the service units it is the number of *transactions*[16] *per employee* or *costs per employee*...with respect to cost-income ratio, we are still using it, but it has become less important…since earlier, with the basic strategy of Nordea when the four banks were merged, they started to search for the synergies, which were largely on the cost-side. And at the strategic core we had cost-efficiency and the search for cost-savings, which laid the basis for an improved profitability between the years of 2000 and 2005. So, at the beginning the cost-income ratio was highly relevant. In 2005 we drew a conclusion by ourselves that we have done it well and the bank is now efficient [enough]. But the cost-income ratio cannot be improved anymore through cost-efficiency and cost reduction only. So, the focus has shifted to the income component, and two years

[15] The conclusion in the square brackets is made by the *interviewer*, which is accepted by the manager C with the notion: "Yes, this is quite correct. You were able to put it in a right way".
[16] A transaction in this context means a one unit of product or service produced and delivered to a customer.

ago the strategy was changed to the growth of revenues[17]. Now, our main objective is organic growth…The cost-income ratio is a commonly accepted measure of efficiency, it is easy to compare, and we constantly benchmark ourselves to our competitors with respect to C/I. [However], C/I is not among our proclaimed or external objectives".

"With regard to the ways we are trying to foster these [objectives], there comes, in my opinion, clearly the productivity perspective. We have worked a lot to develop and analyze the ways how the account managers work, starting with examination of how much time of their total working hours they allocate to the maintenance of the customer relationship, which is in quite a bad shape by us. Currently, our account managers use between 20 % and 25 % of their working time for the customers, and our objective is to raise the percentage close to 50 %. We have of course analyzed out [sales] activity, that what are all the other activities, which the time of the account manager is used for…and tried to change the course of the action to release the account manager from the administrative and other duties and to allocate more time to the customer[18]…and this way to enhance efficiency, and productivity. As another dimension we have also tried to change the job descriptions of the administrative and supportive staff to involve higher responsibility on customers and sales…i.e. to increase the number of account managers and the effective time for the customer's [sales activity]. So, this is approximately how we manage and monitor the work of the account manager relative to the customer…as we try to improve the productivity [of the sales activity]…the [value of] revenues per account manager, and squeeze more efficiency out of the sales activity…another thing not discussed so far is that we try to improve the *quality* of the sales activity. [This means that] the time the account manager allocates to a customer should be more beneficial to the bank, and for that purpose we develop [pre-designed, modularized service packages] total offerings to better match with the needs of specific customer segments and industries. Here the productivity is approached from the perspective of a customer segment, which is associated with the sales [team-based] activity models designed for different customer size classes".

[17] This means that the cost-income ratio, while still monitored, should decrease through the growth of annual income.
[18] This is the underlying logic of the *Future Branch* project.

The present thesis contributes to the development of the synthesized economic framework for the analysis of the productivity of a service firm. The framework is called the value creation approach (VCA). Building on an entrepreneurial view, VCA assumes that the underlying objective of the firm's management is to enhance the long term profitability and the value of the firm, where balancing between effectiveness and scale-efficiency in service production and delivery is the key strategic choice. The analysis of productivity in VCA builds on the interdependence between technology, strategy and organization. Whereas organizational design reflects the productive strategy of the firm, the strategy itself highlights the intangible service technology of the firm and the characteristics of service productivity pursued by the firm's management. The theoretical arguments of VCA are illustrated empirically via a case study of the Finnish universal banking industry.

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