# Innovation and Development Activities in Professional Service Firms

A Role Structure Perspective

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Abstract

This study explores innovation and development activities in professional service firms (PSFs) from the perspective of role structures. Whereas innovation activities in some firms are organised as a separate function, in PSFs these activities are often dispersed throughout the organisation. Professional employees are recognised as key individuals who may carry out these activities more or less autonomously alongside their normal service work. Knowledge of how such a system works could offer new insights into the so-called employee-driven innovation, which is currently creating interest in many organisational settings.

This study uses the theories of social structure and roles to address this issue. Innovation and development activities are approached as social systems that consist of interrelated behaviours of organisational members. The role structures in these systems consist of interrelated role expectations concerning these behaviours. The study describes and explains the nature of the role structures, and explores their coherence and flexibility in different organisational contexts. The study is a qualitative multiple-case study that is based on critical realism. The primary data consists of 54 interviews in five PSFs.

The study shows that although autonomy and informality characterised the studied activities, similar structures were identified among the case firms. A multitude of innovation and development systems were identified in each firm, with different goals, participants, and role structures. Five role structure types were identified and termed as centralised, coordinated, empowered, collective, and dispersed structures. The structures were fairly flexible, as individuals were often able to shape their own roles and role structures. Many innovation and development systems acted autonomously within units and teams, due to locality of novelties and context-specificity of the required skills. The findings suggest that the participants and the role structure types depend on how the abilities to explore and evaluate a novelty and to mobilise resources for its implementation were dispersed in the organisation.

The study contributes to current innovation studies by showing the diversity of role structures within a firm, the co-existence of which within a single organisation has not previously been explored in detail. The findings show that organisational members are involved in innovation and development activities in a variety of ways, and that a single individual may simultaneously have different roles in several activities. Therefore, in order to understand employee-driven innovations, greater attention should be paid to differences in novelty types and organisational sub-contexts.

Tiivistelmä

Tässä tutkimuksessa tarkastellaan innovaatio- ja kehittämistoimintaan liittyviä roolirakenteita asiantuntijapalveluyrityksissä. Innovaatio- ja kehittämistoiminnan on usein ajateltu keskittyvän tietyille toimijoille, kuten johdolle ja tuotekehitysyksikköön. Asiantuntijapalveluyrityksissä toiminta on kuitenkin hajautunutta ja harvoin muodollisesti organisoitua: työntekijät ja tiimit synnyttävät monia uudistuksia itsenäisesti normaalin asiakastyön ohella. Tieto innovaatio- ja kehittämistoiminnan luonteesta näissä yrityksissä voi edistää merkittävästi etenkin työntekijälähtöisen innovaatiotoiminnan tutkimusta.

Tässä tutkimuksessa sovelletaan sosiaalisen rakenteen näkökulmaa ja rooliteorioita aiheen tutkimiseen. Innovaatio- ja kehittämistoimintaa tarkastellaan sosiaalisina systeemeinä, joilla on tietty, yksilöiden toimintaan kohdistuvista odotuksista muodostuva roolirakenne. Tutkimuksessa kuvataan näitä roolirakenteita, tarkastellaan niiden yhtenäisyyttä ja joustavuutta, ja arvioidaan niitä selittäviä tekijöitä. Tutkimus toteutettiin laadullisena monitapaustutkimuksena, jonka aineisto koostuu viidessä asiantuntijaorganisaatiossa tehdyistä haastatteluista (yhteensä 54) ja tukimateriaalista.

Tutkituissa yrityksistä havaittiin samankaltaisia roolirakenteita, vaikka innovaatio- ja kehittämistoiminta oli luonteeltaan epämuodollista ja autonomista. Kussakin yrityksessä tunnistettiin useita innovaatio- ja kehittämistoiminnan systeemeitä, joiden tavoitteet, osallistujat ja roolirakenteet erosivat toisistaan. Tutkimuksessa tunnistettiin viidenlaisia roolirakenteita, jotka nimettiin termeillä keskitetty, koordinoitu, valtautettu, kollektiivinen ja hajautunut rakenne. Rakenteet olivat tyypillisesti joustavia, ja yksilöillä oli vaikutusmahdollisuuksia sekä omaan rooliinsa että joissain tapauksissa roolirakenteeseen laajemmin. Monet systeemit toimivat itsenäisesti yksiköiden ja tiimien sisällä johtuen uudistusten ja niihin tarvittavan osaamisen paikallisuudesta. Osallistujia ja roolirakenteita selittäviksi tekijöiksi tunnistettiin se, miten kyseiseen uudistukseen liittyvät kyvykkyydet etsiä mahdollisuuksia, arvioida ideoita ja mobilisoida resursseja olivat hajautuneet organisaatiossa.

Vaikka aiemmissa tutkimuksissa on tunnistettu vastaavia rakenteita, niiden samanaikaista ilmenemistä yksittäisen organisaation sisällä ei ole tarkasteltu. Tulokset osoittavat, että yksittäinenkin työntekijä voi toimia monessa roolissa erityyppisissä innovaatio- ja kehittämisaktiviteeteissa. Siksi työntekijälähtöistä innovaatiotoimintaa tarkasteltaessa on huomioitava paikallinen konteksti: työntekijälähtöisyys voi tapahtua monessa muodossa riippuen uudistuksen tyypistä ja yksiköiden ja tiimien luonteesta.

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This process has taken more than seven years, including many intensive work periods but also almost entire years when I did not even open the document. Still I do not feel as though the work is ready, as some dimensions of the phenomenon remain a mystery to me. One of my interviewees said that developing a professional service is a cyclical and never-ending process. I learnt that writing a doctoral dissertation is somewhat similar, in that every time you have a discussion with someone, you learn something new that may prove to be insightful in the process. I have learnt from many people during this process, not only about the research topic but also about how to cope with tough work periods. It is now time for me to let go of the product of this learning process and see what insights the future will bring. I want to thank all the people I have encountered during this process.

First of all, I would like to take this opportunity to thank my supervisor, Professor Matti Vartiainen, for pushing me forward and showing me the route through what can be a confusing process. I have found it invaluable to have someone who poses challenging questions and has been open to honest discussions. I am also greatly indebted to my former boss, Research Professor Marja Toivonen, for many reasons. Not only has she been valuable support but she is also a living example of real passion for service innovations. Most significantly, she has shown me how important it is to laugh with colleagues once in a while.

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1. Introduction

Innovation and development activities in service organisations have attracted increasing interest recently. During the last decades, the innovativeness of service firms has been acknowledged, as innovation studies have broadened the focus from technological innovations to a variety of innovations, including service and social innovations. Simultaneously, researchers and practitioners have both started to emphasise the need to open up innovation activities and to engage users and employees in these activities (Jensen, Johnson, Lorenz, & Lundvall, 2007). Service innovation studies have stressed these features from the beginning, as many innovations are seen to take place in the customer interface (Sundbo, 1997; Gadrey & Gallouj, 1998). However, not all service firms are alike; although the body of knowledge is growing rapidly, there is still a need for context-specific empirical studies to understand differences between service firms.

This study focuses on innovation and development activities in professional service firms (PSFs) that provide business services. These firms often emphasise the professional skills and autonomy of individual employees, since the employees typically develop complex solutions for customer-specific situations. The dynamic nature of knowledge creation in customer interaction leads to a situation in which the knowledge base may evolve constantly (Fosstenløkken, Løwendahl, & Revang, 2003), creating opportunities for new and improved services. These characteristics make PSFs an interesting context for the studies of innovation and development activities.

A number of traditional innovation management models have suggested that although cross-organisational collaboration is important, especially radical innovations take place separately from normal work processes because R&D staff and other specialists are needed (see, e.g., Tidd, Bessant, & Pavitt, 2001). However, empirical studies have shown that innovation and development activities in PSFs are often dispersed throughout the organisation, and there might not be any separate function, such as an R&D department, to coordinate these activities (Heusinkveld & Benders, 2003; Miles et al., 1995; Sundbo, 1996). Strategy and customers have been identified as key drivers for innovation, rather

than technological development (Sundbo, 2001), and the professional employees who are able to identify customer needs and combine this with professional expertise have been recognised as the key players in innovation activities (Gadrey & Gallouj, 1998; Kärreman, Sveningsson, & Alvesson, 2003; Sundbo & Gallouj, 2000). The intangibility of services and the autonomy of employees mean that innovations can be born in the customer interface as a consequence of customer-specific novel solutions (Gallouj & Weinstein, 1997). Therefore, professional employees may simultaneously engage themselves in the normal service activities and in renewing those activities. However, it is not yet fully known how the innovation and development activities become organised in such a challenging situation; therefore, this study focuses on the topic.

Professional service firms provide an interesting research context, also due to the changes they have faced. Although PSFs are characterised by informality, self-organising, and collegial control (see Mills, Hall, Leidecker, & Margulies, 1983, as an example), empirical studies suggest that many PSFs have increased managerial control and formalised their activities due to pressures regarding growth, client-orientation, competitiveness and efficiency (Cooper, Hinings, Greenwood, & Brown, 1996; Hinings, 2005). Formalisation may also lead to increased strategic control of innovation and development activities (Sundbo, 1997). Although it may be difficult to coordinate the innovation and development activities of highly autonomous employees, it should be noted that increased control may have an effect on the motivation and abilities of the employees to be involved in these activities. It has been said that managing professionals is like herding wild cats; professionals may easily develop ideas that go beyond current strategy, and if these ideas are not accepted, the professionals may decide to leave the firm and establish a competing firm (Løwendahl, 2001).

Besides being an interesting research context in their own right, PSFs may also provide valuable lessons to other organisations. There is growing interest in understanding so-called employee-driven innovation patterns (Høyrup, 2010; Kesting & Ulhøi, 2010). Since innovation activities in PSFs are carried out by the professional workforce, these organisations can be seen as pioneers in employee-driven innovations. Knowledge of how different organisational members participate in innovation and development activities makes it possible to benchmark PSFs into other contexts that are less familiar with employee-driven innovation patterns.

1.1   Key concepts and focus of the thesis

This study approaches innovation and development activities in PSFs from the perspective of role structures. The initial motivation was to understand how different organisational members of PSFs are able, or expected, to improve their

own work or the organisation as a whole. It became evident early on in the research process that qualitative innovation studies at the organisational level are rare. In particular, there seemed to be a lack of organisation-wide approaches that would address patterned but informal innovation and development activities that are likely to be found in PSFs. A multilevel framework was created in the study, drawing on the theories of social structure, social systems and roles. These theories were widely discussed during the 1960s and 1980s, whereas their current applications are less frequent. Despite the somewhat old-fashioned flavour of these theories, they were considered to be the most useful for exploring this topic.

The topic is approached as a multi-level phenomenon for which insights from the individual level are used to create a collective-level understanding. Several important concepts were clarified and linked to each other to form a coherent theoretical framework. *Organisational innovativeness* is considered as the underlying potential for action and defined as the organisational ability and willingness to create *beneficial novelties* in the organisational context. Beneficial novelties are defined as new and useful ideas that are put into practice. Rather than being limited to specific types of novelties, the study included novelties that have an impact on services, resources and practices, and on the organisational structure in order to understand innovativeness holistically. Innovativeness is seen as being realised through activities carried out by organisational members and other stakeholders; these activities are labelled here as *innovation and development activities*. Although innovation and development activities are often carried out with users, partners and other societal actors, this study focuses on the role structures within an organisation.

The study applied social system perspective in order to grasp the phenomenon at both the individual and collective levels. *Social system* is defined as an entity that consists of patterned and interdependent behaviours of individuals that pursue certain common goals (Allport, 1962). PSFs are approached as social systems that are embedded in broader societal systems and consist of multiple, integrated and overlapping systems. Innovation and development activities are seen to form one or several social systems that consist of individuals' interrelated actions in the creation of beneficial novelties; these systems are termed here as *innovation and development systems*. Individuals may pursue different goals to improve the organisation's life, which means that innovation and development activities in an organisation may form multiple, integrated or isolated systems with different structural properties.

A *social structure* is defined as principles (that is, rules and resources) that pattern the behaviours in a social system and make them persistent over space and time (Giddens, 1984). In the present study, the structures of innovation and development systems are studied from the perspective of *roles*, which are defined as characteristic behaviour patterns for individuals occupying certain social

positions (Merton, 1957). Roles are seen as one conceptual specification of social structure, offering a detailed view of interaction at individual level (Callero, 1994). Roles include two dimensions: role expectations (those rules and resources that enable and constraint the role-occupant's behaviour and define him/her as a part of the social system); and actualised role behaviours, which may reproduce or shape role expectations. Based on this idea, *role structure* is seen to consist of interrelated role expectations that pattern the role behaviours of the members of an innovation and development system. The study is in line with the theory of structuration (Giddens, 1984), which means that individual's ability to shape and modify the roles and role structures is acknowledged.

The primary research question is formulated as follows: *What is the nature of role structures in innovation and development activities in a professional service firm?* The four sub-questions are:

RQ1: What kind(s) of role structure(s) exist in innovation and development activities?

RQ2: How flexible are the role structures?

RQ3: How coherent are the role structures?

RQ4: What explains the nature of role structures?

Role structures are understood as socially constructed phenomena that are realised in the organisation's life through the organisational members' actions. The aim of the study was to discover, describe and explain the nature of the role structures, which means that the study is in line with the critical realist perspective. Five PSFs were used as the sources of empirical data. The primary empirical material consisted of interviews at all organisational levels. In total, 54 interviews were conducted, supported by secondary data such as documents and workshop materials. The analysis included categorising and comparing individuals' roles in different kinds of innovation and development activities to identify innovation and development systems and their role structures. This task consisted of integrating and comparing the interviewees' descriptions of role expectations, their own actions, typical practices and exceptions from these practices in different kinds of innovation and development activities. Formal and informal aspects were taken into account and individuals' ability to influence these structures was evaluated. The identified innovation and development systems and their structures were compared, both within and across the studied organisations, to identify explanations for the nature of role structures.

The author has been independently responsible for the selection of the theoretical approach, the design of the study, the collection and analysis of the data, and the formation of the conclusions. The data collection was conducted in a research project in which the case selection, negotiations with the case firms,

and a couple of interviews were carried out together with the project manager. In addition, two fellow researchers were involved in small triangulation exercises during the data analysis. Discussions with the supervisor, the project manager and fellow researchers have supported the research process and influenced the final form of the dissertation.

The study contributes to the current innovation studies by proposing a theoretical framework, built around the concept of a role structure, for studying innovation and development activities at multiple levels. This approach helps to show how a PSF may include a variety of innovation and development systems with different kinds of role structures. Although earlier studies have identified similar structure types, their co-existence of in a single organisation has not been discussed in detail. Therefore this study suggests paying attention to local contexts within an organisation as important factors that influence employees' participation in innovation and development activities. The study also shows why role structures vary in different contexts and suggests underlying principles that influence the dispersion of roles.

The study also contributes to individual-level studies of innovative behaviour by showing how innovative behaviour may be either expected or encouraged role behaviour in a PSF, and that the expectation may concern an individual employee or all position-occupants. The study supports those role theories that acknowledge individuals' ability to shape these expectations; these actions resulted in new roles and new kinds of innovation and development systems. The study suggests viewing role structures in innovation and development activities in the studied firms as including 'slack' that creates possibilities for role-making behaviours of those individuals with necessary motivations and skills.

1.2   The structure of the thesis

The research process has been very iterative in nature; definition of the boundaries of the phenomenon, theoretical modelling of the phenomenon, and empirical analysis of it have iterated throughout the process until a coherent understanding of the role structures in innovation and development activities was reached (Dubois & Gadde, 2002). However, to provide a coherent picture of the study, the report is organised in a linear manner.

Chapter 2 presents the theoretical framework, which was constructed by integrating four elements: studies of professional service firms, theories and empirical studies of innovation and development activities, theories of social systems, and role theories. Chapter 3 describes the research design, empirical data and the research process. The empirical findings are presented in three parts. Chapter 4 presents the categories of roles and role structures that were identified in the cases, and these categories are used in Chapter 5 to describe

innovation and development systems and their role structures in each case organisation. Chapter 6 summarises the differences and similarities between organisations and innovation and development systems in order to identify explanations for the nature of role structures. Chapter 7 summarises the key findings, discusses the contribution in relation to previous scientific knowledge, and suggests some theoretical interpretations of the findings. The chapter ends by discussing the practical implications of the study, evaluating the study and providing suggestions for future research.

2. Theoretical framework

The theoretical framework built in this chapter aims to define the concept of a role structure in innovation and development activities in a way that makes it possible to capture the phenomenon in professional service firms. Four theoretical streams are used, as shown in Figure 1. Firstly, *professional service studies* are briefly discussed in order to understand the contextual characteristics that must be taken into account when formulating the research questions and the theoretical framework. Secondly, different *viewpoints on innovation* are discussed in order to conceptualise innovativeness, innovation and development activities and the outputs of these activities in a way that fits the context of professional service firms. Thirdly, the framework for studying role structures is constructed. Role structure is approached as a collective construct that requires a multilevel research design. The theories of *social system and social structure* in organisational settings are used to understand the collective nature of activities. Finally, *role concept* is added as a tool that makes it possible to link individual and collective level in the study.
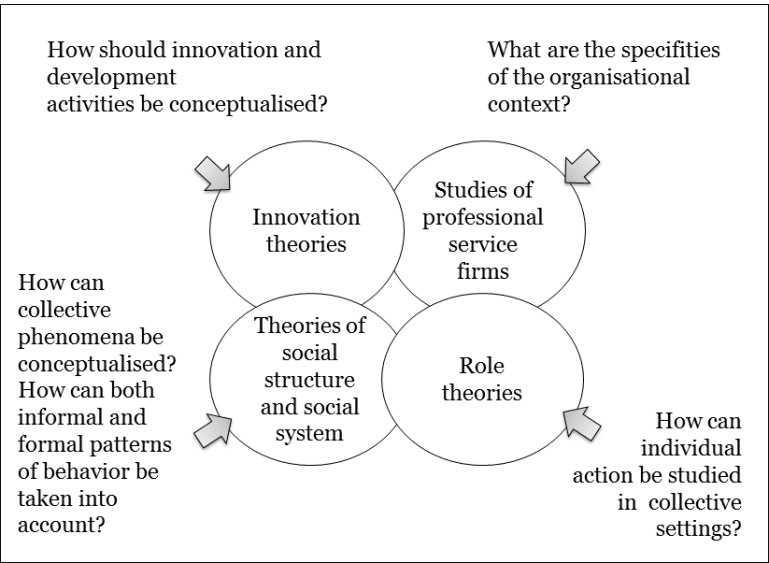
Figure 1. Elements of the theoretical framework

2.1 Characteristics of professional service firms

Professional work provides an interesting context for organisational studies. The work of professionals has been studied in several organisational contexts in public and private spheres; these include organisations led collectively by professionals, organisations in which professionals are subordinated to administrative framework, and other settings in which professional employees work in a separate unit or as advisors (Scott, 1965). This study focuses on professional service firms (PSFs) that provide business services. In a business service context, these firms have also been labelled as professional business services (PBS) (Løwendahl, 2001) or as knowledge-intensive business services (KIBS) (Miles et al., 1995).

Several features make PSFs an interesting and somewhat specific context for studying employees' roles in innovation and development activities. A knowledge base, which is often at least partially embedded in autonomous employees, is an important feature that has an impact on many organisational aspects. Another feature worth mentioning is the increased managerial control in many PSFs, which may constrain employees' autonomy. This chapter defines what a professional service firm is and briefly reviews its organisational characteristics in order to provide an overview of a professional service firms as a research context.

The characteristics of professional and knowledge-intensive service firms have much in common, and the concepts are sometimes synonymous. Both concepts refer to expert services that rely on a substantial body of complex knowledge, which is often seen to be embodied in highly skilled employees (e.g., Starbuck, 1992; Alvesson, 2004). The interaction between a client and a service provider is considered intensive in both diagnosis and service delivery phases, and employees are believed to have a high degree of personal judgement in service provision (Miles et al., 1995; Løwendahl, 2001; Alvesson, 2004). In addition, low capital intensity (that is, intangibility of services), has also been counted as an important characteristic (Von Nordenflycht, 2010).

However, the traditional understanding of a professional organisation presumes that employees are trained in a standardised body of knowledge that is certified by a relevant professional authority, and that services are regulated by professional norms of conduct (Alvesson, 2004; Winch & Schneider, 1993). Some knowledge-intensive services, such as management consultancies, are not characterised by these features. Knowledge-intensive service firms are often multidisciplinary and employ experts from many fields (Alvesson, 2004; Løwendahl, Revang, & Fosstenløkken, 2001). Knowledge-intensity also seems to emphasise a constantly evolving knowledge base; new knowledge creation often takes place during service provision (Starbuck, 1992), since the customer assignments are idiosyncratic and therefore require creativity and adaptation to specific circumstances (Alvesson, 2004). However, some professional service

firms base their strategy on efficient delivery of replicable or standardised professional services (Maister, 1982) that rely on a codified organisational knowledge base and routines (Morris & Empson, 1998). The professional service firms in the present study include services that are not controlled by professional authorities, but exclude firms with a knowledge base that is largely standardised.[1]

Due to the above-mentioned characteristics, professional employees are traditionally thought to have autonomous positions and to be able to exercise their personal judgement in service delivery (Alvesson, 2004; Greenwood, Hinings, & Brown, 1990; Mills et al., 1983). The ideas of informal structures, self-organising, peer evaluation and collegial control have been used to characterise leadership in professional service firms (Ouchi, 1980; Greenwood et al., 1990; Løwendahl, 2001). Due to these features, the importance of 'ordinary' employees in innovation and development activities is emphasised. Firstly, the employees possess the knowledge needed to develop services; secondly, due to informality and autonomy, as well as intangibility of services, they may develop many novel solutions alongside their work without formal negotiations and investments (e.g., Heusinkveld & Benders, 2003)

Nonetheless, certain trends may constrain such autonomy and informality: some studies have suggested growth, client-orientation, competitiveness, and efficiency in service production are now seen as important in many PSFs (Cooper et al., 1996; Hinings, 2005). Activities are rationalised and 'managed', even in pure professional service firms, and business objectives exist in addition to professional objectives and ambitions. Whereas PSFs have traditionally been owned by partners, a so-called 'managerial professional business' archetype has been identified, with external ownership and an emphasis on organisation-wide strategy and business-orientation. Marketing and management are conducted as separate tasks that are taken care by trained managers, rather than by professionals (Cooper et al., 1996).

These features, together with increased formalisation and centralised control, are interpreted as new forms of bureaucratisation in PSFs (Kärreman et al., 2003; Robertson & Swan, 2004; Alvesson & Thompson, 2005; Brivot, 2011). Ackroyd et al. (2005, p. 12) characterise these changes as follows:

'Managers exhort workers to be more self-sufficient and ready to "pack their own parachute", even while managerialism – strategies that exert increasing control over workers in an endless quest for higher productivity – is on the rise. Even technical and professional workers, hired to use their expertise and independent judgment, are increasingly subject to electronic monitoring, work routinisation, and intense pressure to meet short-term quotas.'

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[1] However, the degree of standardisation vs. uniqueness of customer solutions may vary between organisational units within a PSF (Alvesson, 2004).

However, studies suggest that bureaucratisation in these firms may differ from traditional modes. Although political decision making can be centralised, it may not influence a lot core work processes and responsibilities (Courpasson, 2000). For example, even if new standardised work methods are introduced, employees may be able to use their judgement in how to use them (Kärreman & Alvesson, 2004). However, the bureaucratic control may interact with socio-cultural forms of control, which has a greater impact on individuals (Kärreman & Alvesson, 2004; Brivot, 2011).

Some studies also suggest that, despite the common argument that professional work does not bloom in bureaucratic settings, this relationship is not straightforward. Kärreman et al. (2003) suggested that bureaucracy in these firms is used as an ambiguity-coping strategy, which may actually provide a shared meaning or common 'language' for an organisation's members (ibid.). These notions are in line with Organ and Greene's (1981) notions that formalisation may have alienation-reducing effects that outweigh negative effects, if organisational guidelines are in line with professional norms. They suggested that 'while professionals undoubtedly seek a measure of autonomy and discretion on the technical core of their work, they can apparently nonetheless suffer from lack of clarity in their roles and in the organisational context within which they carry out their activities' (1981, p. 249). Transparency may also increase public trust of professional judgement and therefore strengthen the reputation of professionals (Brivot, 2011). However, Kärreman et al. (2003) noted limitations to bureaucratisation in these firms:

'As soon as bureaucratisation becomes an ambiguity-reducing or ambiguity-eliminating strategy, rather than an ambiguity-coping one, organisations will leave the knowledge-intensive (i.e. ambiguity-intensive) domain, and enter the well-known territories of industrial manufacturer or service provider' (Kärreman et al., 2003, p. 89).

The impact of these trends is likely to depend on the nature of the professional service firm; the balance between unique customer projects and formalised service offerings has been considered as an important strategic decision in PSFs (Løwendahl, 2001; Maister, 1982). Some firms may base their strategy on continuously developing their expertise by searching for novel customer problems that are solved by highly experienced professionals. Other firms may focus on a certain area of expertise, formalise their service offering and use junior labour to conduct the majority of customer assignments (Maister, 1982). These choices influence the degree to which formal structures and managerial methods are useful in the firm in question; the more standardised the service output is, the more a firm may benefit from formal structure and processes (Løwendahl, 2001).

Therefore, different organisational forms are identified in different kinds of PSFs, and it is likely that not all firms are influenced by the trends of formalisation.

In the light of these discussions, the context of professional service firms is an interesting one regarding employees' participation in innovation and development activities. The autonomy that professionals enjoy in their work has perhaps been the basis of so-called ad hoc innovations that are created in the customer interface (Gallouj & Weinstein, 1997). However, alongside the formalisation of professional services, more systematic approaches may be called for, and the roles and abilities of professionals to influence these activities may change (see, e.g., Sundbo, 1997). Diminishing autonomy may also have a profound impact on professionals' work and attitudes (Cohen, Finn, Wilkinson, & Arnold, 2002; Robertson & Swan, 2004; Schilling, Werr, Gand, & Sardas, 2011). Therefore, the tensions between autonomy and control may present challenges for organising and managing innovation and development activities. Before addressing these issues in more detail, the next section defines innovation and development activities in a way that is suitable for the study of PSFs. This is followed by a review of current empirical studies concerning innovation and development activities in PSFs.

2.2 Conceptualisation of innovation and development activities

Innovation has been a popular topic for discussions in the academic and practical fields; due to rapid changes in many industries, as well as more open and international competitive field, the ability to remain competitive through innovations has been considered essential for firms. Innovation has been approached from various perspectives in different scientific fields and addressed at the individual, group, organisation, organisational population and regional levels, among others. The studies have explored antecedents of innovation and the actual processes through which innovations take place (King, 1990; Slappendel, 1996; Van de Ven & Poole, 2005).

The present study focuses on organisational aspects related to innovation and development activities: an organisation-level understanding of how different employees are expected or able to engage in innovation and development activities is formed by exploring role structures. Although academics and practitioners often emphasise the innovative potential of the entire organisation, there is not yet a lot of knowledge about where exactly this potential is and how it is actualised in different organisational contexts. Whereas quantitative studies often address organisational antecedents to innovation processes, qualitative studies at the organisational level are less frequent.

To address this topic, clarifications of the main concepts at individual and collective levels are required. Since innovation and development activities in

services are often integrated in normal service delivery activities, it is important to define them carefully before empirical analyses. Here, these activities are separated from other organisational activities through their specific goals and outputs (see Morgeson & Hofmann, 1999). Firstly, the concept of innovativeness as an underlying potential for action is discussed in order to understand the overall meaning of these activities in an organisation. Then, innovations and other beneficial novelties as outputs pursued through innovation and development activities are discussed and defined in the context of a service firm.[2] This is followed by a conceptualisation of innovation and development activities in this context. The chapter ends by reviewing earlier studies concerning the organisation of innovation and development activities in service organisations.

2.2.1 Innovativeness in organisations

In organisation studies, innovativeness is most often attached to the organisational level. It is often seen as a beneficial quality for an organisation, and sometimes even considered as a critical ability in order to survive (Dougherty and Hardy 1996). The studies of organisational innovativeness are typically variance studies (Slappendel, 1996), in which various individual, group, organisational, or environmental variables that have an effect on organisational innovativeness are mapped out and compared (e.g., Özsomer, Calantone, & Di Bonetto, 1997; Hult, Hurley, & Knight, 2004; Lee & Tsai, 2005). Since innovativeness has been addressed in several research traditions, different studies have emphasised different aspects of the concept. The phenomenon as a whole seems to be a challenging one to capture.

Innovativeness is typically defined as an organisational motivation or capability linked to the creation of innovations. As *motivation*, it has been defined as openness to new ideas in a firm's culture (Hurley & Hult, 1998, p. 44) or as a willingness to venture beyond the current state of the art (Lumpkin & Dess, 1996), as shown in a firm's 'tendency to engage in and support new ideas, novelty, experimentation, and creative processes that may result in new products, services, or technological processes' (ibid., 142). Other researchers understand innovativeness as *capability*; it is defined as an organisation's 'overall innovative capability of introducing new products to the market, or opening up new markets, through combining strategic orientation with innovative behaviour and process' (see also Hult et al., 2004; Wang & Ahmed, 2004, p. 304).

Studies have related innovativeness to either initiation or application activities. Some scholars relate innovativeness to *idea generation* (e.g., Lumpkin & Dess,

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[2] Innovation has sometimes been used to refer to both the innovation process and the output of the process. Here, the concept of innovation is used to refer to the output.

1996; Hurley & Hult, 1998) and separate innovativeness from innovative capability, which is associated with an ability to adopt and implement new ideas (Hurley, Hult, & Knight, 2005; Hurley & Hult, 1998, p. 44; Woodside, 2005). Other studies have defined innovativeness as the early adoption of new ideas, and hence emphasise the *development and implementation* of innovations[3] (e.g., Rogers, 1983). Innovativeness has also been attached to different *domains,* ranging from technological evolution to a variety of organisational domains (Bigoness & Perreault, 1981; Salavou, 2004; Wang & Ahmed, 2004).

The present study integrates these definitions to view organisational innovativeness as a common denominator to those organisational qualities that are linked to the creation of beneficial novelties. Innovativeness is seen to pursue the goal of organisational survival in changing circumstances through the creation of beneficial novelties. It can be seen as an underlying *potential for action*, which in itself does not create any concrete outputs but is realised through innovation and development activities. Both the ability and the motivation to create beneficial novelties are seen as necessary, including both the initiation and application of beneficial novelties. Hence, *organisational innovativeness is defined as the organisational ability and willingness to create beneficial novelties*. Here, innovativeness as such is not limited to a specific organisational domain.

Although the organisational level is emphasised in innovativeness studies, innovativeness can also be attached to individual or small group levels, where the basic definition – as the ability and willingness to create beneficial novelties – is likely to be similar. However, the concept has been rarely used at these levels. Instead, creativity is a concept that is often attached to individual and group levels, where it is typically defined as 'the production of novel and useful ideas by an individual or small group of individuals working together' (Amabile, 1988, p. 126). Some studies have addressed creativity at the organisational level (Drazin, Glynn, & Kazanjian, 1999; Woodman, Sawyer, & Griffin, 1993), but the organisational level is typically only taken into account in the form of organisational-level antecedents to individual or group creativity. In addition, creativity relates to the initiation of ideas, excluding the implementation and application of ideas. The difference in the use of the concepts is likely to be due to the nature of the phenomenon. Most scholars argue that ideas can be initiated at the individual level but that the implementation of the ideas in an organisational context almost always requires collective efforts (Amabile, 1988; West & Farr, 1989).

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[3] Although 'adoption' refers to the implementation of ideas developed elsewhere, these processes may include complex problem-solving in which ideas are adapted to address the needs and problems of the organisation (Damanpour & Aravind, 2012).

2.2.2 Beneficial novelties and innovations

Whereas the overall goal of innovation and development activities is to survive in changing circumstances, the present study views concrete outputs as including *new and useful ideas that are put into practice*, such as work methods, structures, resources, processes, products and services (Van de Ven, 1986; West & Farr, 1990). These outputs are referred to herein as *beneficial novelties* (Kleysen & Street, 2001). Since novelty and usefulness are both relative terms, beneficial novelties need to be defined against a certain context. Also, the domains of beneficial novelties need to be specified. These issues are discussed next.

What is novel in one context may be business as usual in another (Farr & Ford, 1990). Therefore, newness need to be evaluated against the context in order to distinguish beneficial novelties from business as usual on one hand, and innovations from other beneficial novelties on the other. *Here, ideas that are new and useful in the organisational context in question are considered to be beneficial novelties.* Boundaries between the creation of beneficial novelties and business as usual are sometimes difficult to define in a professional service context, since many innovations may originate from solutions created for individual customers (Gadrey, Gallouj, & Weinstein, 1995; Gallouj & Weinstein, 1997). However, Drejer (2004) warned service innovation researchers not to consider tailor-made service solutions as innovations. Every customer output may have some degree of newness in it, since each customer's situation is unique in some way. Some professional services, such as architects' offices and advertising agencies, are based on creativity in customer work (Winch & Schneider, 1993). In the present study, only those solutions that are novel in relation to the firm's typical service activities and show some potential for learning and replication are considered to be beneficial novelties (Gadrey et al., 1995; Toivonen, 2010). Those customer outputs that are new to an individual customer but are business as usual for the service organisation itself are excluded from the analysis. Hence, innovation and development activities are limited to those activities that somehow contribute to organisational development.

Depending on the novelty type and the context, some beneficial novelties may also be identified as innovations. Here, *innovations* are defined as beneficial, replicable novelties that are also new outside the firm (Toivonen & Tuominen, 2009). Knight's definition of an innovation as 'the adoption of a change which is new to an organization and to the relevant environment' could be applied (1967, p. 478). This narrower conceptualisation of innovation makes it possible to maintain its original meaning as an economic phenomenon that benefits the broader population and encourages others to follow (see also Drejer, 2004; Schumpeter, 1934). For example, an organisation can adopt ideas that are already business as usual for competitors. These novelties may no longer be defined as new innovations, but they are included in the present study if they are new and

useful in the studied firm. Therefore, the scope of the study includes a broader set of novelties than just innovations; minor novelties that often are seen as products of continuous development are also included (cf. Weick & Quinn, 1999). However, innovations are not distinguished from other novelties in the analysis.

In addition to newness, usefulness also depends on the context (Farr & Ford, 1990; Ford, 1996). Ideas are typically considered useful if they have the potential to provide direct or indirect value to the organisation, in either the short or long-term (Shalley, Zhou, & Oldham, 2004). This value might not be just economic; increased satisfaction, personal growth and better interpersonal communication may also be included (West & Farr, 1989). However, even successful novelties may be dysfunctional for some parts of the organisation due to different goals and interests of organisational members (Anderson & Gasteiger, 2007). For example, novelties that are beneficial from a managerial point of view may be seen as dysfunctional from an employee's perspective (for example, formalisation of work practices; see Drazin, 1990) or vice versa.

West and Farr (1990) provided a definition of innovation in which usefulness is defined thoughtfully. They defined innovation as 'the intentional introduction and application within a role, group, or organisation of ideas, processes, products or procedures, new to the relevant unit of adoption, designed to significantly benefit the individual, the group, organisation or wider society' (West & Farr, 1990, p. 9). This definition emphasises *the intention* to benefit the relevant unit of adoption. The present study is limited to those novelties that are *intended to be beneficial in the organisational context*. It excludes novelties that are intended to be harmful in the organisational context, even though they might be useful for the individual in question.

Finally, it is important to discuss the various types of beneficial novelties. Innovations within organisations have been divided into several categories. Useful distinctions have been made between administrative innovations that are linked to organisational structure and the management of people, and technical innovations that are more directly related to primary work activities, including innovations in products/services and processes/service operations (e.g., Damanpour & Evan, 1984). More fine-tuned categorisations include, for example, distinctions between product/service innovations, production process innovations, organisational-structure innovations, and people innovations (Knight, 1967). Product and service innovations have also been categorised into different types (see, e.g., Gallouj & Weinstein, 1997; Bullinger, Fahnrich, & Meiren, 2003; den Hertog, 2011), and broader changes – such as business model innovations – have been taken into account (Chesbrough, 2010).

The present study includes all domains of beneficial novelties in an organisational context. There are two reasons for this scope. Firstly, the characteristics of service context make it impractical to limit the study to a

specific domain; the domains of product, process and resources are often closely intertwined in services.[4] This is because users participate in the service value-creation processes, and the main benefits may actually derive from the process rather than from the output (Payne, Storbacka, & Frow, 2008; Vargo & Lusch, 2008; Gallouj & Savona, 2009). Therefore, service as a customer output cannot always be separated from the production process, which means that innovations in resources/processes and service outputs are intertwined (Gallouj & Savona, 2009). Service innovation studies, however, have identified different dimensions in which the novelty occurs. Den Hertog (2010), for example, suggested that service innovation may focus on the service concept, the customer interaction, the business partners, the revenue model, or on the organisational and technological components of a service delivery system. As these dimensions are intertwined, an innovation in one element is likely to influence other elements.

Secondly, the broad scope also makes it possible to identify and compare activities in which different organisational members are able or expected to participate, and thus creates a holistic picture of the dispersion of roles in innovation and development activities. Researchers suggest that an organisation can be innovative in one area but not in another (Bigoness & Perreault, 1981; Salavou, 2004) and that different individuals are involved in different domains of innovation (Daft, 1978; Ibarra, 1993). It is interesting, therefore, to understand the extent to which innovativeness concerns the whole organisation as opposed to being bound to a specific domain or organisational part.

2.2.3 Innovation and development activities

As discussed above, innovativeness can be seen as an organisational potential that is realised through the activities of an organisation's members. At the most elemental level, these activities are divided into initiation and implementation of beneficial novelties (Zaltman, Duncan, & Holbek, 1973). Initiation is often linked to creativity; that is, the creation of novel and useful ideas (Amabile, 1988). Apart from creating new ideas in-house, ideas can be adopted from outside and applied and modified to fit the organisation's purposes (Amabile, Conti, Coon, Lazenby, & Herron, 1996). Similarly, the idea can be invented in-house, but realised outside the organisation's boundaries: a firm may use its partners to realise the idea, or licence the idea (Chesbrough, 2011). All these different cases contribute to the creation of beneficial novelties. Hence, innovation and development activities are defined as the activities that *aim to create new and useful ideas and/or develop*

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[4] This feature seems to be emphasised in services, but is not limited to the service context: Van de Ven (1986) suggested that all innovations may include both administrative and technical elements, and that these elements should therefore be treated as dimensions of innovation rather than kept distinct.

and implement them. This study focuses on exploring employees' roles in these activities. The activities are termed as innovation and *development* activities to include the creation of a variety of beneficial novelties, not just innovations. In this definition, the intentionality of activities refers to the idea that the goal is to create beneficial and novel outputs (West & Farr, 1989), although the consequences may be non-intentional. For example, implementation of a novelty may fail, or the novelty may turn out to be useless or even harmful.

Innovation activities are typically examined through process perspective (Slappendel, 1996); since an innovation is defined as a novelty that is put into practice, innovation process is typically defined to include all activities from the development of new ideas to their implementation (Van de Ven, 1986). This same terminology can be also be used with regard to other kinds of novelties. Process studies are typically qualitative case studies, in which innovation processes are seen as complex and iterative processes influenced by actors, events and states deriving from various organisational and societal levels (see, e.g., Van de Ven & Poole, 1995; Poole & Van de Ven, 2004). These studies aim to identify the activities and events included, the temporal sequence of the activities, and the interactions between different events and objects during the process (Slappendel, 1996; Van de Ven & Rogers, 1988).

Since this study focuses on the role structures in innovation and development activities, it builds on theories that conceptualise the activities from an individual employee's perspective, as opposed to taking a process-centric perspective. Individuals' actions can be seen as micro-level actions performed in innovation and development processes. However, due to various organisational, situational and other factors, individuals' actions may never lead to realised changes, which makes it difficult to attach them to any specific process (Tuominen & Toivonen, 2011). All individual actions that aim to create beneficial novelties are seen here as manifestations of innovativeness, and are therefore important to study.

This study identified *innovative behaviour* as the most suitable concept to characterise these individual actions. This concept originates from social/organisational psychology and has been defined as covering '*all individual actions directed at the generation, introduction and application of beneficial novelty at any organisational level*'[5] (see de Jong & den Hartog, 2003; Janssen, 2000; West & Farr, 1989). Similar behaviour is also studied with other similar concepts. Examples are change-oriented organisational citizenship behaviour (Choi, 2007), taking charge at work (Morrison & Phelps, 1999), job crafting (Wrzesniewski & Dutton, 2001), and proactive work behaviour (Parker, Williams,

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[5] In these studies, action and behaviour are treated almost as synonymous concepts. For the sake of clarity, this study views an individual's innovative behaviour as being realised through a variety of individual actions; actions are seen here as manifestations of behaviour.

& Turner, 2006). A common feature of these concepts is that they focus on individual-level activities that aim to make beneficial changes. The concept of innovative behaviour is chosen as it most closely fits innovation discourses.

Innovative behaviour has been divided into different types based on tasks conducted in the creation of innovations. Figure 2 shows the types of innovative behaviour identified in the literature. Typical types are the suggestion of ideas, the implementation of ideas (e.g., Axtell et al., 2000), championing (Scott & Bruce, 1994; Janssen, 2000; based on Kanter, 1988), and sometimes also the transfer or diffusion of innovation (Kanter, 1988). Kleysen and Street (2001) built on these categories and proposed five dimensions of innovative behaviour, each including a variety of tasks, including the following:

1) *Opportunity exploration*: Paying attention to opportunity sources, looking for opportunities to innovate, recognising opportunities, and gathering information about them;

2) *Generativity*: Generating ideas and solutions to opportunities, generating representations and categories of opportunities, and generating associations and combinations of ideas and information;

3) *Formative investigations*: Giving form to and fleshing out ideas, solutions, and opinions and trying them out through investigation; formulating ideas and solutions, experimenting with ideas and solutions, and evaluating them;

4) *Championing:* Socio-political behaviours involved in processes of innovation, such as mobilising resources, persuading and influencing, pushing and negotiating, and challenging and risk-taking; and

5) *Application*: Behaviours that aim to make innovations a regular part of business as usual; implementing, modifying and routinising. (Kleysen & Street, 2001).

Initiation		Implementation		E.g. Axtell et al., 2000 (based on Zaltman et al., 1973)
Problem recognition & creation of a novel/adopted solution	Promotion of an idea within organisation	Realisation of an idea (building a prototype)	Diffusion of innovation (Kanter's model)	E.g. Scott and Bruce, 1994, Janssen 2000 (based on Kanter 1988)
Opportunity exploration	Generativity	Formative investiga-tions	Champio-ning	Application	Kleysen and Street, 2001

Figure 2. Types of innovative behaviour

In addition to these behaviour types, Kesting and Ulhøi (2010) suggested that *decision making concerning innovations* should be studied as an important part of employees' actions, since it shows whether authority is delegated to employees in innovation activities. Although decision making is not stated as innovative behaviour in the literature, it is necessarily involved in the processes of creating and utilising beneficial novelties, and is therefore treated in the present study alongside innovative behaviour types. Decision making and championing may be seen as the activities in which power and other social dimensions of the behaviour are most visible.

Although the typologies of innovative behaviour seem to be inspired by stage models of innovation processes, different behaviour types occur both iteratively and simultaneously, and different individuals may be involved in any combination of these behaviours at any given time (Scott & Bruce, 1994). It should also be noted that innovative behaviours are played out in both individual and group contexts (Axtell et al., 2000; Janssen, 2000; e.g. Kanter, 1988), and collective factors are believed to become increasingly important as the idea proceeds from initiation to implementation (Axtell et al., 2000).

The studies of innovative behaviour have often focused on informal innovative actions of workers, as opposed to behaviours taking place in formal innovation processes. As a result, innovative behaviour has been considered as *extra-role behaviour*. It is often contrasted with *prescribed work behaviours* (that is, normal work requirements) and it has been suggested that innovative work behaviours are usually not recognised by formal reward systems (Dorenbosch, Engen, & Verhagen, 2005; Janssen, 2000; Katz & Kahn, 1978). The present study uses innovative behaviour concept as a tool for concretising innovation and development activities at the individual level, including all organisational levels and both formal and informal contexts. Innovative behaviour types are likely to be identified in all kinds of innovation and development processes, from strategic renewal processes to processes that improve an individual's working conditions (Tuominen & Toivonen, 2011). However, the specific nature of behaviours may be different in the creation of radical and incremental novelties (De Jong & Kemp, 2003).

The existing studies in innovative behaviour do not offer a great deal of insight into how innovative behaviours are realised in different organisational contexts and levels. Typical studies have taken a variance approach and studied the factors that enable and motivate employees to undertake these behaviours (Dorenbosch et al., 2005; Janssen, 2000; Ramamoorthy, Flood, Slattery, & Sardessai, 2005; Scott & Bruce, 1994). This study contributes to current knowledge by exploring innovative behaviour in PSFs through qualitative methods. To provide a starting

point, the following section reviews previous empirical studies concerning the organisation of innovation and development activities in service firms.

2.2.4 Organisation of innovation and development activities in services

Whereas early innovation studies focused on individual entrepreneurs (Schumpeter, 1934), innovation activities have since been viewed as social and collective activities (Amabile, 1988; Van de Ven, 1986). Interactions between organisational members – and with the actors outside organisational boundaries – are needed in order to develop and implement beneficial novelties. Recent studies emphasise that all employees may and should be encouraged to innovate (Kesting & Ulhøi, 2010; West & Farr, 1989). This issue has been especially important in service firms.

Many studies of PSFs suggest that the majority of innovation and development activities is carried out by service personnel (Heusinkveld & Benders, 2003; Sundbo & Gallouj, 2000; Sundbo, 1997). For example, Den Hertog et al.'s (2006) study of business-related services suggests that if a firm does have a specific R&D department, it is likely to focus on technological development. Their case study also revealed that formalised innovation procedures and long-term R&D strategies for service development were rare, although many firms had started to develop more systematic approaches for service development (ibid.). The majority of service development activities were carried out by cross-organisational project teams that dissolved after the process was finalised. These processes were not typically centrally coordinated and documented, and therefore many activities were "hidden" R&D that was dispersed within departments (Den Hertog et al., 2006).

The entrepreneurial orientation of employees is considered to be an important factor in PSFs (Kärreman et al., 2003). Employees are likely to not only suggest ideas, but also to carry out the development and implementation of ideas. The present study was originally inspired by Sundbo's findings (Fuglsang & Sundbo, 2005; Sundbo, 1996, 1997). He suggested that service innovation activities are typically considered as collective processes in professional service firms (Sundbo, 1997). In his study, all professionals were collectively held responsible for the innovation activities, including both the initiation of new ideas and the development of the ideas into commercial activities. Sundbo assumed that the ability to innovate was seen as part of the professionals' education and noted that 'the role of being a professional implied being an intrapreneur' (p. 447). The profession was also seen to set boundaries to the entrepreneurial ideas, due to which the activities were characterised as 'disciplined intrapreneurship' (ibid.).

However, as the firms in Sundbo's study standardised their activities, they moved from collective orientation into a strategic, management-led mode of

innovation activities. The firm's strategy acted as an inspiration and set the framework within which innovation activities took place (Sundbo, 1997, 2001). Sundbo (1996) refers to this kind of organisational innovation system as an empowerment system with a dual organisational structure: innovation activities took place in an informal social system of employees, but this entrepreneurial spirit was 'balanced' by a managerial system. This balancing task includes both stimulation and control of employees' innovation activities based on strategy (Sundbo 1996; 1997). Sundbo also identified a variant of this model in which the top managers themselves acted as intrapreneurs, and other employees participated in elaborating and developing the ideas further (Sundbo, 1997).

Heusinkveld and Benders (2003) identified a 'professional-driven form' and a 'corporate-driven form' of new concept development in consultancies, which resemble Sundbo's findings. In professional-driven form, development ventures driven by one or more consultants were continuously being created. These ventures were driven by professional interests. Heusinkveld and Benders suggested that 'this interest often lies dormant in "professional hobbies"; but when these hobbies yield income, development activities are likely to start up' (p.112). Instead of following a linear pattern from development to launch, the development processes often iterated with the application of ideas in customer assignments (see Toivonen, Tuominen, & Brax, 2007, for similar results), and the ideas were disseminated locally by the professionals through gradually enlarging the networks of interested clients and colleagues (Heusinkveld & Benders, 2003). The professional-driven form was typical in organisations that had a weak departmental structure and a pool of relatively autonomous people.

In the corporate-driven form, potential ideas went through a corporate selection process and development efforts were seen as corporate investments with a goal of developing the company's expertise. In contrast to the professional-driven form, the full service concept was typically developed before launch. Thereafter, the concept was launched with a large-scale campaign. Heusinkveld and Benders argued that these two forms of new concept development are not easily reconciled and that each has its own challenges. In the professional-driven form, idea generation is largely dependent on an individual professional's ambitions and upcoming customer assignments. There is also the danger of many individuals simultaneously 're-inventing the wheel'. The corporate-driven form, on the other hand, may not motivate consultants to search for new opportunities, which wastes the innovative potential of expert labour (Heusinkveld & Benders 2003).

Even though these studies emphasise employees' roles in innovation and development activities, a few studies have addressed the role differentiation *among* professional employees. Some ideas are found in Bailey and Neilsen's (1992) study in an organisation that provided both innovative and standardised

professional services. Following Mintzberg (1980), Bailey and Neilsen referred to this kind of structure as 'bureau-adhocracy'. Earlier literature had suggested that large bureau-adhocracies would be divided into separate groups in which one would follow bureaucratic logic and the other would follow adhocratic logic. In Bailey and Neilsen's study of a small professional department, the division was made at the level of employees: some provided standardised services, whereas others were engaged in innovative activities (Bailey & Neilsen, 1992; see also Groysberg & Lee, 2009). Chang and Birkett (2004) suggested that expectations regarding the balance between creativity and productivity may depend on seniority. Their study suggested that whereas novices were expected to be productive, experts were expected to be both creative and productive. Experts were more independent and were seen to possess knowledge of customers and of how to efficiently conduct customer projects. They were also assumed to be intrinsically motivated to be creative. Therefore, they were seen to be able to balance creativity and productivity themselves (Chang & Birkett, 2004).

Note that the studies discussed here focus on service innovations, which may explain the emphasis on employees' innovation activities. When a broader set of innovations is included, differences are also found between managers' and professionals' innovation activities. Daft (1978) proposed a dual-core model of innovation in which administrative innovations were carried out at managerial levels and professional innovations by professionals. Drazin (1990) suggested that also the attitudes towards different innovations vary between managers and professionals; professionals are likely to resist innovations that may reduce their power and make them more substitutable. This especially concerns innovations that aim to standardise and routinize their expertise. Drazin argued that 'as the objective complexity of the professional task is reduced to the point of routinisation, and knowledge become fully rationalised, the professional may be threatened by being replaced by new professions, semi-professionals, bureaucrats or technicians" (1990: p. 254).

In summary, these studies suggest that PSFs engage in situations in which a collectivity simultaneously pursues both productive and innovative goals. Gibson and Birkinshaw (2004) addressed this kind of situation through the concept of *contextual ambidexterity*, where innovative activities may not be separated from productive activities through timing or by separating the activities into different divisions but where the individuals themselves may make decisions regarding when it is appropriate to pursue either of the goals (see also Groysberg & Lee, 2009). The findings discussed above suggest that role allocation in these situations may be based on the type of novelty in question; administrative innovations are created by managers, whereas innovations in the professional domain are created by professionals. In addition, the seniority of organisational members may influence the expectations towards innovativeness. The findings

also suggest that the type of organisation has an impact on the amount of control that top management has on employees' innovation and development activities: naturally, formalisation is likely to increase control.

2.2.5 Perspectives on innovation and development activities in the study

In summary, organisational innovativeness and innovation and development activities are seen here as two collective constructs that are closely intertwined but with different ontological character. Organisational innovativeness is defined in the present study as the willingness and ability to create beneficial novelties. It is seen as an underlying potential that is realised through innovation and development activities and played out by individuals that hold different positions in an organisation. Innovation and development activities are defined as those activities that aim to create new and useful ideas and/or developing and implementing them. At the individual level, these activities are conceptualised here with the help of the innovative behaviour concept. Depending on various factors, these activities produce beneficial novelties; that is, new and useful ideas that are put into practice. Those beneficial novelties that are also new outside the firm in a relevant environment can be labelled as innovations. Figure 3 shows the connections between the main concepts discussed above.
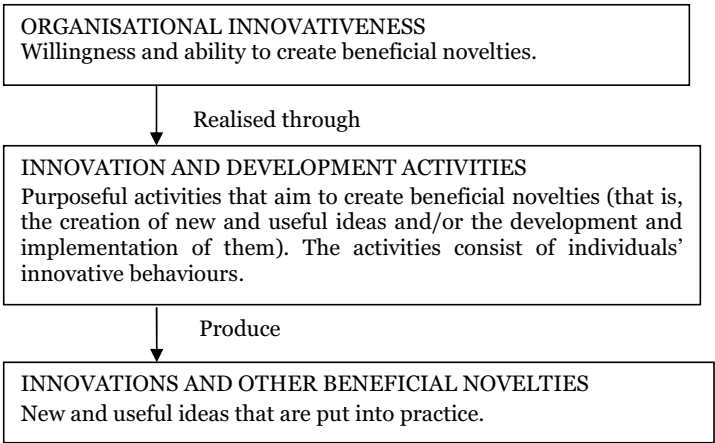
Figure 3. Relationships between innovativeness concepts

The earlier findings on PSFs provide a useful starting point for exploring the roles of different organisational members in innovation and development activities. To analyse role structures in innovation and development activities in more detail, a conceptualisation of collective-level structures is required. Although empowerment and participation in innovation is emphasised in many studies, it seems that there are currently few in-depth organisation-level approaches that address innovation and development activities in different organisational

settings; there seems to be a gap between the variance studies of the antecedents of organisational innovativeness and the qualitative studies of innovation processes. This is especially true with regard to activities that take place outside formal structures, like R&D departments. Among the earlier approaches, social network theories address informal networks, but often focus on quantitative explorations of network ties and information exchange between participants (Ibarra, 1993; Perry-Smith, 2006). Communities of practice studies provide insightful perspectives since they address interaction dynamics deeper, but focus on rather informal communities without explicit organisation-level agenda (e.g., Brown & Duguid, 1991; Thompson, 2005). Individual-level studies, such as innovative behaviour studies, explore individual informal actions, albeit with minimal attention to the structure as a whole (e.g., Scott & Bruce, 1994). In order to include both formal and informal aspects, and collective and individual levels, the next section discusses theories of social systems, social structure and roles and builds a conceptual framework using some of these theories.

2.3   Collective-level viewpoints: social system and social structure

The theories deriving from sociological and social psychological disciplines often aim to understand human interaction in different social contexts. These theories, particularly those that focus on social systems, seem most promising from the perspective of this study. These theories help explain how to explore structural qualities of activities that are informal but patterned, which may characterise many innovation and development activities in PSFs.

Social systems are studied in many different fields and levels of social life, including nations, tribes, groups, institutions, social movements and organisations. The theories addressing social systems were widely discussed during the 1960s, 1970s and 1980s. Since then, organisational studies have moved to both micro and macro directions. Similar topics have been addressed in different versions of the institutional theory, for example. In the current theories, the roles of individuals in relation to institutions have again been an area of interest (see, e.g., Barley & Tolbert, 1997; Lawrence, Suddaby, & Leca, 2009; Bechky, 2011). Since the present study focuses on an organisation's internal life, the social systems perspective was chosen for the theoretical framework as it best addresses this level of analysis.

This chapter starts by presenting general ideas regarding social system and its structure in organisational setting in order to lay the foundation for the study of role structures. Although organisations are often seen as coherent, rational and goal-oriented systems, autonomy and informality in professional service firms may be addressed by taking into account both informal and formal aspects, the divergence of goals, as well as multiplicity of structures within an organisation.

2.3.1 Organisation as a social system

Social systems are typically defined as social entities that consist of patterned and interdependent behaviours of individuals (Allport, 1962). These kinds of social entities emerge as individuals aim to achieve goals that they could not achieve alone: other individuals' actions are needed (Allport, 1962). In such an entity, the parts do not act alone as interrelated actions of members are necessary in order to acquire goals. Such systems only exist insofar as individuals reproduce the patterns of behaviour through their everyday actions (Allport, 1962; Giddens, 1984). In order for a system to persist over time, norms that guide the behaviour must begin to develop. These norms become routinized and institutionalised over time; the behaviours are distinguished from individuals and certain expectations are passed on to newcomers, either implicitly or explicitly (Allport, 1962; Berger & Luckmann, 1966; Katz & Kahn, 1978).

Since all social life is somehow patterned, all societies can be understood as social systems. These systems often partially overlap and become nested in one another, and individuals may participate in many systems simultaneously (Allport, 1962). Due to these characteristics, the boundaries of a society may be difficult to determine. Organisations are often easily identified since the goals of an organisation and the members are typically explicitly articulated. However, it is important to take the multiplicity and openness of a social systems into account in an organisational context, as well: institutional theories and open systems perspectives show that firms and their members are embedded within a larger field of different kinds of societies and institutions, which have a profound impact on a firm's life (DiMaggio & Powell, 1983; Scott & Davis, 2007).

Organisations differ from many systems since they are intentionally established to pursue explicit goals and in reaching their goals, they produce distinguishable outputs that other systems use as inputs (Parsons, 1956). In order to achieve goals, organisational rules and status structure are designed a priori (Blau & Scott, 1962; Scott & Davis, 2007) and organisational boundaries are often explicitly articulated (Katz & Kahn, 1978). Blau and Scott (1962) defined such formal establishment for an explicit purpose as *formal organisation*.

This kind of definition emphasises rationality of action and often include functionalist assumptions: organisations are seen to be comprised of interrelated parts that are all necessary and useful for the whole (Parsons, 1956). According to Katz and Kahn (1978), for example, all organisations consist of five subsystems: production subsystem, production-supportive subsystem, maintenance subsystem, adaptive subsystem, and managerial subsystem. Functionalist approaches assume that consensus is built between organisational members on the rules and morals involved in maintaining the social order; when a society is in a state of equilibrium, different sub-functions act naturally and often unconsciously in producing their parts (see, e.g., Parsons, 1951).

However, such approach has been criticised as being too deterministic and not acknowledging the individual agency; these approaches typically base on the idea of consensus, and set aside the effects of individuals' various motivations and choice (Goode, 1960; Astley & Van de Ven, 1983). Other scholars have paid more attention to multiplicity of goals and conflicts in organisations, and argued that organisational members have differing purposes for engaging into an organisation's life and do not necessarily agree on the formal goals (e.g., Gouldner, 1957; Drazin, Glynn, & Kazanjian, 2004). Formal structure may be viewed as a blueprint that does not correspond to real actions or is not even meant to do so (see, e.g., Etzioni, 1960; Meyer & Rowan, 1977).

The present study views innovation and development as forming one or several social systems within an organisation, consisting of patterned and interdependent behaviours of individuals that pursue the creation of beneficial novelties. These systems are labelled here as *innovation and development systems*. Certain resources and responsibilities concerning these activities may be formally designed, but emergent actions and individuals' own goals must also be considered, especially in the PSF context. The concept of social structure often takes both these aspects into account. This concept is discussed in more detail below.

2.3.2 Social structure

Social structure and social system are sometimes used synonymously. However, the two concepts can be said to have different ontological character. Giddens (1984) defined a social system as *social practices* that link persons in time and space, whereas a social structure is seen as *the principles that pattern those practices*. Giddens characterised structure as 'the structuring properties allowing the "binding" of time-space in social systems, the properties which make it possible for discernibly similar social practices to exist across varying spans of time and space and which lend them "systemic" form' (1984, p. 17). By separating a system from its structure, the linkages between actual activities and the principles underlying these activities can be addressed and individuals' ability to influence the principles may be explored. Nowadays, Giddens' (1984) model of structuration, like similar ideas of other scholars, is widely accepted when an individual's agency in certain social context is discussed. Hence, these ideas are used as a starting point in describing organisational social structures.

Giddens considered the social structure as virtual in nature: it is seen to exist 'only in its instantiations in such practices and as memory traces orienting the conduct of knowledgeable human agents' (ibid, p. 17). Unless individuals reproduce these principles through their everyday practices, the structure does not exist. The structure is seen to consist of two elements: rules and resources. *Rules* are defined as generalisable procedures applied in social life; they

constitute meaning and are related to the sanctioning of social behaviour. Rules may be both explicit and implicit. Many rules are only tacitly known by actors; they know how to go on in their daily lives without considering it consciously. Explicated rules may be seen merely as interpretations of some of these actual rules (Giddens, 1984). Implicit rules – which are also sometimes labelled as cultural schemas – are also more persistent and enduring; explicitly known and discussed rules may be replaced more easily than taken-for-granted beliefs (Sewell, 1992) [6].

Resources are defined broadly as anything that can serve as a source of power in social relations. Giddens (1984) identified *authorative resources,* which refer to the ability to generate command over persons or actors, and *allocative resources*, which refer to the ability to generate command over objects or material phenomena. Although the latter in particular may refer to many things, such as skills and physical objects, they must have some socially constructed meaning if it is to be counted as a resource in a social system.

Since both tacit and explicit rules are included, social structure is seen to include both formal and informal elements. Therefore, the focus here is not on understanding a priori designs, but the actual structures in organisation's life. Blau and Scott, for example, suggested that informal practices may emerge to support and complement formal plans, since a priori plans may never take into account all the details needed. Therefore, the formal and the informally emerging patterns may be *inextricably intertwined* (Blau & Scott, 1962). Those rules and resources that are formally explicated are defined here as formal elements in organisational social structure. These elements may be complemented - or contrasted - by informal elements, which are seen as those enduring rules and resources that are not formally articulated but are nonetheless shared among individuals in a specific organisational context (see also Ranson, Hinings, & Greenwood, 1980).

It is likely that certain formal rules and resources exist regarding innovation and development activities, although these elements may be complemented or contrasted by shared schemas deriving from an organisational or professional culture, for example. An example of an informal assumption is the above-mentioned finding that the ability to innovate may be implicitly assumed to be a part of a professional's education (Sundbo, 1997, p. 447).

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[6] This broad understanding of rules has some similarities with the concept of logics (Drazin, Glynn, & Kazanjian, 2004), institutions (Barley & Tolbert, 1997), or provinces of meaning (Ranson, Hinings, & Greenwood, 1980). It should be noted that structure has often been understood as a narrower construct. For example, Blau and Scott (1962) defined much of what Giddens considered as rules to be a part of culture, which they separate from structure.

2.3.3 Diversity of structures within an organisation

Considering the research topic in this study, it is important to understand organisations as consisting of several interconnected and overlapping structures, as opposed to one stable and coherent structure. Firstly, these structures exist due to the different nature of organisational tasks; different organisational subsystems may require different kinds of internal structures (e.g., Katz & Kahn, 1978). It is often argued that production activities, for example, require different structures than innovation activities, and numerous studies have examined which organisational factors support productivity and creativity (e.g., Thompson, 1965; Raisch, Birkinshaw, Probst, & Tushman, 2009; Damanpour & Aravind, 2012).

Secondly, organisations can be seen as consisting of several sub-groups whose interests differ from each other, which may create conflicting ideas or activities within the organisation; therefore, not all organisational subsystems are completely functional. Ranson et al. (1980) suggested that organisations are composed of alternative interpretive schemes, which may become realised depending on dependencies of power and domination and on contextual constraints. These situations are discussed from various perspectives in the studies of multiple organisational logics (Drazin et al., 2004), schemas (Sewell, 1992), and institutional logics (Reay & Hinings, 2009).

Due to these reasons, an organisation's innovation and development activities may comprise of many systems in which different goals are pursued. An example is Daft's (1978) dual core model, in which administrative and professional innovations were created by different persons. It might also be important to take individual motives into account in professional service firms, where employees are usually ambitious, intrinsically motivated, and interact frequently with customers and their own professional institutions (see, e.g., Løwendahl, 2001). Hence, an interesting question is how different employees' ideas become accepted and implemented collectively in a PSF.

Sewell's (1992, p. 19) definition of structures as sets of *mutually sustaining* schemas and resources is useful for identifying different structures. Sewell argued that different systems may be separated from each other by identifying mutually sustaining elements and separating them from different or conflicting elements. For example, the rules and resources in developing administrative and professional innovations in Daft's model are likely to be different, as exemplified by the fact that these novelties were developed by individuals occupying different positions, and different goals were achieved through introducing these innovations.

2.3.4 Individuals and social structure

Theories of social structure discuss the concept of agency, which may help conceptualise flexibility in role structures and the exact meaning of professionals' autonomy. There have been considerable debates in the field of social sciences about the relationship between structure and agency; that is, whether individual action is determined by external (structural) constraints, or whether individuals are free to act as they wish, or even change structures. Although structural change is not a central topic in this dissertation, those viewpoints that examine individuals' ability to influence structures contribute to an understanding of flexibility in structures. Many theorists have adopted an understanding of the mutually supporting role of structure and action, as championed by aforementioned scholars like Giddens (1984), Ranson et al. (1980) and Sewell (1992) and evident in Allport (1962).

Giddens, for example, rejected the notion that structure is synonymous to constraint and argued that structure both constrains and enables action. Individuals are considered to be purposive and knowledgeable agents who (almost) always have a choice in terms of how they act. Giddens claims that constraints do not operate independently of the motives and reasons that actors have for what they do, saying that 'the only moving object in human social relations are individual agents' (ibid., p. 181). Giddens also noted that structures are created, maintained and changed through actions; therefore, the line of causality runs in both directions.

However, Giddens also acknowledged that social structure typically precedes and lasts over the life-time of an individual, and that long-lasting structures are especially hard for an individual to change. Structures also persist, since many actions are routinised and performed without constant conscious considerations of the underlying motives for actions. Sewell (1992) suggests that structures vary in scope and character, which means that some structures may be more easily transformed than others. Structures may be very local, shaping the practices of as few as two persons. They also differ from each other in terms of depth and power. Deep structural schemas are typically pervasive and unconscious, lying beneath a certain range of surface structures (Sewell, 1992). Also Barley and Tolbert (1997) suggested that institutions[7] vary in terms of their normative power and effect on behaviour. Barley and Tolbert argued that variation depends on how long an institution has been in place and on how widely and deeply it is accepted by members of a collective.

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[7] Their definition of institutions is very similar to social structure; that is, 'shared rules and typifications that identify categories of social actors and their appropriate activities or relationships' (Barley & Tolbert, 1997, p. 96).

Taking these notions into account, organisational structures are likely to be less stable than broader societal structures. Although underlying institutional influences may make social structures in organisations more permanent, an organisation is a local, and often rather short-lived, social system. Also, many organisations are constantly evolving (Weick & Quinn, 1999). Therefore, changes may occur more easily and the influence of particular individuals on an organisation's internal structures is likely to be more visible than in many other social settings.

However, in order to change structures, an individual must be able to have a system-wide effect; that is, other individuals need to accept changes and modify their behaviour accordingly. Barley and Tolbert (1997) suggested that change has taken place once the new action is dissociated from any particular individual or circumstance. They noted that a contextual change must often take place before actors will collectively question the existing patterns of behaviour (see also Ranson et al., 1980). Barley and Tolbert also argued that 'while idiosyncratic deviations from scripts occur, perhaps even with some frequency, such random deviations are apt to have only passing impact on social arrangements' (Barley & Tolbert, 1997, p. 102).

Individuals' possibilities to create changes can be addressed through the concepts of agency and power. Agency has been defined as the ability to exercise power, and power is understood as the ability to make a difference or to achieve an output. All individuals possess agency, although it might be limited (Giddens, 1984). Sewell (1992) suggested that *agency arises from structure* in two ways: it arises from the actor's knowledge of the rules and from the actor's control of resources. Sewell suggested that agency is highly dependent on an individual's position, since the occupancy of different social positions 'gives people knowledge of different schemas and access to different kinds and amounts of resources and hence different possibilities for transformative action' (1992, p. 21; see also Ibarra, 1993; Battilana, 2006).

This kind of power can be understood in two ways. Firstly, it can be understood as the ability to exert *some degree of control over the social relations* in which one is involved (Giddens, 1984; Sewell, 1992). In the context of the present dissertation, this kind of agency in innovation and development activities may be understood as the ability to engage in innovative behaviours and make decisions concerning the creation of beneficial novelties (Ibarra, 1993). These actions may take place within existing rules and resources regarding innovation and development activities; these rules and resources may constrain and enable individuals' innovative behaviour differently. The second form of power is the ability to *transform* those social relations to some degree (Giddens, 1984; Sewell, 1992). This form of power is interpreted in the present study as the ability to

modify existing rules and the allocation of resources[8] in innovation and development activities. For example, individuals with managerial authority may decide to centralise innovation and development activities and, in so doing, profoundly change the social structure in innovation and development activities.

2.3.5 Social system approach in exploring innovation and development activities

In summary, innovation and development activities are believed to form social systems, consisting of patterned and interdependent behaviours of individuals that pursue the creation of beneficial novelties (cf. Allport, 1962). These systems are labelled as innovation and development systems. The social structure of such a system is defined as formal and informal principles (that is, rules and resources) that pattern innovative behaviours and make these patterns persistent over space and time (cf. Giddens, 1984). The structures both constrain and enable innovative behaviour, and individuals have certain abilities to shape structures (cf. Giddens, 1984).

There are two reasons why an organisation may include several innovation and development systems with different structures. Firstly, different tasks may require systems with different structures (Katz & Kahn, 1978). Secondly, the divergence of goals in organisations may create competing systems (Ranson et al., 1980). Individual employees may participate in several systems simultaneously (Allport, 1962). Therefore, different systems may be identified based on their goals, interdependent behaviours of organisational members, and underlying mutually sustaining elements of structure (Sewell, 1992).

2.4 Individual-level viewpoints: roles in organisational analysis

In addition to values and norms that are common to all members of a system, structures include rules and resources that enable and constrain individuals differently at different positions (Sewell, 1992). This chapter uses role theories to provide an individual-level conceptualisation of structure and system. Roles are typically defined as characteristic behaviour patterns for individuals occupying certain social positions (Merton 1957). It has been said that individuals participate in the social world by playing roles (Berger & Luckmann, 1966); roles are believed to represent institutional order at the individual level. They are also seen as one conceptual specification of social structure, offering a detailed view of interaction at the individual level (Callero, 1994). In organisation studies, roles

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[8] It should be noted that innovation and development activities, as such, aim to transform 'normal' organisational actions; however, the focus here is on the ability to participate in or transform innovation and development activities per se.

may therefore be seen as a link that connects individual behaviour into a collective, or systemic, level (e.g., Katz & Kahn, 1978).

In this study, the concept of a role is used to address the parts that different organisational members have in innovation and development activities. The role concept addresses both the possibilities for participation and the obligations assigned to individuals. It can also be used to understand the ability of an individual to change his or her participation, as well as the ability to change innovation and development systems more broadly. To elaborate on these issues, role theories are discussed here.

Role theory was originally related to theatrical metaphors, where the concepts of patterned social behaviours, parts/identities, and scripts/expectations have been topical (see, e.g., Goffman, 1959). Thereafter, many different disciplines have contributed to the development of role theories. These theories, which include functional, symbolic-interactionist, structural, organizational, and cognitive role theories, have used and understood the role concepts based on their own premises (Biddle, 1986). Different perspectives vary in terms of whether the concept of a role refers (only) to formal functions of a social entity; whether roles are stable and standardised or evolving, local and negotiated; and whether expectations for behaviour are shared among members of a social entity.

Role concepts have also been used to characterise different aspects of social interaction. For example, Turner (1990, p. 87) identified four types of social roles as follows:

'Social roles are of four types: basic roles, like gender and age roles, that are grounded in society at large rather than particular organizations; structural status roles, like occupational, family, and recreational roles that are attached to position, office, or status in particular organizational settings; functional group roles, like the "mediator" and "devil's advocate," which are not formally designated or attached to particular group positions or offices, but are recognized items in the cultural repertoire; and value roles, like the hero, traitor, criminal, and saint, which embody the implementation or the negation of some recognized value or value complex.'

The present study can be seen to address structural status roles, since innovative behaviours of organisational members are compared to the positions the individuals occupy. 'Position', which is sometimes also referred to as office or status, refers to the parts that people occupy in a social system and that are located relative to each other (Merton, 1957; Katz & Kahn, 1978).[9] Many roles are believed to be linked to positions, and each organisational position may involve

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[9] Some authors have also suggested that an individual may occupy many positions in a single social entity; for example, if 'formal' and 'informal' structures are separated from each other (e.g., Lamertz, 2001).

an array of roles[10] (Merton, 1957). Here, role is separated from position, since a role holds more concrete premises for behaviour. Although the focus on position-related roles suggests that formal organisation is explored, the present study aims to address the actual roles that individuals have, whether they are formally expected or not.

The roles of individuals within an organisation may involve different goals, tasks and social relationships with other organisational members and external stakeholders. This study separates the roles of an individual from each other based on the organisational system or goal to which they are related (cf. Katz & Kahn, 1978, p. 189). For example, a unit manager may have a supervisory role towards his/her subordinates, a production role towards the customer assignments, and a development role with regard to the unit's services. In addition, he or she may have roles that derive from personal ambitions or skill and are not related to the position. For example, a unit manager may be willing to help create an international service offering based on his or her earlier experience.

To enable fine-grained analysis of roles and role structures, role theories are linked to social systems viewpoints. Similar themes are identified in both literature streams, although the level of analysis shifts from collective to individual level; the duality between structure and system can be identified in discussions between role expectations and role behaviour. The dilemma between structural constraints and individual agency is formulated as whether roles are seen as stable, standardised scripts or as evolving and negotiated. Also, divergence in an organisation's goals can be identified in the discussions of role conflicts and multiplicity of roles of a certain position-occupant. The next section discusses these aspects in order to concretise the theoretical framework of the dissertation at an individual level.

2.4.1   Role expectations and role behaviour

Role theories typically separate two concepts – role expectations and role behaviour – that act at different ontological levels. *Role expectations* are viewed as beliefs or cognitions concerning the behaviour of a person occupying a certain role. The expectations are typically held by the individuals who interact with the role-occupant (defined as the role-set), as well as the role-occupant himself/herself (Ashforth, 2001; Katz & Kahn, 1978). Expectations may be articulated or non-articulated and may take the form of norms, preferences and

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[10] The use of terminology differs among studies. Asforth et al. (2000), for example, used the term 'position' and referred to 'role identity' to describe requirements of the position. They also identify different 'subroles' related to the position. Floyd and Lane (2000) used the terms 'primary role' and 'secondary role' instead of 'position' and 'roles'.

beliefs (Biddle, 1986). The expectations may concern the type and amount of behaviour expected; that is, what to do and what to avoid (Ilgen & Hollenbeck, 1991). Expectations also concern the sense of identity related to a role; *role identity* concerns the definition of self-in-role, as manifested by the goals, values, beliefs, norms, and interaction styles of the role-occupant (see, e.g., Ashforth, 2001, p. 28).

Role expectations can be seen as a part of social structure, whereas role behaviour can be attached to actual interaction practices in a social system. Katz and Kahn (1978, p. 189) defined *role behaviour* as 'the recurring actions of an individual, appropriately interrelated with the repetitive activities of others so as to yield a predictable outcome'. They suggested that a social system can be seen as a set of interdependent role behaviours. Whereas role behaviour consists of many specific acts, *a role,* according to this definition, refers to the essential and persisting features in these acts (Katz & Kahn, 1978, p. 189); that is, characteristic behaviour patterns for persons occupying certain social positions (Merton 1957). The present study treats innovation and development activities as role behaviours. An individual's role in an innovation and development system may consist of different innovative behaviour types (such as idea generation, development, championing, and application) and decision making related to the creation of beneficial novelties.

In line with the earlier discussion of social structure, role expectations may be seen to persist only through their production and reproduction by individuals in their daily activities. This concerns both the activities of those holding the expectations and the activities of the role-occupant. Katz and Kahn (1978) provided an oft-cited description of how expectations turn into behaviour. According to their model, the individuals in the role-set develop expectations about what the role-occupant should and should not do. *Role-sending* comprises the activities through which the expectations are communicated to the role-occupant. The role-occupant responds to these expectations based on his/her perception of what was sent; that is, based on the *received role*. *Role behaviour*, then, is the outcome of the received role and other factors, such as situational properties, the nature of the task and the individual's previous experiences and motivation (Katz and Kahn, 1978).

In an ideal situation, role expectations are unambiguous and the role-occupant and individuals in the role-set agree on them (Ilgen & Hollenbeck, 1991; Katz & Kahn, 1978). There are, however, several challenges in these processes, deriving from the diversity of organisational goals and substructures, as well as individual motivations discussed earlier (e.g., Goode, 1960). *Role ambiguity* refers to difficulties in understanding how to act in a role; these problems may derive from ambiguous expectations coming from one or more actors in the role-set, a new or changing role, or from difficulties in understanding how to behave according to

expectations. *Role conflict* refers to conflicts between expectations and individuals' own values, conflicting expectations deriving from different actors, or conflicts between expectations and skills. One type of conflict is *role overload,* which comes from difficulties prioritising between different roles, too many expectations, or competition between roles (e.g., Rizzo, House, & Lirtzman, 1970). Individuals may use various tactics to cope with these challenges, from shifting the emphasis between roles to leaving a role altogether. However, since organisational members are dependent on each other, the overall social structure sets some limits to these coping tactics (Goode, 1960).

Whereas discussions concerning role expectations tend to emphasise external influences on an individual's behaviour, symbolic-interactionist theories, among others, take an alternative perspective. These theories view roles as enabling individual agency, and consider individuals as creating and using roles as resources. Roles are viewed as resources through which human agency is facilitated (Baker & Faulkner, 1991). Turner (1962) viewed roles as identifiable and rather stable principles that individuals – especially in informal settings – may take and use when orienting interaction between themselves and others. Callero (1994) suggested abandoning the idea of role expectations altogether and instead viewing roles as cultural objects that role-occupants use to define themselves and other, and as sources for cognitive structures and perspectives in thinking, for acting, and for achieving political ends. Therefore, a role may give an entry to a certain network of interaction and act as a source of control and power; certain actions are possible only for persons in certain roles – for example, only police officers can arrest criminals (Callero, 1994).

The present dissertation views roles as both constraining and enabling individual action (cf. Turner, 1990, p. 87; Mantere, 2008). Therefore, role expectations are seen as an important concept that highlights these characteristics. Current studies differ in terms of whether role-occupants comply with pre-existing expectations or whether individuals shape the expectations themselves. These aspects are discussed below.

2.4.2 Established and emergent elements in roles

In actual organisational life, individuals occupying similar roles engage in different activities and behave differently. Role theories differ in terms of how these individual exceptions are conceptualised. Those scholars who understand roles as formal and standardised expectations often treat individual differences as extra-role behaviour. Other theories acknowledge the influence that individuals have on their own roles, which enables them to understand a broader set of individuals' behaviour as role behaviour. To get an understanding of these differences, both perspectives are viewed briefly below, followed by discussion of an integrative model.

Roles as formal and standardised expectations

The narrowest conceptualisations view roles in an organisation as standardised and formal expectations towards the behaviour of role-occupants. Roles derive from task requirements and explicit rewards and sanctions are used to guide role behaviour. The network of these expectations is seen to form the formal structure of an organisation (Katz and Kahn, 1978). Although formalisation or standardisation is a matter of degree, individuals in organisations are seen to have less freedom to transform their roles to fit to their personalities than those in other social settings (Katz & Kahn, 1978). Many scholars define *in-role behaviour* as performing the explicitly required and rewarded duties of the assigned role (Van Dyne, Cummings, & McLean Parks, 1995).

These scholars have addressed situations in which individuals do more or less than expected, and in which the behaviours vary between occupants of similar roles, either as errors, as part of normal variability or as extra-role behaviour (Turner, 1990). For example, behaviour that is voluntary, not explicitly rewarded, but can potentially benefit the organisation has been considered e*xtra-role behaviour* (Van Dyne et al., 1995). Other researchers share similar ideas but suggest that individuals also have positions and roles in informal structures. Lamertz (2005), for example, used the concepts of formal and informal roles instead of in- and extra-role behaviour.

In many organisations, however, it is challenging to identify the boundaries between in- and extra-role behaviour, as well as between informal and formal structure. As discussed earlier, informal and formal structures may be intertwined to such an extent that it might be superficial to strictly separate these two (Blau & Scott, 1962). Hence, also role expectations may involve implicit norms and beliefs (e.g., Floyd and Lane, 2000). In addition, perceptions about whether a certain task is within the expected behaviour vary between the occupants of similar roles (Morrison, 1994); some behaviour may be counted as in-role for some employees, but not expected from others. Roles may also evolve in such a way that extra-role behaviour can become an in-role expectation over time (Organ, 1997; see also Furtmueller, van Dick, & Wilderom, 2011).

Individually shaped roles

Other scholars acknowledge that individuals shape their roles. A modest version is to suggest that individuals have some degree of freedom within the role to decide how to perform the expected behaviour (Turner, 1990). Also more emphasis can be placed on individuals' intentional actions; consequently, roles are no longer viewed as unified and similar for all role-occupants. Actualised roles are believed to reflect norms, attitudes, contextual demands, negotiation, and understanding of the situation to which the role behaviour is related (Biddle,

1986). The influence that individuals have on their roles is addressed through the concepts of role-making (Graen, 1976), expectations enactment (Fondas & Stewart 1994), role innovations (Schein, 1971; Katz & Kahn, 1978), job crafting (Wrzesniewski & Dutton, 2001), and idiosyncratic jobs (Miner, 1987).

Graen (1976) suggested that instead of roles being fixed beforehand and filled with the most suitable new recruits, role-making processes take place as individuals are socialised into the organisation. In these processes, individuals learn, negotiate, accept, and modify the patterns of behaviour that are expected from them (Graen, 1976). Individuals may intentionally initiate opportunities to shape role expectations, and expectations may be changed as the result of negotiations and feedback between the role-occupant and role senders. For example, a newcomer may test the strength of the expectations by deviating from expectations. This may result in either sanctions or fewer expectations towards the role-occupant's behaviour (Fondas & Stewart 1994; Graen 1976).

These processes may take place throughout one's work career, not only in the recruitment and socialisation phases (Fondas & Stewart, 1994; Wrzesniewski & Dutton, 2001). Wrzesniewski and Dutton (2001) suggested that job crafters may creatively shape their work whenever opportunities arise. However, these opportunities depend on the task interdependence between the job crafter and his/her colleagues, as well as on the closeness of supervision.

These processes result in individually shaped roles, which are sometimes labelled as idiosyncratic jobs (Miner, 1987). The influence of individuals on roles may be radical, as Turner noted: 'while all role relationships are subject to some negotiation, these are instances in which negotiation is carried to the point of creating a new position rather than simply adapting an existing one' (Turner, 1990, p. 91). Turner also pointed out that since individual roles are carried out in relationship to other roles, a change in one role leads to changes in the system of roles (Turner, 1990). Individuals may also have an intentional influence on the broader structure. For example, Baker and Faulkner (1991) suggested that individuals may use roles to create completely new positions and social structures. Wrzesniewski and Dutton (2001) suggested that a work group can collectively modify its work; they termed this as collective job crafting.

It should be noted that most of these studies deal with change in a more or less local context. These idiosyncratic changes are different from *role change* at a wider societal level, where the expectations attached to a certain social role are changed concerning all role-occupants (Turner, 1990, p. 88). However, individual modifications may initiate role change over time, if idiosyncratic behaviours become expected from all role-occupants (Turner, 1990).

The above-mentioned literature appears to include two slightly different conceptions of a role. Firstly, a role may be perceived as a broad concept that refers to rather stable principles for behaviour that many individuals enact, such as the role of a mother or a judge. Depending on the context, individuals may either choose which roles to perform and use the roles creatively (e.g., Baker & Faulkner, 1991), or conform to roles designated to them. However, since role is understood as a general concept, individual role-occupants are less able to change the basic principles of the role. The second perspective treats role as a local concept, manifesting the actual behaviour of an occupant of a certain position. Roles are acknowledged as unique constellations linked to individual persons acting in specific positions, rather than general principles linked to widely recognised roles (see, e.g., Turner, 1962 for comparison of these perspectives).

Here, the latter conception of a role is applied: organisational members' roles in innovation and development activities are viewed as more or less unique sets of behaviour rather than principles that are stable and explicitly recognised at the societal level. Actualised roles in innovation and development activities may include formal expectations and idiosyncratic behaviour. Individuals may also have created the role from scratch. Even though organisational roles often include formally expected elements, they may be easily shaped, especially if they are explicit and local (cf. Sewell (1992) on local structures). However, expectations deriving from wider institutions, such as professions, may influence these expectations, giving them a more enduring nature.

The present study uses Ilgen and Hollenbeck's (1991) model in order to take into account both pre-existing and individually shaped role elements. Ilgen and Hollenbeck suggested that an individual's role includes both established and emergent task elements, where the former refers to standardised features and the latter to individually negotiated elements. *Established task elements* are created by prime beneficiaries (such as a firm's owner), and together they constitute what Ilgen and Hollenbeck defined as *a job*; that is, 'a set of task elements grouped together under one job title and designed to be performed by a single individual' (1991, p. 173). These elements are objective, relatively constant and independent of individuals occupying the role.

However, established elements cannot take into account all of the tasks that are needed in an organisational environment, which is typically complex, dynamic and subjective. Hence, Ilgen and Hollenbeck suggested that jobs are supported by *emergent task elements,* which are subjective, personal and derived from various social sources. These elements are created by the role-occupant and by the other individuals in the role-set. Hence, the role of an individual may include both formal job and emergent elements. Ilgen and Hollenbeck argued that emergent

elements may also transform into established task expectations regarding all role-occupants, if consensus about the importance of these tasks is reached in the role-set (Ilgen & Hollenbeck, 1991).

Ilgen and Hollenbeck argued that the emergent and established elements may occur in different combinations in different contexts. In a bureaucratic context, where uncertainty is low, the roles may be formalised to a large extent, leaving little room for individual modifications. In uncertain contexts, there may be only a few established tasks, and individuals may dynamically decide and develop the tasks to be performed (Griffin, Neal, & Parker, 2007). This is likely to be the situation in the context of the present study, where innovation and development activities are explored. Ilgen and Hollenbeck (1991) also noted that the roles of individuals having similar jobs may be very different due to the creation of emergent elements based on personal and situational characteristics. This concept is illustrated in Figure 4 (adapted from Ilgen and Hollenbeck, 1991, p. 175).
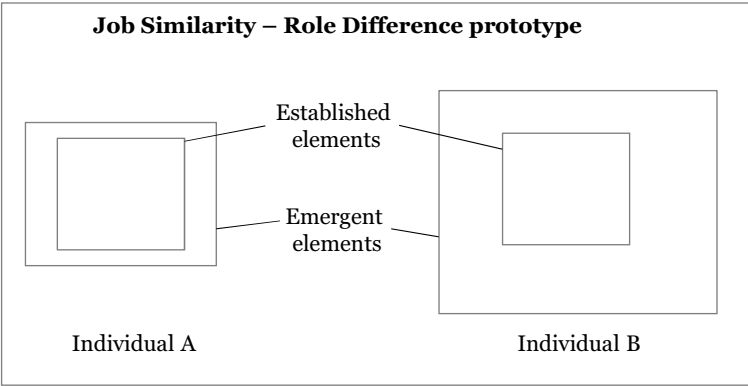
Figure 4. Different roles of individuals having similar jobs

Figure 5 categorises the differences between the existing role concepts based on formal–informal elements and individually shaped roles. The figure shows that role concepts vary in terms of whether informal behaviours are taken into account as role behaviours and whether individual modifications are understood as role behaviour. The arrows indicate that informal behaviour, as well as individually negotiated emergent elements, may become institutionalised expectations over time.

All position-occupants   One position-occupant

(Formal) role *(Katz and Kahn, 1978)* Established role elements *(Ilgen and Hollenbeck, 1991)* Role-taking *(Katz and Kahn, 1978)*	Idiosyncratic role *(Miner, 1987)* Role-making *(Graen, 1976)*
Informal role *(Lamertz, 2005)* Extra-role behaviour *(Van Dyne et al., 1995)*	Job crafting *(Wrzesniewski and Dutton, 2001)* Emergent role elements *(Ilgen and Hollenbeck, 1991)* Extra-role behaviour *(Van Dyne et al., 1995)*

Formal (left margin, upper)
Informal (left margin, lower)

Figure 5. Different role concepts identified in the literature

2.4.3 Role approach in exploring innovative behaviour

To summarise, the present study explores innovative behaviour through role concepts. Roles are considered as characteristic behaviour patterns for persons occupying certain social positions (Merton, 1957); in the present study, roles refer to the *actualised behaviour patterns* of the role-occupant rather than only a priori designed elements. Roles comprise role behaviours – that is, the recurring actions of an individual – which in organisations are often related to the accomplishment of a particular goal.

This study uses role expectations as the main perspective to social structure; *role expectations* are understood as those rules and resources that enable and constrain the role-occupant's behaviour and define that person as part of the social system. These expectations are being produced and reproduced in the daily behaviour of the role-set and the role-occupants. At collective level, the phenomenon of interest is conceptualised as *role structure,* which is defined as consisting of interrelated role expectations that pattern the role behaviours of the members of the social system. These expectations may derive from external requirements or from an individual's own influence; that is, they may include both established and emergent elements (cf. Ilgen & Hollenbeck, 1991). In order to take emergent elements into account, role structures are understood here to address *those actions of a role-occupant that are acknowledged and accepted in the role-set*.

The established elements may be seen either as formal aspects of structure (Blau & Scott, 1962) or as more universal and institutionalised structural qualities. Here, established elements are seen as those expectations that concern all role-occupants. Although they may be formalised to large extent, informal rules and resources are also likely to exist. Emergent elements are seen as individually shaped elements that are likely to be informal at first, but might also transform into formal expectations towards the specific individual (that is, an idiosyncratic job) (Ilgen & Hollenbeck, 1991).

Hence, 'extra-role behaviour' is understood differently in the present study than it is in earlier literature: since roles include elements that are not formally expected or rewarded, such behaviour cannot be termed as extra-role (in Ilgen and Hollenbeck's terms it might be seen as extra-job behaviour). However, behaviour that is not collectively recognised or accepted can be seen as something external to role behaviour. Also, new actions that are not yet recognised and negotiated in the organisation may be seen as extra-role behaviours. This study uses the following terminology. A situation in which an individual acts in a deviant and novel way is considered as extra-role behaviour, and the role-set determines whether the behaviour becomes accepted as role behaviour. If the behaviour is not accepted, it can be seen as *role-breaking behaviour* or simply as extra-role behaviour. If the behaviour is accepted, it can be seen as *role-making behaviour*,[11] which may either modify existing role or create a new role. In this case, individual has created a local modification to the role structure.

2.5 Summary of the theoretical framework

To sum up, the topic of the study is theoretically conceptualised as the *role structure* in innovation and development activities in professional service firms. The main concepts used in the study are shown in Figure 6 and summarised below.

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[11] This concept is used in a slightly different way from Graen's (1976) concept of role-making, which was predominantly attached to individuals' attempts to modify his/her current roles.

DIMENSIONS OF THE PHENOMENON
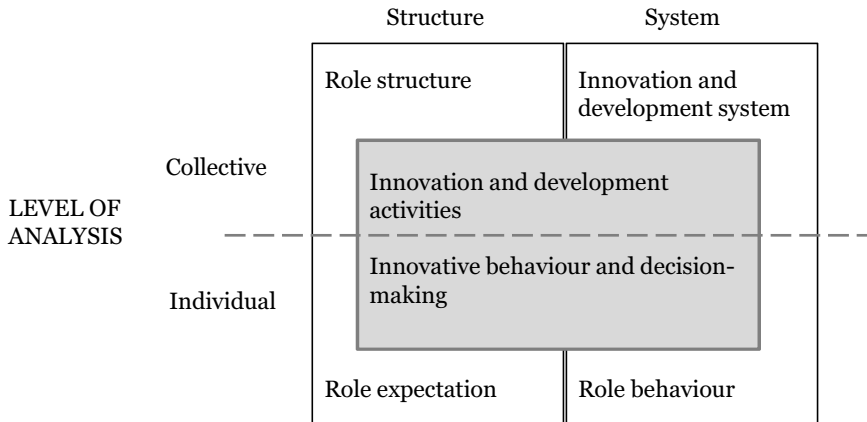
Figure 6. Summary of the theoretical framework

A PSF is approached as a social system, which is embedded in broader societal systems, and which itself consists of multiple, integrated and overlapping systems with different structural properties. A social system is considered to consist of patterned and interdependent behaviours of individuals that pursue certain common goals (Allport, 1962). Social structure is defined as those structuring properties (rules and resources) that pattern these actions and makes them persistent over space and time (Giddens, 1984).

Although collective level is the main phenomenon of interest, an empirical understanding of the phenomenon will be constructed from reports at an individual level. The manifestations of the structure at an individual level are hence explored through role concepts. Roles are defined as behaviour patterns that are characteristic of individuals occupying certain social positions (Merton 1957). Roles include two dimensions: *role behaviours;* that is, the recurring actions of an individual, which in organisations are often related to the pursuit of a particular goal; and *role expectations*; that is, those rules and resources that enable and constraint the role-occupant's behaviour and define him/her as a part of the social system. *Role structure* is defined here as consisting of interrelated role expectations that pattern the role behaviours of the members of a social system. Thus, the study of role structures addresses the acknowledged and accepted behaviours of different organisational members.

Innovation and development activities are defined as purposeful activities that aim to create *beneficial novelties*. At an individual level, innovation and development activities are seen to include *innovative behaviour and decision making* related to the creation of beneficial novelties. These activities are studied as role behaviour. Innovation and development activities can be seen as forming one or several social systems that consist of individuals' interrelated actions in

the creation of beneficial novelties; these systems are termed here as *innovation and development systems*. The members of such systems share similar goals and expectations towards each other's behaviour in pursuing the goals. This study focuses on the role structures in these systems.

An individual organisational member may have a role in many systems simultaneously. Insofar as individuals have agency in relation to structures, it is also worth noting that individuals may modify the role structures in innovation and development activities. They may pursue different goals in improving the organisation's life, which means that innovation and development activities in an organisation may include multiple, integrated or isolated systems with different structural properties. These issues are studied with the help of the concept of the duality of structure (Giddens, 1984), which refers to the fact that structure does not exist without individuals' reproduction of it in their daily activities. Hence, individuals may act according to current expectations or modify those expectations through their behaviour. These actions may result in changes in the individual's own role or changes at the level of the whole structure. However, as role behaviours are interdependent, changes always influence other individuals in the system as well, which probably makes structures less easy to shape.

3. Research design

The study was conducted as a multiple case study that explored five professional service firms. These firms turned out to include several innovation and development systems. Therefore, the study is an *embedded case study* (Yin, 1994)*,* in which innovation and development systems are considered as sub-cases that are embedded in their organisational context. The primary empirical material consists of organisational members' interviews at different organisational levels. A total of 54 interviews were conducted, supported by secondary data such as documents and workshop materials.

This chapter starts by presenting and justifying the research questions, before moving on to a discussion of ontological and epistemological groundings. The case study design and the empirical data are then presented. The chapter ends by describing the data analysis process in-depth so that readers can evaluate the quality of the study.

3.1 Research questions

The study aims to answer the following research question: *What is the nature of role structures in innovation and development activities in a professional service firm?* Four sub-questions were formulated. The first question explores the types of role structures in innovation and development systems in the case organisations. The second question addresses individuals' ability to influence roles and role structures, while the third examines the coherence of the role structures within an organisation. Finally, the fourth question aims to explain why the structures are as they are. Although the focus is on collective-level phenomena, the collective level was seen to consist of patterns in individuals' behaviours. Accordingly, each question was also operationalised to address individuals' behaviour. These questions are briefly discussed below.

RQ1: What kind(s) of role structure(s) exist in innovation and development activities?

This research question is the broadest one: as a research task, it dealt with (a) identifying innovation and development system(s) within a PSF; and (b) describing the dispersion of roles in these system(s). Simply put, the aim was to find out *who* does *what*. At the individual level, the question was formulated as follows: *How is an individual employee expected or able to participate in different kinds of innovation and development activities?*

RQ2: How flexible are the role structures?

Flexibility refers to the extent to which role structures are stable and predetermined or susceptible to individual modifications. At the individual level, the question was formulated as follows: *To what extent are organisational members able to shape their own roles or have larger impact on role structures in innovation and development activities?* The question addressed individuals' agency in relation to the structure. Since the study was a cross-section of the current situation in an organisation, the aim was not to explain *structuration* per se (that is, how structure evolves over time), as this would have required longitudinal process perspective (Barley & Tolbert, 1997; Pozzebon & Pinsonneault, 2005). Flexibility was evaluated by exploring the differences in general expectations and individuals' behaviour, differences between roles of individuals acting at similar positions, local variations in structures, and interviewees' descriptions of the changes in roles and role structures in an organisation.

RQ3: How coherent are the role structures?

The motivation behind this research question was to understand whether innovation and development activities in an organisation were guided by common, shared goals, such as strategy (see, e.g., Sundbo, 2001), or whether there were competing sub-groups that were pursuing their own agenda (see, e.g., Ranson et al., 1980). In cases where several innovation and development systems were identified, the aim was to explore the autonomy of the systems and the linkages between systems. At the individual level, the question was formulated as follows: *To what extent do organisational members share similar orientations (goals and role expectations) in innovation and development activities?*

RQ4: What explains the nature of role structures?

This question addressed explanations for the identified role structures. The aim was to identify local (that is, context-specific) explanations for the role structures, and to evaluate whether there were more general principles underlying the dispersion of roles. At the individual level, the question was formulated as

follows: *What explains an individual's role(s) in innovation and development activities?*

Through these four questions, the study aimed both to understand the current situation in the organisations and to identify explanations for the situation. Below, ontological and epistemological viewpoints underlying the study are discussed in order to evaluate how such knowledge may be acquired.

3.2   Ontological and epistemological groundings

Scientific research may focus on several dimensions of social world, such as the actions of individuals or groups; beliefs and motives that underlie actions; the processes through which certain beliefs and concepts become objectified and accepted as natural attitudes; or the ways in which beliefs and actions change over time. The research problem can be linguistic (that is, how the world becomes subjectively interpreted or constructed through language), or 'realistic' (that is, the characteristics of the social world to which the language refers). Philosophical perspectives vary in terms of whether linguistic and non-linguistic phenomena are acknowledged, and whether it is considered as possible or meaningful to acquire knowledge of these phenomena. Scientific schools of thought also differ over whether knowledge is seen as objective and independent of the observer, in which case the researcher aims to *identify or discover* social phenomena; or subjective, in which case the researcher *creates understanding* through the research process.

This study is in line with critical realism, which is defined as a meta-theoretical paradigm 'focused on explanations underlying "generative mechanisms or structures" that shape corporate agency and the social relations that it reproduces and transforms' (Reed, 2005, p. 1623). The aim is to explain behaviour, rather than forecast, describe or deconstruct it (ibid.). The present study considers role structures as underlying structures that pattern the behaviour of organisational members. Role structures are seen to consist of rules and resources underlying individuals' role behaviour in certain social context. The study focuses on identifying and describing these structures, and on explaining why these structures are as they are.

Critical realism is said to follow objectivist ontology but subjectivist epistemology. *Objectivist ontology* refers to the belief that the reality exists objectively; that is, independent of the knowledge of the researcher. It is therefore considered meaningful to explore and explain the patterns and regularities in this reality. A realist, however, acknowledges that social mechanisms are socially constructed and do not exist independent of social actors (Fleetwood, 2005; see, e.g., Reed, 2005). Role structures, for example, are contextually bound and dependent on individuals' interpretations, actions and meanings of those actions.

These structures may be implicit, since individuals may act based on their practical consciousness (Fleetwood, 2005).

The present study considers role structures as 'real' and existing independent of the *researcher's o*bservations. Therefore, the researcher *aims* to create objective and truthful descriptions of the reality by identifying these mechanisms and structures and bringing them to scientific discussions. What makes this complex is that the underlying structures are not directly accessible to sense experience. A central question then becomes how to obtain knowledge of underlying structures.

A critical realist suggests that structures can be identified by observing the empirical effects they generate: a structure is believed to exist if it explains empirical phenomena, such as role behaviour (Bhaskar 1975; see Töttö 2004). To form this explanation, the link between mechanisms and effects need to be theoretically constructed and modelled (Reed, 2005). In such a process, *best explanations* for empirical phenomena are sought by combining empirical evidence with theoretical models. This kind of research design is sometimes referred to as a retrospective design (Reed, 2005) or as an abductive design (Dubois & Gadde, 2002).

In order to identify explanations for behaviour, it is necessary to demonstrate the causal relationships between behaviour and mechanisms that explain the behaviour. It is important to note that the conception of causality in critical realism is different from positivism, for which universal laws are believed to exist. Social phenomena are typically context-specific and complex, so mechanisms do not necessary always create similar effects; instead, they exist as a potential that is realised only under certain conditions (Kakkuri-Knuuttila & Vaara, 2007). For example, role structures may become realised as role behaviour only in certain situations where possibilities for behaviour exist. Causality in critical realism is sometimes referred to as generative causality; it refers to the realisation of structural qualities of a phenomenon, which generates some empirical effects (Töttö, 2004, p. 254).

Causality can be identified by analysing why certain events took place instead of others (for example, why managers innovate but professionals do not?) and whether certain events take place without underlying mechanisms (for example, would managers innovate without authority and resources they have? Do the professionals possess similar resources?) (Kakkuri-Knuuttila, 2006). This kind of understanding of causality makes it possible to explore explanations for local and unique events.

Since the focus is on explaining social behaviour and its underlying reasons, the actors' motives and goals, as well as the actor's understanding of how the goals can be reached, are an important part of forming the explanation. The rules and resources that form role structure may be seen as such reasons. Hence, an *interpretative approach* plays some part in the empirical analysis. Interpretation

is often connected to ontology and epistemology, where knowledge is thought to be subjective, and negotiated and constructed in a dialogic research process between the actor and the researcher (Schwandt, 2000). However, other interpretive traditions aim to create an objective picture of the actors' reality; although a certain phenomenon has subjective meaning for the actors in a social world, a researcher can approach these meanings as 'real' entities that exist in the social world (Kakkuri-Knuuttila, Lukka, & Kuorikoski, 2008; Maxwell, 1992; Schwandt, 2000). Therefore, interpretative approaches and critical realism may be based on similar ontological and epistemological assumptions and supplement each other (Kakkuri-Knuuttila et al., 2008; see Morris, Kwok Leung, Ames, & Lickel, 1999; Roth & Mehta, 2002).

Attempts to explain and to understand roles and role structures are seen as complementary in this study. Emic perspectives – that is, understanding how individuals themselves understand and give meaning to their actions – help explain the role structure in a certain social context, and are used to support the construction of a theoretical understanding of the phenomenon (Kakkuri-Knuuttila et al., 2008; Kakkuri-Knuuttila, 2006; Morris et al., 1999). Etic perspectives, which are formed through theoretical constructs and models, are likely to reveal underlying reasons that social actors may not perceive. Therefore, theory has an important role in explaining empirical observations.

Subjectivist epistemology (or 'modified objectivist', Healy & Perry, 2000) refers to acknowledging that the theoretical models are socially constructed models themselves and are influenced by the researchers' education and experiences. This means that these models may be inaccurate in describing reality and must always be open to revision and reformulation (Kiikeri & Ylikoski, 2004; Reed, 2005). The concept of role structure created in this study and presented in Chapter 2 is constructed by the researcher, and may require critical evaluation in future studies.

Figure 7 shows how the relationships between different phenomena are modelled in the present study. Role structure is seen as socially constructed underlying structure (Fleetwood, 2005) that has real impacts on behaviour. However, as a socially constructed structure, role structure exists only insofar as individuals reproduce it in their daily activities; therefore, causality runs in both directions (Giddens, 1984).

Figure 7 also suggests that, besides role structures, many other mechanisms may influence the innovative behaviour of an organisational member. Innovativeness, as the ability and motivation to create beneficial novelties, may be counted as one such factor (see Figure 3). All individuals are considered to be able to act creatively, although personal factors can have an influence on this ability (see, e.g., Amabile, 1983, 1988; Woodman et al., 1993). The extent to which innovativeness becomes realised may depend on the context, such as role

expectations and opportunities in the environment. Together, these mechanisms are believed to enable and constrain individuals' innovative behaviour. Individual innovativeness is also likely to have an effect on role expectations, and vice versa, if individuals are able to have an effect on their roles.
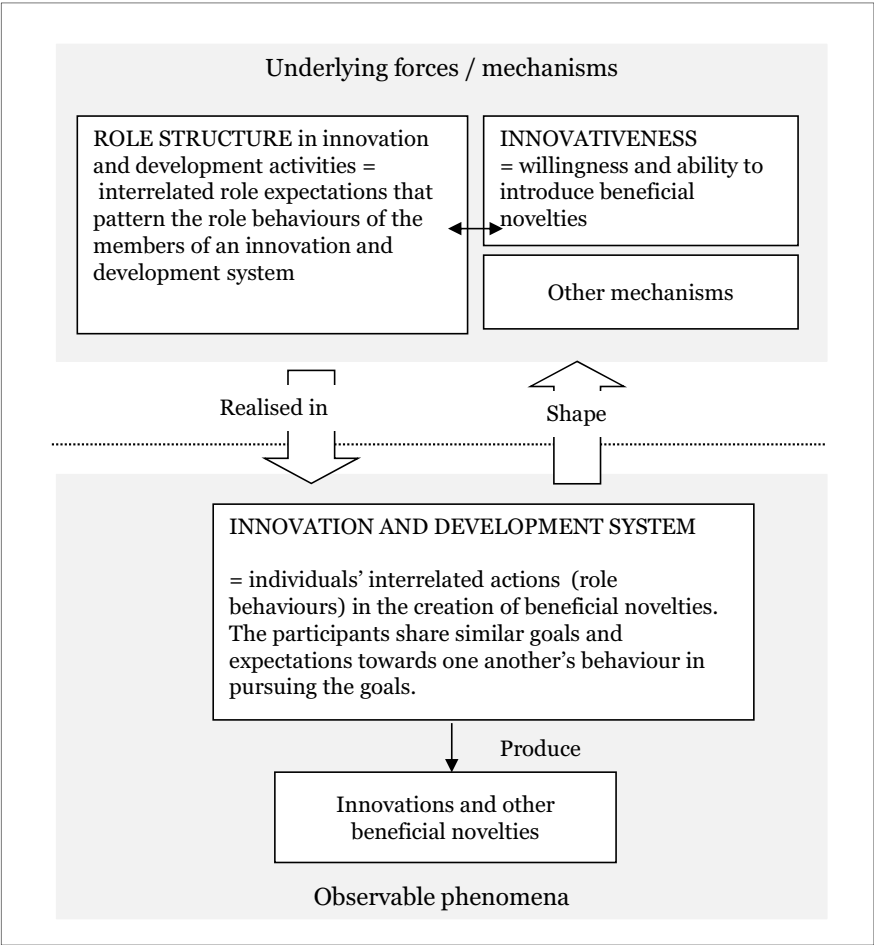
Figure 7. Relationships between underlying mechanisms and behaviour

3.3   Case study approach and empirical data

This study has used a qualitative case study approach to explore the research questions in five professional service firms. The case study approach makes it possible to gain novel insights from the empirical world, as opposed to testing and validating existing theoretical models. It also makes it possible to gain a rich understanding of the dynamics of certain phenomena in a specific context, which is important due to the context-dependent nature of social phenomena (Dubois & Araujo, 2004; Yin, 1994).

Case studies can be linked to various research methodologies. Stake (2005) separates intrinsic and instrumental interests in case study research. The primary aim of an intrinsic study is to understand the nature of the phenomenon in the specific context in-depth rather than to make a generalisable theoretical contribution. This kind of interest is typical in interpretive or constructivist case studies, which often aim to describe how the social actors themselves understand a specific phenomenon in a specific context (Ahrens & Dent, 1998; Dyer & Wilkins, 1991; Stake, 2005). The aim of an instrumental case study is to understand and explain a more or less general empirical phenomenon by exploring its manifestations in different contexts. This approach is typical in positivist and realist studies, and a comparative multiple case study approach is often used to develop new theoretical insights (Eisenhardt, 1989; Yin, 1994). Cases can be examined in-depth, but rather than being the focus of the study on their own right, different cases act as examples that help provide an understanding of the phenomenon.

This dissertation can be understood as a multiple case study with a primarily instrumental interest; the aim is to understand and explain the characteristics of role structures in professional service firms by exploring the structures in several organisational contexts; cases act as 'instruments' in understanding the empirical phenomenon. However, although the study aims to make a theoretical contribution, it does not aim to identify universal laws: each case can be seen as a more or less unique example of the role structures in innovation and development activities in professional service firms. By comparing the structures in different case contexts, the study provides insights into both the case-specific and common characteristics of these structures.

3.3.1 Case selection and description of the case organisations

The empirical material derives from five firms that provide professional business services in Finland. The firms were selected using theoretical sampling in order to include cases that are interesting in light of the research questions: the firms conducted business in different professional fields, but each had a reputation for being quite innovative in their own field. This sampling tactic ensured the identification of insightful innovation and development activities and provided opportunities to compare these activities across professional fields. The organisational structures and service characteristics were quite similar from one firm to another, which made comparisons easier. Each firm offered different kinds of services, ranging from services that were highly knowledge-intensive and developed actively to more stabilised professional services.

Defining the cases was not a simple task – rather, it formed a substantial part of the research process (Ragin, 1992). In the beginning, the cases were defined as those Finnish organisations or organisational parts that provide professional

business services (hereafter referred to as 'case organisations'). During the research process, the innovation and development activities were identified to form several more or less interlinked innovation and development systems within each case organisation. These systems consisted of interconnected role behaviours of individuals that shared similar goals and expectations towards each other's behaviour in pursuing the creation of beneficial novelties.

The *actual cases* (or sub-cases) were soon defined *as the innovation and development systems* in these organisations. The two units of analysis that were identified were the organisation and the system. Therefore, the study can be referred to as an embedded case study (Yin, 1994), where the innovation and development systems are embedded in their organisational context. The system-level analysis turned to be even more interesting than organisation-level analysis, which meant that it was given slightly more emphasis in the study. The sub-cases in each organisation are described in the findings.

Table 1 briefly describes the case organisations and their firm contexts. All the firms were large or medium-sized. Two were parts of large international companies, and the remaining three were domestic but had foreign subsidiaries. Three case organisations conducted business in the construction industry: ArcCo provided architectural services, EngiCo offered engineering design and consultancy services, and CoCo specialised in construction consultancy services. AdviCo was a part of an international accounting and advisory firm, and MarCo was a part of an international advertising agency. Case organisations were limited to those parts of the firm that conducted business in or from Finland: some export activities were included. In AdviCo, only certain units in the Finnish firm were included: traditional accounting services were excluded from the study.

The fact that two firms (EngiCo and CoCo) belonged to the same corporation made it possible to evaluate the influence of corporate strategies and policies to innovation and development activities. However, the study was limited to understanding and explaining role structures within a case organisation; corporate headquarters and international counterparts were taken into account as contextual factors that may influence innovation and development systems and their structures.

Table 1. Description of the case organisations and their firm contexts

Firm	Nature of the firm's services	Firm's context	Firm type	'Case organi-sation' within the firm	Size of the case (staff, c.)	Organisational structure of the case organisation
ArcCo	Architec-tural and design services	Single firm	Professio-nal partner-ship	Firm	80	Six units, organised around service/ customer type
MarCo	Marketing communi-cations services	Part of an inter-national company	External ownership	Firm	50	Three units organised around service type
AdviCo	Accounting and advisory services	Part of an inter-national company	Classic 'profes-sional partners-hip'	Advisory services (three units)	170–180	Three units organised into 3–10 teams based on service type (incl. teams in different geographical areas)
EngiCo	Engineering design and consultancy services	Part of a domestic corpo-ration	External ownership	Firm	120	Four units organised into 3–4 teams based on service type (incl. teams in different geographical areas)
CoCo	Construc-tion consultancy services	Part of a domestic corpo-ration	External ownership	Firm	200	Three units (incl. teams in different geographical areas)

3.3.2 Data collection and empirical data

The study was a cross-section of the current situation in the case organisations (this is also referred to as a snapshot study (Jensen & Rodgers, 2001)): the primary data was collected from the case organisation at a single point in time. Depending on the research tradition, empirical data in case studies may come in many forms, such as interviews, observations, documentations, archival records, and physical artefacts (see also Piekkari, Welch, & Paavilainen, 2009; Yin, 1994). In the present study, an interview method was chosen as the primary data collection method due to the nature of the research questions, the scope of the theoretical framework, and the limitations in the research project where the data was to be collected. The interview method was considered as the most appropriate method to study role structures in multiple case study design. Interview data provides insights into organisational members' understanding of and opinions about innovation and development activities, as well as their motives for their actions (see, e.g., Seidman, 2006). Secondary data such as documentations and workshop memos were used to validate interview data.

The observation method could have provided insight into the actual practices taking place in an organisation. However, there are several reasons why it was not chosen. Firstly, the study aimed to compare the findings in different organisational settings, and observing many settings was not possible due to time limitations. This method may have been more appropriate in a single-case study. Secondly, it was considered challenging to observe innovation and development activities, since especially in service firms they do not take place in formal settings or social encounters that could be easily observed. Also, the broad scope of the study (including all kinds of innovation and development activities at all organisational levels) was likely to constrain insights that would have been gained through observation. Thirdly, short-term access to organisations (in the form of interviews) was easier to negotiate with the organisational contact persons.

The study builds a picture of role structures in the case organisations through interviewees' description of what happens in their own work context, and their understanding of what happens in other parts of the organisation. The selection of interviewees in each case organisation was carried out in a way that maximised the potential to gather information about different kinds of innovation and development activities from different organisational levels. However, it is not possible based on this data to create validated generalisations of *all* innovation and development activities within a case organisation. Other role structures may have been identified had it been possible to gather data from every organisational member within the case. The instrumental case study approach in this dissertation means that data from individual cases is used to explain typical role structures in the professional business service organisations.

The interviewees were chosen carefully with a contact person from the firm, and between nine and 13 interviews were conducted in each firm. Since the number of interviews was limited, three units in each organisation were selected as samples that represent typical situations in the case organisation. Interviewees were selected from the top managerial level, the unit level, the project/team level and the level of grass-root professionals. A development manager was also included, if such a position existed. The contact person was asked to select interviewees with diverse opinions and attitudes. It is possible that the sample was biased towards those persons who had positive attitude towards innovation and development activities. To minimise these possible biases, interviewees were asked to describe the activities of their colleagues and the general atmosphere towards novelties in their own work context.

The interview themes were derived from theoretical understanding of the phenomenon, as well as from earlier understanding of the case organisations. The interviews were semi-structured: open-ended questions related to general themes were discussed with all interviewees (see, e.g., Fontana & Frey, 2005). The aim of this design was to ensure that main themes were discussed with each interviewee,

in order to compare different viewpoints across positions and organisations. However, it was considered very important to pay attention to the uniqueness of the context and to enable new themes to emerge during the interviews. Before the data collection took place, the nature of the innovation and development activities was not yet known, which meant it was important to ask open questions and build on what the interviewee had said.

The interview questions and the language used in the interviews were checked beforehand in preliminary interviews with the organisational contact persons to fit the language to the context. For example, many interviewees did not use the term 'innovation', which meant they would probably not have recognised any innovation activities in their firm. Hence, terms like 'renewals', 'novelties', or 'development activities' were used instead. Also, preliminary understandings of innovation and development activities and different positions were formed based on the contact persons' interviews, and questions were tailored to fit the position of each interviewee and his/her experience of the themes.

The interviewees were sent a short description of the themes and objectives of the research prior to their interview. Each interview lasted approximately 1.5–2 hours. An example of an interview guide is shown in Appendix 1. After presenting the research project to the interviewee, the interviewee was asked to describe his/her work and provide an overview of the organisation. Interviewees were then asked to describe novelties created in their organisation and the nature of innovation and development activities. Supporting questions were asked if the interviewee did not recall any activities. The interviewees were then asked to describe who was involved in these activities and how the interviewee himself/herself had participated. They were also asked to describe the management of these activities, and the factors that enhance or restrict them.

The interviews were transcribed and the resulting texts were used in the data analysis. Rather than being objective facts, this kind of data represents interviewees' subjective interpretations of organisational phenomena. Two potential quality threats can be discussed. The first is whether the interviewees' interpretations correspond to reality, and the second is whether the interviewees gave their honest opinions. The first issue was not seen as a limitation in the study, since a social structure is seen to exist in the actors' minds as schemas and resources (Sewell, 1992). The interviewees' understanding of the situation is believed to form the phenomenon of interest in this study; interviewees are guided by their interpretation of the situation, which form the socially constructed role structure that is investigated here. In that sense, the interviewees cannot be wrong, at least not when describing their own perspectives.

However, considering the objectives of critical realism, a problem lies in the limited nature of explicit or discursive knowledge of social actors. They may act without consciously considering the rules and resources underlying their actions

(Giddens, 1984), which means that the role expectations may not be consciously considered or articulated. In addition, an interviewee may understand his/her own part but not see the overall structure (e.g., Allport, 1962), and different individuals may have different understanding of the expectations related to their own roles and to the roles of others.

Both challenges – that is, limitations in the interviewees' discursive knowledge and truthfulness of their stories – were approached by using multiple perspectives in interviews, multiple informants, and comparing interviews with secondary data. Firstly, research themes were approached from different angles: questions were asked about role expectations, concrete examples of innovation and development activities, typical practices in different kinds of innovation and development activities, and exceptions from these practices. Innovation management activities were also discussed in order to understand what is expected from participants and whether the activities were formally managed.

Secondly, interviewees' stories were compared against each other to fill in missing pieces or to explore contradictions in the data. The aim was to form coherent descriptions of the phenomenon by comparing and contrasting these pieces of information in a certain context (cf. Roth & Mehta, 2002). Thirdly, secondary data was used to support insights gained from interviews, and to locate each interviewee in a formal organisational chart. The data included documentation related to an organisation's strategy, descriptions of innovation processes and tools used in those processes (if any), descriptions services and organisational structures, as well as annual reports and some other public material. Tentative findings were also presented to the interviewees in each firm in a workshop that provided the interviewees with an opportunity to complement and discuss the findings. These workshops were used to verify the preliminary findings. Notes from these workshops were also used in the thorough data analysis if they provided additional evidence for the case organisations' situation.

Another important factor that influenced the researcher's interpretations was her long-term relationship with three of the case companies, which extended several years before and after data collection. During this time, the researcher conducted interviews and participated in research workshops in which findings were discussed with the firm representatives. The researcher also participated in four firms in workshops that dealt with findings related to innovation networks, individual innovation processes, and the nature of service innovations in these firms. These interviews and workshops strengthened the understanding of the case contexts. However, the additional interviews have not been analysed in this dissertation since they did not provide much insight into individuals' roles. The longitudinal approach, which could have verified the findings, was not used due to time limitations in the case organisations. Table 2 lists the data sources in each organisation.

Table 2. Empirical data

Case	Primary data (Interviews)	Secondary data	Additional insights into the organisations
ArcCo	2 from top management (CEO + chairman of the board) 3 unit managers 5 project managers 2 professionals 1 development manager **Total: 13 interviews** (in 2006)	• 1 workshop concerning initial findings • Strategy documentation • Documentation of innovation processes • Company and service brochures, presentations, information from web pages	Research collaboration between 2003 and 2010: • Interviews concerning individual innovation processes • Workshops concerning individual innovation processes, innovation networks, nature of innovations in services, etc.
MarCo	2 from top management (CEO + strategic manager: other acted also as a unit manager) 1 unit manager 3 project leaders 5 professionals **Total: 11 interviews** (in 2007)	• 1 workshop concerning initial findings • Information from web pages	Research collaboration between 2004 and 2007: • Workshops concerning individual innovation processes and innovation networks
AdviCo	3 unit managers 5 team leaders/senior professionals 1 junior professional **Total: 9 interviews** (in 2006)	• 1 workshop concerning initial findings • Company and service brochures, organisational charts, annual reports, information from web pages	Research collaboration between 2004 and 2007: • Research reports concerning individual innovation processes
EngiCo	3 at corporate level (same as in CoCo) 1 vice-CEO (acted also as a unit manager) 1 unit manager 4 team leaders 1 project manager 1 professional 1 development manager **Total: 9 (+3) interviews** (in 2007)	• 1 workshop concerning initial findings • Annual reports, information from web pages	Research collaboration between 2004 and 2010: • Interviews concerning individual innovation processes and practices • Workshops concerning individual innovation processes and nature of innovations in services
CoCo	3 at corporate level (same as in EngiCo) 1 from top management (CEO) 2 unit managers 4 project managers 2 professionals 1 development manager **Total: 9 (+3) interviews** (in 2007)	• 1 workshop concerning initial findings • Organisational charts • Annual reports, marketing brochures and presentations, information from web pages	Research collaboration between 2003 and 2010: • Interviews concerning individual innovation processes and practices • Workshops concerning individual innovation processes, innovation networks, nature of innovations in services, etc.

3.4 Analysis and theory construction

Research literature suggests that there are various ways to proceed in case research. Studies that aim to make theoretical contributions are typically described as linear step-by-step processes, although researchers are advised to keep their eyes open to new issues that may emerge from the data and to practice disciplined iteration between steps (Eisenhardt, 1989; Yin, 1994). Some approaches allow and advise researchers to redirect the research questions and redefine the theoretical framework more freely based on the insights gained during the research process (Ragin, 1992). In this kind of iterative case study, the researcher operates freely between the problem formulation, theory and empirical data (see, e.g., Dubois & Gadde, 2002). Dubois and Aurajo described an iterative case study process as follows:

'The task of the analyst is often to progressively construct the context and boundaries of the phenomenon, as theory interacts with method and empirical observations. The research object, its boundaries, context and horizon are thus emergent and unfolding outcomes of the research process. The case study method makes a virtue of these uncertainties as a way to penetrate this obdurate world, rather than seeing it as the default option when a researcher is confronted with distinct but messy and intricate subjects.' (Dubois & Araujo, 2004, p. 210)

Due to the lack of knowledge about role structures in innovation and development activities in PSFs, this study proceeded as an iterative process. The preliminary formulation of the research topic was inspired by earlier empirical studies (see Tuominen, 2005, 2006), and the initial focus was on innovation management practices in this informal context. Based on iteration between data collection and theory, the research interest shifted to role structures that were seen as more fundamental in understanding the organisation of innovation and development activities in PSFs. These kinds of realignments would not have been possible if linear case study processes had been applied.

Based on initial problem formulation, empirical data was collected during 2006–2007 and initial analysis was made after each interview round. The data was collected in a fixed time period due to the timing of the research project. After the initial analysis, the cases were analysed from many different perspectives between 2005 and 2010. Although not all of these perspectives turned out to be relevant, these experiments made it possible to deepen the problem formulation. Thorough analysis of all the cases was conducted in 2010–2011, and the theoretical contributions were formulated during this data analysis and writing process. Appendix 2 presents an overview of the research process.

The analysis can be discussed through Miles and Huberman's (1994) understanding of qualitative analysis as iterations between *data reduction* (e.g., coding), where data is simplified and abstracted; *data displays,* where data is organised into forms that enable comparisons and conclusion-drawing; and *conclusion-drawing and verification,* where regularities, patterns and explanations in the data are explored and verified. The analysis phases that contributed to solving the research question are described below. These components of data analysis took place in several partially iterative phases, as presented in Figure 8.

In the first phase, an understanding of the research context was created: tentative categories and notions of patterns in data emerged, which made it possible to sharpen the research design. In the second phase, data was categorised in such a way that made it possible to explore role structures in a coherent manner; this coding process covered all cases and was conducted iteratively with phase three; that is, within-case analysis. In the third phase, case-specific displays were created and preliminary conclusions were drawn. Analyses were conducted both at the level of an organisation and at the level of innovation and development system. In the fourth phase (cross-case analysis), comparisons were conducted across cases; several data displays were created to organise organisation-level and system-level findings into formats that could be easily compared. These comparisons iterated with case-specific analyses, as similarities and differences between cases were identified. Conclusions were drawn concerning explanations for the similarities and differences between cases. Overall conclusions were drawn with the help of all these phases. These steps, as well as the analysis methods for each, are described in greater detail below.

1. Creating an understanding of the context

Screening through the cases and the informants
Initial analyses of innovation and development activities

Main outputs
- Research design and relevant concepts specified
- tentative propositions for relevant categories and patterns within cases
- Tentative notions of case-specific characteristics and relevant background info

2. (First) data reduction

Identifying and categorising innovation and development activities	Identifying and categorising roles • Categories of task types (RQ 1) • Categories of behaviour types in relation to expectation (RQ 2)

Main outputs
- relevant categories for analysing innovation and development systems

3. Within-case analysis: Identifying and explaining structural patterns within a case

Organisational level analysis: Forming position- and domain-based displays of roles (RQ 1 -4)	*System level analysis:* Identifying and describing innovation and development systems (RQ 1-4)	*Organisational level analysis:* Identifying and describing linkages between systems (RQ 3)

Main outputs
- Description of systems and role structures
- Preliminary local (and emic) explanations for the structural patterns

4. Cross-case analysis: Identifying and explaining similarities/differences between cases

Organisational level analysis: Comparisons of position- and domain-based displays of roles (RQ 1-4)	*System-level analysis:* Comparisons of innovation and development systems and role structures (RQ 1, 3, 4) • Domain- and organisational level-based analysis

Main outputs
- Categories of role structures (second data reduction)
- Explanations for similarities & differences between cases

5. Drawing conclusions

Figure 8. The five data analysis phases

3.4.1 Creating an understanding of the context (phase 1)

In the initial phases of analysis, the objective was to gain deeper insights into the empirical cases to define the empirical phenomenon, redefine the research problem, identify which concepts best describe the phenomenon, and learn how to operationalise the constructs and organise the data into analysable formats. Typical of qualitative analysis, the primary data was rather complex; it consisted of approximately 800–1000 pages of interview transcripts in which innovation and development activities had been discussed from various perspectives.

   Each interview transcript and relevant secondary data, such as annual reports or company presentations, was read through and several techniques were used to organise the data into meaningful displays. *Organisational charts* were drawn and other *organisation-specific memos* were written in order to identify the position and primary work tasks of each interviewee. To gain preliminary understanding of innovation and development activities and the role structures within an organisation, a *one-page memo* of each interviewee's perspectives on these issues was created, including the interviewee's understanding of innovation and development activities, roles, attitudes, and other insightful notions or potential conflicts that came up in the interview. Based on these memos, *short summaries of the potentially important issues in each organisational unit* were formed.

   The above-mentioned activities led to an understanding of the general organisational structure of the case organisations, the nature of the various organisational positions, the visibility of novelties to interviewees and the interviewees' perspectives on innovation and development activities. It also provided a preliminary understanding of the main issues in each case, the domains of innovation and development activities, and differences between organisational units and organisational levels. This understanding helped to identify relevant theoretical perspectives and concepts to be used in forming categories for the actual analysis.

3.4.2 Data reduction (phase 2)

In phase 2, the data was organised into categories that characterised relevant dimensions of the phenomenon. The coding process was partly conducted iteratively with within-case analyses, where the resulting categories were used to explore structural characteristics in a specific case. The data reduction included two main tasks. The first was to identify and categorise innovation and development activities, and the second was to identify and categorise the elements of individuals' roles in these activities.

Identifying and categorising innovation and development activities

The first task was to *identify innovation and development activities*. This required careful conceptualisation of innovation and development activities in order to separate them from other organisational activities. After reflections with current theories, innovation and development activities were identified based on their goals and outputs: activities were understood as innovation and development activities if they aimed to create something that was seen as a beneficial novelty in the given organisational context. The outputs were evaluated against typical solutions in a given context. For example, the creation of new advertising solution was not counted as a beneficial novelty if it was considered as business-as-usual in MarCo.

Secondly, since preliminary analysis suggested that individuals had different roles in the creation of different novelty types*, innovation and development activities were roughly categorised based on novelty type* in order to explore this issue further. Preliminary understanding of useful categories was formed based on literature, but elaborated upon based on empirical evidence. Novelties identified in the interviews were organised into a matrix based on the interviewee(s) who mentioned the novelty and the novelty type. Descriptions of typical development practices provided additional insights. Comparisons were conducted and clustering was done to identify similarities between novelties and the interviewees who mentioned the same or similar novelties.

This resulted in a preliminary understanding of the domains and the locality of different novelties. The most useful categorisation of novelties included three domains: *services*, *resources and practices*, and *organisation*. These categories were used in all within-case analyses. The scope/locality of the novelty was also identified as an important factor to explore, as it refers to whether the novelty had an impact on an individual, group, unit or the whole organisation. The analysis suggested that many novelties were quite local, since not many interviewees discussed the same examples.

Identifying and categorising roles

This task involved identifying and describing the characteristics of roles at the individual level. Roles were defined based on theory; although the interviewees sometimes referred to their activities with the role concept, their use of the concept differed. The analysis started by exploring the task types included in individuals' roles in innovation and development activities. It was considered important to identify and categorise the task types in order to explore who actually does what in innovation and development activities (RQ1). All individual's actions in certain type of innovation and development activity were understood to constitute the individual's role in that activity. However,

innovation management activities were predominantly omitted; the analysis was limited to those actions that directly contributed to the creation of a certain novelty. Four types of data were used in analysing roles:

- Descriptions of expectations for behaviour.
  For example: '*And of course people assume that you'll get development ideas when you proceed in your career.*'
- Description of practices within a group/people occupying similar position.
  For example: '*These service activities are so new that there are no written guidelines, so we have to continuously think and rethink what we are supposed to do, many times every day.*'
- Description of individuals' own behaviour.
  For example: '*I feel that I was a practical implementor in this innovation process. I was involved in creating most of the new concepts. But I didn't coordinate the innovation process – it was definitely Reetta's task.*'
- Descriptions of innovation management practices.
  For example: '*I encourage people to explore whether there's something we could do better, and if there are new viewpoints we could take into account in our service offering.*'

The analysis can be described as abductive iteration between a preliminary theoretical framework and empirical evidence (Dubois and Gadde, 2002): the task types were tentatively defined based on the literature and modified in two analysis rounds. After preliminary insights into the data, the task types were operationalised based on an *innovative behaviour concept,* since the concept provides the most concrete individual-level understanding of innovation and development activities (see Chapter 2.2.3). The first analysis round was conducted in three organisations: all descriptions of innovation and development activities, innovative behaviour and role expectations were coded with the help of qualitative data analysis software (Atlas.ti). These behaviours were then categorised using Kleysen and Street's categorisation (2001) as a starting point. This resulted in an empirical description and elaboration of these five categories in the case context (see Tuominen & Toivonen, 2011).

  The second round of the analysis was conducted in all organisations simultaneously with within-case analysis. At this time, the research questions had been redefined to address role structures. Therefore, the aim was twofold: firstly, to see if similar categories emerged also in the remaining two organisations; and secondly, to specify the categorisation to best characterise similarities and differences in individuals' roles. All five behaviour types were identified in the remaining two organisations, but certain combinations of these behaviours characterised individual's roles better than the original categorisation. In

addition, decision making turned out to be an important task type for understanding individuals' roles.

As a result of the analysis, the data was reduced into four general task/behaviour types; *idea generation, development, application,* and *decision making* (see Chapter 4.1.1. for detailed description). In addition, during later phases of the analysis, goal setting was identified as an action that was important to consider. This was not treated as role behaviour, however; instead, it was taken into account as managerial practice, which was analysed to evaluate the autonomy of organisational members in innovation and development activities (RQ3).

During this analysis, it became important to also explore the nature of role behaviour in relation to expectations, since the data suggested that there were differences in individuals' ability to influence their own work tasks. Individuals' innovative behaviours were categorised based on *whether the behaviour was expected and what was the nature of the expectation* (RQ2). The analysis was conducted simultaneously with the analysis of task types, and also here the analysis was iterated with the development of theoretical framework: the analysis started with the concepts of in- and extra-role behaviour but this categorisation was identified as being too narrow at an early stage. In many situations, behaviour could not be placed into these two categories. In addition, some expectations and behaviour characterised certain position-occupants, and others characterised certain individual persons; these two types were separated in order to identify whether roles were standardised or idiosyncratic.

Three categories of role expectations emerged: expected behaviour (position-related), expected behaviour (related to individual), and encouraged behaviour (position-related). Data concerning behaviour was categorised based on whether it fulfilled these expectations, modified them, or broke them. As an outcome, the five following categories of behaviour were identified (described in Chapter 4.2.): expected behaviour (position-related), expected behaviour (related to individual), encouraged behaviour (position-related), role-making behaviour, and role-breaking behaviour.

The citations in which certain tasks were described as part of an individual's duties were coded as expected behaviour. However, it was not always easy to identify whether (formal) expectations towards the behaviour existed. Therefore, the quotations were evaluated against the context, and three kinds of cues were used. Firstly, behaviour was compared against the interviewee's viewpoints in general. Secondly, behaviour was compared against other interviewees' descriptions of expectations/behaviour of a certain position-occupant/individual. Thirdly, the extent to which the innovative behaviour was being managed was evaluated to identify those situations in which expectations existed and those in which they did not exist or were broken/modified by individuals or groups. Table

3 shows the categories identified in roles. An individual's role in certain development activity could include any combinations of these categories.

Table 3. Identified categories of role behaviour

Behaviour/task types *(code used in analysis in italics)*	Idea gener-ation *(ID)*	Develop-ment *(De)*	Appli-cation *(Ap)*	Decision making *(DM)*
Expected (position) *(EX)* • Conducting explicit or implicit duties of a position				
Expected (individual) *(ST)* • Conducting individually negotiated duties				
Encouraged *(EN)* • Engaging in encouraged behavior				
Role-making *(ME)* • Modifying existing role • Taking a new role • Creating a new role				
Role-breaking *(BE)* • Engaging in forbidden behaviour (without negotiating it) • Not engaging in expected behaviour (without negotiating it)				

3.4.3 Within-case analysis (phase 3)

The next phase in the analysis was to explore patterns in individuals' roles within each case. 'Within-case analysis' refers to two levels of analysis: analysis within each organisation and analysis within each innovation and development system. These analyses included three steps. Firstly, organisation-wide position-based analysis of roles was conducted in order to understand the characteristics of roles related to different domains and to different organisational levels. This provided the basic platform against which different findings were evaluated. Secondly, innovation and development systems within case organisations were identified and described. Thirdly, linkages between the systems were explored. These steps are described briefly below.

Position-based analysis of roles

The aim here was to gain an overview of the dispersion of roles in a case organisation; that is, to explore how the expectations and practices vary among different individuals/position-occupants in different kinds of innovation and development activities (RQ1). The analysis resembled what Ilgen and Hollenbeck (1991) referred to as 'job analysis'; that is, an inductive analysis of existing roles.

Firstly, all descriptions of roles were summarised in one sentence that described the content of the activity and included the codes shown in Table 3. Also, the person and the novelty in question were specified, if needed. Examples of these summaries are shown in Appendix 3.

These summaries were then organised into a position-ordered matrix based on two factors: (1) the position and the organisational unit of the role-occupant whose behaviour was discussed, and (2) the domain of a novelty. Within this matrix, two additional categories were used: the nature of the quotation (description of expectation vs. description of behaviour) and the interviewee's position in relation to the role-occupant whose role was discussed. In addition, descriptions of how the supervisors aimed at influencing the position-occupant's behaviour were summarised in the matrix to evaluate whether the behaviour was expected. As a result, the matrix consisted of 'analysis cells', each of which contained data about the roles of certain kinds of position-occupants in a certain unit, concerning certain domain. The display provided an overview of each position-occupant's typical roles and compared different roles to each other. Figure 9 illustrates the position-ordered matrix in AdviCo, and an Appendix 3 presents an example of the coding procedure and the content of an analysis cell.

Domains of innovation and development activities:

Service   Resources&practices   Organisation

Positions:
Top management

Unit manager

Team leaders

Senior Professionals

(continues: juniors etc)

A   B   C   A   B   C   A   B   C

Organisational units

One analysis cell: roles of senior professionals in service domain in unit A

Description of supervisors' aims at influencing position-occupant's behaviour
- Citations from top management
- Citations from supervisors
- Citations from the position-occupants

Description of role expectations towards position-occupants' behaviour
- Citations from top mgt/supervisors
- Citations from the position-occupants
- Citations from interviewees below this position (subordinates etc)

Description of position-occupants' behaviour
- Typical practices among position-occupants (source of citation not specified)
- Position-occupants' description of their own behaviour

Figure 9. Illustration of a position-ordered matrix and an analysis cell

Next, *comparisons* were made in order to identify patterns in roles within an organisation. Comparisons were first made within each cell to identify whether there were differences in the expectations deriving from different organisational

levels, and whether the position-occupants behaved according to these expectations. Because the data was not complete, comparisons were made only if data existed. Typically expectations and behaviour were not contradictory, but the content of these two categories was sometimes different. If contradictions were found, explanations for them were explored. Sometimes the presence of contradictions indicated that there were several systems within an organisation, and some contradictions manifested role-making and breaking behaviours.

To strengthen the validity of this data display, the data was compared against the summaries of each interview. If the summaries included important viewpoints that did not fit into the matrix, the viewpoints were written down into memos. These memos included descriptions of the orientations and attitudes of different organisational sub-groups, for example. In addition, a small triangulation check was done. Another researcher read through two interviews and was asked to code the interviews with the codes shown in Table 3. A short description of this check is provided in Appendix 4.

Identifying and describing innovation and development systems

The analysis suggested that only certain position-occupants participated or were expected to participate in the creation of certain kinds of novelties. For example, a single team's services were often developed within that specific team, and strategic development projects were developed by top managers and designated persons from different units. Based on reflections between theory and initial findings, these notions were seen to provide evidence of multiple innovation and development systems within an organisation. These systems were separated from each other by exploring patterns in roles.

This phase was quite important as this was the stage at which the boundaries of the sub-cases – that is, innovation and development systems – were identified and described. This task required iterations in several case organisations and reflections with theory. The boundaries were identified based on the participants, their roles and the goals of specific kinds of innovation and development activities (see also Chapters 2.5 and 3.3.). Innovation and development systems were defined as entities that consist of interconnected role behaviours of individuals who share similar goals and expectations towards one another's behaviour in pursuing the creation of beneficial novelties.

Some systems were realised only once: an example is the creation of a radical organisational change. Based on the idea of critical realism, these instances may provide important insights into underlying structures, although they take place only rarely. Other systems were realised many times. If similar combinations of position-occupants participated with similar roles in the creation of specific types of novelties in specified context, these activities were seen to characterise the same innovation and development system. If other characteristics were similar

but the context was different, the activities were seen to form separate systems that are of similar type; for example, services could be develop in a similar manner in two separate units.

The analysis can be seen as a content analysis in which an understanding of the case (that is, a system) was formed based on several data sources, which could support or contradict each other (cf. Roth & Mehta, 2002). Firstly, interview transcripts and memos were explored in order to identify patterns that could be interpreted as innovation and development systems. These preliminary 'propositions' were then systematically tested by searching for supportive or contradictory evidence from various sources, including other interviews and several data displays. Different analysis cells in the above-mentioned position-ordered matrix were compared against each other to identify how the roles differed between domains and organisational levels. Summaries of the interviews and the role-ordered matrices developed in task 1 were also used.

This process resembled techniques such as 'checking the meaning of outliers' and 'following up surprises' (Miles & Huberman, 1994). For example, if three interviewees described similar roles in the development of IT tools, but a fourth interviewee described a somewhat different role, this contradiction could suggest that there were two innovation and development systems instead of one (see, for example, the development of IT tools in ArcCo, Chapter 5.1.1.). The researcher could also have misinterpreted the data in the three previous interviews, which would mean that the interpretation had to be revised. Through this trial-and-error process, a coherent picture of innovation and development systems in a certain context was formed. The analysis ended when all innovation and development activities had been taken into account in the descriptions of innovation and development systems and there were no discrepancies in empirical evidence.

During the analysis, memos were written about the main characteristics of each system. These memos included a description of the system, its history, and linkages to other innovation and development activities; the goals; the development practices; position- and task-based categorisations of participants' roles; how the activities are led/controlled by external actors (such as top management); and potential conflicts with other activities (see an excerpt of a memo in Appendix 3). These memos included preliminary explanations underlying the role structures and characterisations of the flexibility of role structures. In addition, all systems were listed on a matrix that characterised the role structures in the systems. Modified versions of these matrices are shown in Chapter 5 at the end of each case description.

To check the quality of the analysis, a small triangulation check was done. A fellow researcher read three interviews and was asked to identify systems based on principles described above. He was also given a preliminary case description

(Ch. 5) and asked to check whether the description was consistent with the interviews. A brief description of this check is provided in Appendix 4.

Identifying and describing linkages between systems

This task was conducted to evaluate the coherence of role structures within an organisation (RQ3). Since many innovation and development systems were identified, two analysis questions were formed to guide the analysis. The first question concerned the autonomy of systems; that is, the extent to which innovation and development systems were controlled at the organisational level. The autonomy was operationalised based on whether goals were set within the system or at a higher organisational level. The second question concerned the linkages between systems. The linkages were identified by comparing the goals of systems and the co-operation involved in achieving these goals. The analysis was initially guided by Poole and Van de Ven's (2004) description of linkages between different entities of change.

Memos that were created earlier were used. In addition, visual sketches were drawn, with all innovation and development systems in an organisation placed into the same picture. Figure 10 offers an example of a sketch in CoCo. Although these sketches did not take into account all important details, they did highlight some relevant questions. For example, arrows were drawn to represent linkages (or a lack of linkages) between innovation and development activities that had an influence on the same domain. The nature of these linkages was then be explored in order to evaluate and explain coherence.
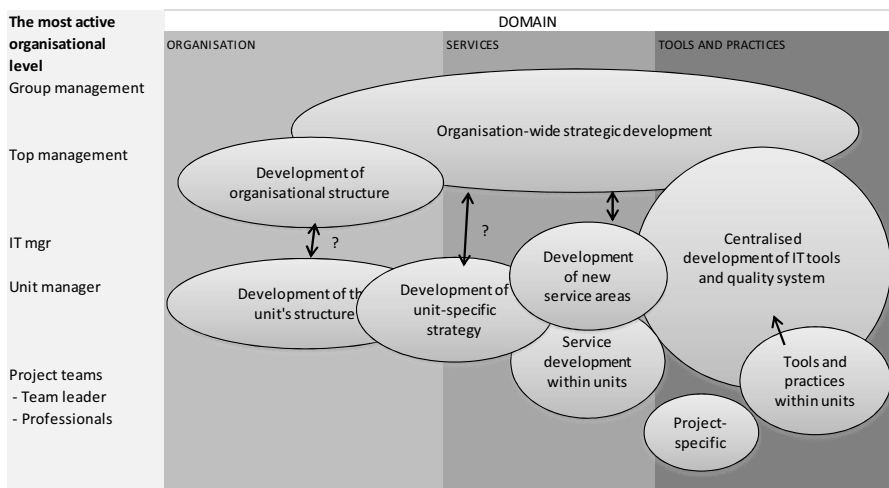
Figure 10. An example of a visual sketch used in data analysis

As an output, descriptions of and explanations for the coherence of role structures were formed (RQs 3 and 4). In addition, the analysis helped develop an

understanding of explanations for flexibility in structures. For example, the lack of strong linkages between organisation-wide strategic development and development of the unit-specific strategy shown in Figure 10 was due both to the newness of the organisation-wide strategic development and the specific nature of the unit's business. Since the unit manager had the best expertise to evaluate the unit's business, and since no specific guidelines had derived from the organisation's strategy, the unit manager had created his own innovation and development system to develop the unit's business.

3.4.4 Cross-case analysis (phase 4)

The main idea in cross-case analysis was to identify explanations for role structures in innovation and development activities by exploring when and why certain structural patterns existed in the cases (RQ4). Case-specific findings were supplemented by exploring whether there were similarities and differences between cases and what could explain these patterns. Some comparisons were already made during within-case analysis, as similarities in role structures were identified in different contexts. After all organisations had been analysed, comparisons between contexts were conducted in more detail.

   Comparisons were conducted at two levels. Firstly, innovation and development systems were compared with each other and, secondly, the organisations were compared with each other. The main focus was on the system-level analysis, since preliminary insights suggested that the systems differed from each other based on unit or group-level factors rather than organisational characteristics.

Comparisons between innovation and development systems

The system-level analysis included two main tasks. Firstly, role structures were categorised into certain types; secondly, explanations for these types were explored. The first task can be understood as the second data reduction phase: innovation and development systems were categorised based on similarities and differences in roles structures. This analysis included comparing how broadly different task types (idea generation, development, application, and decision making) were expected/encouraged from the members in different systems. For example, in some systems everyone was expected to generate ideas, but the development tasks were delegated to a limited number of employees, and only one person was allowed to make decisions. In other systems, all of these tasks were conducted collectively.

   Initially, all case-specific descriptions were browsed through to ensure that the innovation and development systems had been described in similar manner. All innovation and development systems were then listed in one matrix (see the tables in Chapter 5, at the end of each sub-chapter). Among the systems, five role

structure types were identified: *centralised, coordinated, empowered, collective* and *dispersed role structure types* (see Chapter 4.1.2.). System-level memos, position-ordered matrices and interviews were used to check and verify these findings.

Table 4 summarises the dimensions explored in the analysis and the categories identified in the data in all of the above-described analysis phases.

Table 4. Categories identified and used in data analysis

Level of analysis	Dimensions studied	"Operationalisation" of the dimensions in data analysis	Categories identified in the data
Individual-level analysis	Task types included in a role (RQ1)	Innovative behaviour types Ability to make decisions concerning the novelty	Idea generation Development Application Decision making
	Flexibility in roles (RQ2)	• Amount of choice *included in* expectations • Individuals' ability to shape expectations	Expected behaviour (position-related), Expected behaviour (related to individual), Encouraged behaviour (position-related), Role-making behaviour, Role-breaking behaviour
	Domains (RQ1)	Types of novelties developed	Domains of services, organisation, and resources & practices
System-level analysis	Internal role structure of a system (RQ1)	Dispersion of roles in a system	Centralised, Coordinated, Empowered, Collective, Dispersed structures
	Flexibility in role structure (RQ2)	Individuals' ability to modify/create systems	Role-making and role-breaking behaviour that modifies systems
	Domains (RQ1)	Types of novelties developed	Domains of services, organisation, and resources & practices
Organi-sational level analysis	Autonomy of systems (RQs 1, 2, 3)	Goal setting at system level vs. at higher levels	Autonomous vs. non-autonomous systems
	Relationships between systems (RQs 1, 3)	Linkages between the goals and outputs of the systems	Nested, Interlinked, Separate, Conflicting systems

The remaining part of the analysis process focused on identifying explanations for the nature of role structures (RQ4). The task was to *explain* why a certain structure type emerged in certain systems. Systems were clustered based on an initial hunch about which factors could explain the structure type. These factors

were identified alongside case-specific analysis based on interviewees' explanations and identified patterns. The most obvious factors included the domain of innovation and development activities and the organisational level at which the system was identified. Innovation and development systems were categorised based these dimensions. Three domains (services, tools and resources, and organisation) were chosen in the analysis, along with four organisational levels: organisational/managerial, unit, service area/team and project/individual.

The analysis included noting patterns between different domains and organisational levels, and counting the amount of different structure types identified in different domains and organisational levels (Miles & Huberman, 1994). Certain similarities between systems were identified. For example, organisation-wide empowerment structures were most typical in IT development, while coordinated structures were typical in the development of strategic projects, whereas dispersed structures never occurred. Explanations for these similarities and differences were then explored. Firstly, the most likely explanations were formulated into tentative 'hypotheses' or 'propositions'. Then replication tactic was used. The remaining cases, in which similar explanations were likely to be identified, were explored to determine whether the 'hypothesis' was confirmed or rejected and why (see, e.g., Miles & Huberman, 1994; Yin, 1994).

An example of a hypothesis is that empowered structures occurred in IT development systems since employees' input was needed to identify problems and test new tools (which explains a structure in which everyone was encouraged to present ideas), but the development required specific expertise that only IT managers and specific individuals had (which explains a structure in which development tasks were delegated to specific individuals based on their own expertise). In addition, decisions were made centrally, since investments were needed and the tools had to be applicable in all units, and only the IT manager or top management had the organisation-wide knowledge needed for decision making (which explains the centralised decision making structure). After forming hypotheses, the system-specific memos and other relevant data were browsed through to determine whether all IT development systems confirm these hypotheses.

Deviant cases were used to modify the hypotheses (for example, why were tools in case x developed at the unit level instead of at the organisational level? Why was the role structure in system y coordinated and not empowered?) These deviant cases either modified the hypothesis or specified the context in which the explanation held. For example, the above-mentioned explanation was limited to the development of tools that required complex IT expertise; the development of

simple calculation models did not require such expertise and investments, which meant that different role structure types at lower organisational levels existed.

Based on these comparisons, factors that had an influence on the breadth of systems and the role structure types in certain situations were identified. From these factors, more general categories of factors were abstracted. These general categories included factors related to organisational characteristics, nature of work, position-related characteristics, individual characteristics, and other individuals' characteristics. Causal maps were written in order to relate these factors to each other (see, e.g., Figure 11, Chapter 6.4.2.).

The above analysis suggested that certain underlying principles explained why these factors had an impact on the dispersion of roles. These included certain abilities that were necessary when carrying out certain tasks in innovation and development activities; the above-mentioned factors were seen to influence these abilities. The dispersion of these abilities among organisational members was used as a 'hypothesis' that would explain role structures, and the cases were browsed through once again to ensure that the explanations covered all cases. Three abilities were identified to underlie individuals' roles: the ability to (1) explore, (2) evaluate and (3) mobilise resources for the implementation of a novel idea (see Chapter 6.4.3.).

Comparisons between organisations

Comparisons at the organisational level were made to support the system-level analysis; these comparisons were made partly in parallel. Two aspects were analysed: positions were compared against each other, and the coherence of structures was compared across organisations. Firstly, similar positions between organisations were identified and position-ordered matrices were used to identify similarities and differences in individuals' roles at different organisational levels. Brief summaries of the typical roles were written to gain an overview of the similarities and differences (see Appendix 5). The typical roles and exceptions from these roles were then compared regarding the content of a role (that is, the domains and the tasks types) and the ability of an individual to influence the role.

The analysis was quite similar to system-level analysis: after identifying certain patterns in roles, likely explanations for these patterns were summarised as 'hypotheses' or 'propositions', which were then tested by exploring the roles of individuals occupying similar positions. An example of a hypothesis is that professionals created project-specific novelties autonomously or with colleagues, since their work was autonomous and they had the best expertise with which to explore ideas and evaluate and test novel ideas. These hypotheses were then tested by exploring the roles of professionals across organisations, and modified if negative cases were identified. For example, the analysis showed that the hypothesis did not hold if the services in question were in a rapid development

phase; in those cases, ideas were typically discussed at team or unit level first in order to evaluate the possibility of replicating ideas. Similarly, explanations for the lack of roles were also explored (for example, why grass-root professionals rarely participated in strategic development processes).

Secondly, the coherence of role structures within organisations was compared using two separate perspectives. Firstly, the autonomy of goal setting in systems was explored. Organisational levels in which goals were set were compared using a matrix covering all systems and a simplified version of the matrix (see Table 23). Based on these comparisons, typical practices concerning goal setting and deviations from these practices were identified, and explanations for these practices were explored with the help of system-level memos and other material used earlier. Secondly, linkages between systems in each organisation were compared with the help of system-level memos and visualisations of systems (see Figure 10).

Replication tactic was used again. Firstly, one organisation was explored and explanations for linkages in that organisation were formulated. Secondly, other organisations were explored in order to determine whether similar linkages existed and if similar explanations had been identified. For example, AdviCo provided a context in which the linkages were different from other organisations; explanations for these linkages were sought within the case organisation (how do the interviewees describe their development goals and goal setting strategies), and then explanations for the lack of such linkages were explored in other case organisations (for example, why innovation and development activities are more autonomous and varied at EngiCo). The aim was to reach coherent explanations for the similarities and differences between organisations. However, it should be noted that the number of cases at the organisational level was small, which means that these findings are only suggestive.

3.4.5 Drawing conclusions and forming theoretical contribution

The theoretical framework was elaborated throughout the analysis process, and the responses to the research questions were formed through all the above-mentioned steps. RQ1 concerned the nature of role structures in innovation and development activities. The description of role structures was formed by identifying role elements and identifying and describing innovation and development systems and their structures. These findings were compared to current knowledge in order to evaluate whether the findings supplemented or challenged the current understanding of innovation activities in PSFs.

RQ2 concerned flexibility; that is, the ability of individuals to shape their roles and role structures. The analysis of this question was intertwined with the analysis of the first question; that is, the individual- and system-level analysis of roles. The initial findings were compared to the theoretical viewpoints of

structure and individuals' agency, which resulted in notions of three kinds of agency in innovation and development activities.

RQ3 concerned the coherence of structures. The responses to the question were formed by evaluating the autonomy of goal setting and linkages between systems. Considering the research design and the relatively small weight given to this question, RQ3 supported the first and the second question, rather than being important in its own right. RQ3 supported the first research question by providing organisation-level perspective and knowledge of the autonomy of different systems. Considering the second question, it provided proof of individuals' ability to change structures: for example, conflicting systems were created as a result of role-making behaviour.

The fourth question concerned explanations for the role structures. These explanations were explored by combining and comparing the explanations identified in within-case and cross-case analysis. The analysis of roles at different positions and the analysis of role structures at different contexts provided two perspectives that supplemented each other. Causal maps were written in order to explore the individual and contextual reasons for differences in the dispersion of roles: with the help of these maps, certain common principles were identified among cases, related to the dispersion of the required abilities (namely, the ability to explore, evaluate, and mobilise resources for the realisation of a novel idea). In line with evaluating the importance of the findings, new theoretical perspectives were sought that could provide coherent explanations for the findings. This exploration resulted in interpretations of the findings that could be used as the starting point in formulating future research projects.

4. Elements of role structures in case organisations

The findings of the study are presented in three chapters. The present chapter acts as an 'introduction' to the findings by presenting an overview of the categories of roles and role structures identified in the studied cases. These categories are used in Chapter 5 to describe innovation and development systems in their organisational context. This is followed in Chapter 6 by cross-case analysis in which empirical findings are compared across cases and explanations for role structures are discussed.

Table 5 shows how the understanding of each research question is formed through these chapters. The *first research question* addresses the types of role structures in the case organisations. This chapter describes the task elements of roles identified in the data. It also describes how the dispersion of these elements among the members of a system was seen to form five role structure types. Chapter 5 provides more contents to these categorisations by showing how these role structure types manifested themselves in innovation and development systems in different organisational contexts. Finally, Chapter 6 compares the role structures in different organisational contexts.

The *second research question* addresses flexibility in role structures. This chapter describes five identified behaviour types that are discussed in relation to three role expectation types. This categorisation is used as a 'language' through which individuals' ability to influence the roles may be discussed. Chapter 5 shows when and how individuals were able to influence their roles and role structures in different case contexts. Chapter 6 summarises these findings. The *third research question* concerns the coherence of structures. The question is addressed in Chapter 5 by showing who set goals in the identified innovation and development systems, and what were the linkages between systems in each case organisation. Chapter 6 compares the autonomy and linkages between organisations and summarises the findings.

The *fourth research question* summarises explanations for the characteristics of role structures. Chapter 5 addresses this question by showing what explains the roles and role structures in each system. Chapter 6 focuses on cross-case

comparisons, which makes it possible to identify and discuss more general principles underlying role structures.

Table 5. Structure of the findings chapters

Chapter 4 Elements of role structures in innovation and development activities An overview of the identified categories of roles and role structures	Chapter 5 Innovation and development systems in the case organisations Description of how these categories manifest themselves in innovation and development activities in each case organisation	Chapter 6 Comparisons between cases Comparisons between cases to identify explanations for role structures
RQ1: What kind(s) of role structure(s) exist in innovation and development activities?		
• An overview of the four task elements identified in individuals' roles (4.1.1) • An overview of the five role structure types identified in the cases (4.1.2)	• Description of innovation and development systems and their internal role structures in each case organisation	• Comparisons of individuals' roles in case organisations (6.1.1) • Comparisons between innovation and development systems identified in different domains (6.1.2)
RQ2: How flexible are the role structures?		
• An overview of the identified five behaviour types in relation to role expectation (4.2.)	• Description of individuals' influence on roles and role structures in innovation and development systems in each case organisation	• Evaluating flexibility in individuals' roles across cases (6.2.1) • Evaluating flexibility in role structures across cases (6.2.2)
RQ3: How coherent are the role structures?		
	• Description of the autonomy of innovation and development systems and linkages between systems in each case organisation	• Comparison of the autonomy and linkages between systems across case organisations (6.3)
RQ4: What explains the nature of role structures?		
	• Case-specific (that is, local) explanations for the identified structure types	• Summarising factors that have an impact on roles (6.4.1, 6.4.2) • Proposing principles that connect the factors to role structures (6.4.3)

4.1 Task elements and role structure types

The *first research question* addressed the types of role structures in innovation and development activities. Before describing the nature of role structures in each case organisation, this chapter briefly describes the categories of task elements and the role structure types identified in the data. This makes it possible to describe case-specific findings in an organised and compact manner. Firstly, task elements in individuals' roles are described: the roles of organisational members in different activities differed from each other regarding the tasks included, and four general categories of tasks were identified. Secondly, the role structure types are described. The dispersion of the task elements among the participants differed across the various innovation and development systems, based on which five role structure types were identified.

4.1.1 Task elements in roles

The interviewees engaged in innovation and development activities in different ways; for example, some were active in developing new solutions from the beginning, whereas others were less active but implemented and utilised novel solutions when needed. Based on such insights, the individuals' roles in innovation and development activities were seen to consist of different kinds of behaviours; these behaviours are discussed here as task elements that make up a role (Ilgen & Hollenbeck, 1991; Turner, 1962). The term 'task' does not indicate that the behaviour was necessarily expected; it is simply used to characterise individuals' contributions.

The various behaviours formed four general task elements, which were labelled as follows: *idea generation; development* of the idea into a form that can be used in practice; *application* of the idea; and *decision making*. Roles included one or more of these elements: for example, the role of professionals in IT development in EngiCo was typically limited to suggesting new ideas or problems and to applying novel ideas. Simultaneously, their role in the development of new services could include all the task elements, with the possible exception of decision making, which was included in unit or team managers' role. These elements are described briefly below.

Idea generation

Idea generation as a task type included identifying and communicating opportunities, challenges and ideas that were either related to on-going innovation and development activities or could initiate new processes. Idea generation was often related to one's own work, although tasks linked to other organisational issues were also identified. Idea generation was often not a planned activity: new opportunities were identified alongside normal work,

especially in everyday interaction with customers. In some cases, formal meetings and other practices supported idea generation. Some roles consisted only of tasks related to idea generation. In the development of IT tools, for example, everyone was encouraged to present ideas and problems related to tools. Other roles included tasks linked to developing the ideas further. Many interviewees said that people could not be forced to pay attention to new opportunities; a lot depended on the employees' own ambitions and commitment to the firm.

Development

The second task element included developing the idea into a form that can be used in practice. In service development processes, for example, the development task included refining service concepts and defining and describing service processes, tools and evaluation methods. The individuals carrying out development work were either the original presenters of the ideas or other individuals with the necessary skills and motivation. Excluding novelties that were developed alongside customer work, development tasks typically required time resources and sometimes also other investments. In these cases, these tasks were centrally coordinated and delegated to certain individuals. In a few cases, development was carried out as full-time work: organisational members typically carried out these tasks in addition to their normal work tasks. It is also important to notice that development task included such innovative behaviour types as idea generation and opportunity identification behaviours: many development processes could be seen as constant identification, generation and evaluation of new ideas and opportunities.

Application

Application involved implementing, modifying and utilising the novelty in real business such as in markets, customer cases, and work practices. Although those individuals involved in development tasks typically also applied the novelties themselves, some roles only included application tasks, while someone else handled idea generation and development. It is debatable whether those individuals with mere application responsibility really participate in innovation and development activities; nonetheless, it was considered in the analysis due to the iterative nature of development processes. Iterations between application and development were typical in innovation and development activities – development often continued after implementation. Therefore, application often included modifications and opportunity identification. In the development of new services and new work practices, application was often used to help evaluate ideas and identify new opportunities (cf. Toivonen & Tuominen, 2009). The following quotation illustrates this issue in ArcCo:

'Instead of having a perfect product, it is important to get a part of the product implemented as soon as possible; then it starts leveraging itself and progressing by itself. I don't believe in doing a year's project, and then bringing it up to people, saying "you have to act like this from now on". We have to have intelligent ways to… prepare, do piloting, and so on… to use the idea in real business as soon as possible. And if the idea really helps your business and is interesting, it starts implementing itself automatically.' (A member of top management, ArcCo)

Decision making

Decision making concerned the ability to make decisions about to how to proceed with an idea. At a micro-level, all development tasks included constant decision making concerning how to proceed; however, decision making as a task type concerned the ability to decide whether to spend time and resources developing the idea and whether to implement the idea. In some instances, individuals could make their own decisions about the novelties they developed. In other cases, decision making was centralised to certain individual/individuals: some supervisory roles even included only decision making tasks without making any other contributions to innovation and development activities. In some situations, decisions were made collectively by the individuals participating in a certain innovation or development effort.

It can be noted that the four task elements include several categories of innovative behaviour identified in earlier literature. For example, Kleysen and Street's (2001) five innovative behaviour types were identified among the first three elements. However, each task element contained one or more of these behaviour types in different combinations. Also decision making turned out to be an important element that separated individuals' roles. Table 6 summarises the task elements and the innovative behaviour types included in these elements.

Table 6. Task elements included in a role

Task element	Description	Innovative behaviour types (Kleysen & Street 2001 typology)
Idea generation	Identifying and presenting new ideas, problems and opportunities. Might be related to on-going development process or initiate new ones.	Opportunity recognition, generativity, championing.
Development	Developing the idea into a form that can be implemented. Often conducted alongside customer work: may presume explicit decision making, if time or other resources are needed.	Opportunity recognition, generativity, championing, formative investigations.
Application	Applying the idea in real context. Typically leads to presenting new opportunities, problems and challenges.	Application, championing.
Decision making	Making decisions about whether to develop and apply the novelty.	

4.1.2 Role structure types

Innovation and development activities in the studied organisation formed several systems that consisted of patterned and interdependent role behaviours of individuals who pursued the creation of beneficial novelties. The above-mentioned task elements were dispersed differently among the participants in different systems. In some systems, differences in individuals' roles were large and certain individuals controlled the activities. In others, roles were similar and members had equal opportunities to participate. These differences were understood as variations in the role structures in innovation and development systems. Role structure was defined as consisting of interrelated role expectations that patterned the role behaviours of the members of the system. Five role structure types were identified based on the dispersion of tasks and were labelled as *centralised, coordinated, empowered, collective* and *dispersed role structures*.

Centralised structures were dominated by one or a few individuals, who made decisions, generated and developed the ideas and coordinated their implementation. An example is the development of organisational structures, where top management was typically the primary actor and other organisational members acted as implementers. Another example is service

development activities in units where unit managers acted as the main innovators.

Coordinated structures: In these structures the main ideas derived from one or a few members, who made decisions, coordinated the development activities and allocated specific development tasks to other members. Examples are some strategic projects: the top management initiated and coordinated the projects, whereas other individuals were expected to participate in the development and implementation of novelties.

Empowered structures: A wider range of individuals were expected to participate in these structures, although the participation was coordinated by one or few individuals (see similarities with Sundbo, 1996). For example, the development of organisation-wide tools was typically coordinated by a development manager, whereas other members were encouraged both to present ideas and conduct specific development tasks coordinated by the development manager.

Collective structures: All task elements in these structures were expected or encouraged from the members of the system, and decisions were made collectively. An example is from a unit that aimed to develop its service as a collective effort in ArcCo.

Dispersed structures: Members of these systems anonymously created small-scale novelties. Typical examples include the creation of project-specific service improvements alongside normal customer work. The creation of these novelties was typically encouraged or expected from all professionals in a unit, but an individual novelty was created autonomously by one professional or project team. Although the primary goal was to create a beneficial solution for a single project, an underlying goal was to develop the unit's services and spread ideas across projects. Therefore, these rather independent behaviours of individuals were seen to form a system.

Table 7 summarises the dispersion of tasks in each structure type. Chapter 5 shows how these structure types manifested themselves in different innovation and development systems.

Table 7. Dispersion of tasks in the five role structure types

System/task types	Idea generation	Development	Application	Decision making
Centralised	One/few dominating member(s)	One/few dominating member(s)	Everyone in the system	One/few dominating member(s)
Coordinated	One/few dominating member(s)	Allocated to certain members	Everyone in the system	One/few dominating member(s)
Empowered	Everyone in the system	Allocated to certain members	Everyone in the system	One/few dominating member(s)
Collective	Everyone in the system	Allocated to certain members	Everyone in the system	Collective decision making
Dispersed	Everyone in the system	Everyone in the system	Everyone in the system	Everyone makes individual/project-specific decisions

4.2 Expectation types and behaviour types

The second research question addressed flexibility in role structures. The roles in innovation and development activities could be placed along a continuum ranging from those that were standardised to those that were 'made' by the role-occupants themselves. Flexibility was seen to concern whether individuals acted based on pre-existing expectations or whether they were able to modify the expectations through their behaviour. Three role expectation types were identified, and five behaviour types could be discussed and evaluated against these expectations. This categorisation is presented here and used as a 'language' through which individuals' ability to influence the roles – and, more broadly, role structure – can be discussed. The categorisation is used in Chapter 5 to show when and how individuals were able to influence their roles and role structures in different case contexts.

Three categories of role expectations were identified. These categories varied in terms of the amount of choice included in expectations (expected vs. encouraged behaviour), and in whether the expectation was a pre-existing assumption related to a position or an emergent element linked to an individual's characteristics. The categories were expected behaviour (position-related), expected behaviour (related to individual), and encouraged behaviour (position-related). Subsequently, manifestations of individuals' behaviour could be divided into five types: *expected behaviour related to position, expected behaviour related to an individual person, encouraged behaviour, role-making behaviour,* and *role-breaking behaviour.* The first three types correspond to existing role expectations, while the latter two describe attempts to modify roles: the resulting action was understood as role behaviour if it became accepted and had an

influence in a certain organisational context; if it was not recognised or accepted, it was not considered to be a role behaviour. Role structures were seen to address those behaviours that were acknowledged and accepted in the organisational context in question. However, it was important to take the non-accepted behaviour types into account when considering the flexibility of role structure and individuals' ability to influence their own roles. These five categories are explained below.

Expected behaviour related to positions and to individuals

Some tasks were required from a role-occupant, either explicitly or implicitly. Carrying out these tasks was labelled here as expected behaviour. Interviewees said that certain tasks were part of their work duties, stating 'we are supposed to do this', or 'it is my responsibility'. There were also formal practices in which role-occupants were expected to participate, such as strategy sessions and idea generation meetings. There were also some collective practices that were not explicitly expected, but *not* participating in them would have been considered strange. Therefore, the expectations seemed to be held either formally or informally.

There were two types of expected behaviours. Firstly, some expectations concerned all individuals in a certain position or group, regardless of an individual's characteristics. These are referred to here as *expected behaviour related to position*. Typical examples are expectations to develop issues related to the position-occupant's normal work responsibilities: unit managers were expected to develop their units, for example. Other expectations were more subtle: for example, professionals were expected to develop their own professional domain. Rather than being an explicit requirement, it often seemed to be an implicit assumption. Examples of explicit and implicit expectations are shown in the quotations below. The first interviewee characterises a rather explicit expectation of creating new professional and business ideas in MarCo, whereas the latter is an example of an informal expectation related to the development of professional expertise in ArcCo.

'In this kind of office, being innovative is part of your work – you get paid for it. Then you might get something little for extraordinary efforts.' (CEO, MarCo)

'It [opportunity exploration] is a kind of expectation here, everyone is thought to screen external sources actively at work – and during leisure time as well [laughing], people read magazines, et cetera.' (Project manager, ArcCo)

Secondly, some expectations concerned specific individuals based on their skills or motivation rather than on their position. These expectations are referred to as

expected behaviour related to an individual. These tasks were negotiated and delegated based on an individual's own initiative or that of someone else. Examples of such tasks are participation in specific service development processes and in the development of IT tools. The quotations below characterise different kinds of expectations related to individual; in the first, expectations concern specified development projects, whereas the expectations in the second quote concern a continuous role.

> 'It is precisely the same people who conduct normal customer projects: we establish development projects and then we analyse who has the right expertise and experience to be involved ...' (Unit Manager, EngiCo)

> 'My role, for example, is to be a coordinator in issues related to EU and international law, it is my responsibility to make sure that news and other information sources are screened through and people are informed about relevant issues ...' (Assistant manager, AdviCo)

Encouraged behaviour

Encouraged behaviour referred to carrying out certain tasks in a situation in which everyone acting in a certain position/unit was encouraged to do so, but whether they acted depended on the judgement of each individual. For example, in many units all professionals were encouraged to suggest ideas related to service development. The two quotations below illustrate these encouraged behaviours in ArcCo. In the first, the unit manager discusses such role expectations; in the latter, a project manager describes how certain individuals engage in encouraged behaviours (whereas others do not).

> 'We have aimed to encourage people to bring it up if they really think there's something to improve; usually it concerns problems and things that do not work ...' (Unit manager, ArcCo)

> 'Here we are allowed to do things that are not included in the traditional role [of an architect]. And we have people who are always developing and analysing something new. Hence we have two kinds of persons, basically.' (Project Manager, ArcCo)

The difference between expected and encouraged behaviour is that in the former case, not carrying out these tasks is considered as not conducting one's work duties, whereas carrying out these tasks is considered optional in the latter.[12]

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[12] Some earlier studies have treated encouraged behaviour as extra-role behaviour; see the discussion in Chapter 2.4.3.

Role-making behaviour

In addition to expected and encouraged behaviours, there were also situations that did not involve any expectations or in which the expectations were unclear. In some instances, individuals engaged in innovative behaviour anyway; these acts are here broadly termed as *role-making behaviours*. There were three types of role-making activities. Firstly, individuals modified their existing roles; for example, by acting more or less actively or more autonomously than expected. An example is service development activities in AdviCo, which is characterised in the quotation below.

> *'We have had persons who have insisted on developing the service in that direction [towards proactive advisory services]. Typically they have been grass-root professionals. There have been times when the management has slowed down these development processes.' (Team leader, AdviCo)*

Secondly, individuals aimed to participate in existing innovation and development activities in which they did not yet have a role. Examples are grass-root professionals' attempts to participate in strategic development activities when they were not encouraged to do so. In some cases, the individual succeeded in this attempt, but in other cases the behaviour was not taken into account. A project manager who had difficulties being heard reflects on this issue below.

> *'I want to emphasise that it is all about your own motivation, it depends on your own activeness and persistence. Perhaps one should be more stubborn and advance one's ideas more actively.' (Project Manager, ArcCo)*

Thirdly, some individuals disagreed with the goals of current innovation and development activities and initiated their own activities instead. An example is a situation in which a local subunit manager initiated local service development practices in EngiCo after being frustrated with the development practices in the unit.

Due to the informality of innovation and development activities, role-making behaviours seemed to be very common. Interviewees' stories suggest that *expected behaviour related to individuals* was sometimes created in this way: when the innovativeness of these individuals was acknowledged, the behaviour sometimes led to longer-lasting role modifications (cf. Ilgen and Hollenbeck's (1991) concept of emergent elements).

Role-breaking behaviour

Instances in which individuals acted against expectations were labelled as *role-breaking behaviours*. Role-breaking differed from role-making in the sense that

an individual acted against existing rules without first aiming to negotiate about the problems. Firstly, there were situations in which an individual disagreed with expectations and did not engage in role behaviour. Examples are situations in which individuals were expected to participate in developing current service processes, but did not finish the task. Due to the prioritisation of urgent customer work, this was common and typically accepted, which perhaps shows that the expectations towards innovative behaviour were not very strictly controlled. Secondly, innovative behaviour was forbidden in some cases. These restrictions typically concerned overly autonomous behaviour or spending too much time on developing ideas. The interviewees did not mention having conducted such behaviour themselves, but the interviewed managers recognised these behaviours, as shown in the quotation below.

> 'We have persons whose innovativeness needs to be strictly controlled, or else we might notice that they have spent a week developing something on their own, which leads nowhere. It is a waste of work time.' (Development manager, EngiCo)

Table 8 summarises the role behaviour types identified in the study and shows how the identified behaviour types corresponded to expectations; if behaviour was expected, not conducting the tasks can be seen as either role-breaking or role-making behaviour, depending on whether the behaviour is negotiated and accepted. If behaviour was encouraged, individuals could decide whether to engage in behaviour. If expectations did not exist, individuals could engage in role-making behaviour. If the behaviour was disapproved of, individuals could engage in behaviour that was considered here as role-making or role-breaking behaviour, depending on whether the behaviour was negotiated and accepted in the organisation.

Table 8. Expectation types and behaviour types

Role expectation	Role-occupant's behaviour
Behaviour is expected (related to position or to individual person)	• Engages in behaviour = **expected behaviour** • Does not engage = **role-making** or **role-breaking behaviour**
Behaviour is encouraged	• Engages in behaviour = **encouraged behaviour** • Does not engage
Behaviour is not expected or forbidden	• Engages in behaviour = **role-making behaviour** • Does not engage
Behaviour is forbidden	• Engages in behaviour = **role-making or role-breaking behaviour** • Does not engage

These behaviour types occurred in different combinations among individuals: even within one individual's role in a certain system, different tasks were expected to varying extents. For example, in many contexts IT development was carried out in such a way that all grass-root professionals were encouraged to present ideas and expected to apply the novelties. In addition, technology-enthusiastic professionals may be given specific development tasks based on their skills. In this example, the role of a technology-enthusiast professional in IT development comprised of idea generation (encouraged), development (expected/individual) and application (expected/position). Professionals who were not technologically-oriented had roles that comprised of idea generation (encouraged) and application (expected/position).

These categories are used to evaluate whether an individual has an impact on his or her role, and to show that an individual may have a larger impact on role structures. Chapter 5 presents case-specific findings using the categories of task elements, role structures, and behaviour types described above.

5. Innovation and development systems in the case organisations

This chapter presents the main findings case by case. The findings in each case organisation are discussed as follows. Firstly, the case organisation and its general situation are presented. The focus then shifts to innovation and development activities. In all case organisations, these activities were seen to form various innovation and development systems, which were separated from each other based on the goals pursued, the participants, and the type of role structure involved.

The findings concerning each of the identified system type start by describing the general goals and the type of novelties in order to show the context and nature of activities. Two relevant dimensions are used to characterise the novelties. *The scope of the novelty* concerns the broadness of change; that is, whether novelties were organisation-wide or local, having an impact only on a certain organisational group. *The domain(s) of a novelty* concerns those dimensions upon which the novelty had an impact. The service domain concerns the creation of new value for customers either by developing current services or by creating new services. The domain of practices and resources covered the development of work processes, tools, methods and competences. Although these novelties were used in value creation, they were often not directly visible for customers. The organisational domain covered novelties related to the division of labour in the case organisation. Many novelties concerned several domains; for example, service development often had an impact on all three domains.

The categorisations presented in Chapter 4 are then used to describe the role structures in the systems and to show situations in which individuals influenced their roles and role structures. Each case description ends with a summary that compares the structure types in the identified systems, evaluates flexibility in structures, and reviews the autonomy of systems and the linkages between systems.

5.1 ArcCo

ArcCo offered various kinds of architectural and design services, as well as consultation in their fields of expertise. The firm was led by a small group of entrepreneurially-oriented partners and had previously resembled the "top entrepreneurial" mode quite closely (Sundbo 1997). Due to growth, the office was re-arranged a year prior to the interviews in order to distribute managerial tasks to a wider number of employees and to boost the development of important service areas. Key building types and other service areas were identified, and a unit structure was established around them. Newly appointed unit managers formed a new 'middle-management' layer in the organisation. Part-time administrative positions, such as HR manager, were also established, and suitable unit managers carried out these tasks in addition to their primary positions as unit managers. All of the unit managers and administrative personnel had architectural backgrounds.

The units varied with regard to the 'maturity' of their services; some units focused on service assignment types that were well-established and rather stable, whereas other units needed to develop their expertise and service concepts dynamically. Within units, several customer projects took place at the same time. In a typical assignment, the top management and the unit manager were involved in designing the main concept of the building, while a group of 'grass-root architects', led by a project manager, were responsible for detailed design. The assignments could also include other tasks, such as real estate development and coordination of the construction process. In addition to architects, the office had started to employ other professionals, such as behavioural scientists, in order to understand human behaviour in different physical spaces.

Although unit manager structure could be seen as a step towards increasing hierarchy, the interviewees considered the office to be quite informal and innovative. The large size and entrepreneurial orientation of the top management also enabled development efforts that were out of reach of smaller offices in the same industry:

'Compared to many offices, we are much more business-like. We are larger, we have resources, and we are organised. People have responsibilities. Therefore, it is quite easy to develop things if you are willing to do so; there are paths that you can follow, people you can discuss with, and resources we can allocate for development purposes.' (Unit manager # 1)

Members of top management, as well as some other interviewees, understood that there were roughly two types of innovation and development activities in the firm: those related to business development and those related to the development of architectural design. Business development concerned applying ideas deriving

from the 'business world' to ArcCo in order to leverage architectural and design competences in a novel way. Although these two fields were often not explicitly stated, the roles that organisational members played in these fields differed. Business development was initiated by the top management team, whereas architectural development was seen as the responsibility of every architect. Many interviewees considered 'business' logic as something that was external to traditional architectural occupation, so these developments provide an example of broader trends in PSFs to become more business-like (Hinings, 2005). However, the new unit managers were expected to take greater responsibility in business development, which meant that the roles were changing. Project managers and grass-root architects and designers generally focused on the development of traditional architectural competences, although interests differed among individuals, as characterised by one interviewee:

> 'Some of us are completely satisfied with their roles. And this is typical in our profession; the majority of architects are … they just want to be architects. I think it is perfectly okay; I'm not downplaying the role of the traditional architect. But I am also interested in things related to project development, including managerial and legal issues. Those who enjoy being in the position of a traditional architect or traditional project manager are not always the most progressive … Our office is full of both types.' (Project manager # 1)

5.1.1 Innovation and development systems in ArcCo

Closer analysis suggests that there were a total of eight innovation and development system types in ArcCo. These system types differed from each other with regard to the goals (that is, the novelty types), the participants, and the role structure types. Each type was identified in one or several contexts; for example, similar systems could be identified in many units, or only in one. Below, the systems are categorised based on the general goal to which the activities contribute. This is because the development of different kinds of novelties was carried out by different organisational members, which meant that it is important to understand the goals when describing the nature of the activities. However, there were also some differences in the role structures of systems with similar goals. Understanding similarities and differences in the characteristics of activities and the context provides an in-depth understanding of the principles that underlie role structures.

These systems are listed in Table 9 and categorised by the general goals and the novelty types. Six innovation and development system types were related to business development. Two of them were linked to strategic business development; these are labelled here as the *internal development of the organisation* and the *development of business models*. Two others were related

to organisation-wide IT-development; these were labelled as the *professional-driven* and the *IT-driven development of IT tools.* The remaining system types were specific to certain units; two different ways to develop a unit's service offering were identified, including *centralised service development* and *collective service development.* Finally, two system types were related to the development of architectural design, labelled as *the development of architectural design skills* and *the development of work practices.*

Table 9. System types in ArcCo categorised by novelty type

General goal	Innovation and development system	Scope of novelty	Impact on different domains		
			Service	Organi-sation	Resource/ practices
Strategic business development	*Internal development of the organisation*	Organi-sation		x	x
	The development of business models	Organi-sation	x	x	x
Develop-ment of IT tools	*IT-driven development of IT tools*	Organi-sation			x
	Professional-driven development of IT tools	Organi-sation			x
Develop-ment of existing services	*Centralised service development*	unit	x	x	x
	Collective service development	unit	x	x	x
Develop-ment of architectural competences	*Development of architectural design*	unit / project	x		x
	Development of work practices	unit / project			x

Next, system types are described one by one, starting with those systems that pursued goals related to strategic business development.

Strategic business development

Two types of innovation and development activities were derived from strategy and had an organisation-wide impact. These activities were seen to form two systems in which the top management was the dominant actor. The first system was labelled the *internal development of the organisation:* the activities within this system focused on the development of the organisation's internal structure and functioning, such as developing the unit structure and reallocating marketing tasks into lower organisational levels. The second system was labelled *the development of business models;* it covered activities that focused on the development of organisation's market position through various efforts that could

not be linked to any individual unit. Examples are the development of new services, the localisation and development of services for specific market areas, and the development of CRM strategy.

Although the novelties pursued were different in these systems, the participant types and the role structures were quite similar. Both systems had a coordinated role structure. Previously, the top management had typically been the initiator, decision-maker and coordinator in all these development efforts, whereas other organisational members conducted specific tasks allocated to them. Everyone was expected to apply the novelties. However, the top manager saw a need to enlarge the group of people who could think in business terms; therefore, the middle managers were also expected to participate in idea generation and decision making. At the time of the interviews, however, top managers noticed they were still acting as the primary idea generators, whereas middle managers developed the ideas further and ensured that the novelties were implemented in their own units. For example, the development of CRM was delegated to a marketing manager and the unit managers implemented CRM practices in their own units.

Some other employees participated in these processes by conducting specific tasks in the development and implementation (that is, individual-related expected behaviour). Some tasks were one-time assignments, whereas others were more permanent. For example, some project managers were appointed as 'area managers' who were expected to scan the market areas to identify development needs and suggest solutions for the market areas. In new service development, internal and external recruits were made to identify experts who were capable of developing and implementing the new service ideas.

Although these role structures seemed to be recurrent practices, they were to a large extent created and shaped by the top management. As partners, they were able to develop the strategy based on their own insights and shape their own roles as innovators. The CEO of the company explained this as follows:

> 'I consider business development to be one of my most important duties. And it derives from my own personal interests; I prefer being a business developer to being an operative manager. That is why we created the position of personnel manager; I was frustrated about being involved in all those HR negotiations. I am personally much more interested in the development of our business and I have shaped my tasks to match those interests.' (CEO, ArcCo)

These structures were influenced by the top management's role-making behaviour and seemed to reflect the personal aspirations and self-perceptions of these top managers. Individual characteristics also seemed to have an impact on the formation of middle-managers' roles. The top managers noticed that the ability to generate business ideas varied among middle-managers and that some were more active than others. Although idea generation was expected to some

extent, it was not enforced. Therefore, the roles of the top managers seemed to be a combination of position-related and individual-related expectations.

Participation in idea generation was not expected from people below unit manager level. This was due to time limitations and because traditional architects were not considered to be willing or educated to think in 'business terms'. The CEO felt that the nature of work tasks had an impact on business idea generation: individuals with customer responsibilities were more likely to present such ideas. The following quotes show how the CEO explained his expectations and how a project manager understood the reasons underlying the role structure:

'Our work environment is quite innovative and people are used to tackling creative challenges. But there are only a few persons who understand to develop our own business and production. Sure we could enlarge this group, but I am afraid the ideas could easily be rejected. I don't want to encourage people to generate ideas for new products, et cetera, if we would need to reply to the majority of them by saying that 'this does not work', or 'no can do' or 'there's no time' or 'we don't have the money', et cetera ... (CEO, ArcCo)

'New service opportunities and new customers are discussed in our executive team. These discussions are intentionally channelled to that forum. These activities have not been actively spread to lower organisational levels. We don't speak about those things within units because we trust on the abilities of the executive team. I think it is wise: sure we could spend our time on idea generation, but since we don't have enough knowledge about important factors to make decisions, it is a waste of time.' (Project manager # 2)

The quotation shows that the expectations related to these roles, or the lack thereof, were quite well understood in the organisation. However, some interviewees felt they were excluded from strategic discussions. These instances can be interpreted as conflicts between role expectations and individuals' motivations, which resulted in different reactions. One of the interviewees felt that 'hierarchy must be respected', and therefore chose not to try to participate. Others aimed to create a role in strategic business development and succeeded at it. For example, a grass-root employee with an educational background presented an idea concerning HR practices and was involved in carrying out its development. However, these instances did not seem to have permanent influences on role structures, as the idea generation forums in strategic business development remained out of reach of the grass-root employees.

Development of IT tools

In addition to strategic business development, the development of IT tools also had an organisation-wide impact. ArcCo had an IT department with a full-time IT

manager who had an important and explicit role in these development activities. Two innovation and development systems in IT development were identified; both had empowered structures but slightly different types of novelties and participants.

The first system was labelled here as *IT-driven development of IT tools*. It focused on developing IT tools that were required especially in administrative tasks and in business development. Examples of the novelties were project management tools and CRM tools. This system was driven and coordinated by the IT manager. Apart from the development needs he identified himself, ideas derived from top management. In addition, all employees were expected or encouraged to communicate problems and present ideas. The IT manager was given an IT budget that he could use somewhat autonomously, although the CEO made decisions concerning large investments. The IT manager was expected to coordinate the development processes and specific development tasks were then delegated to employees based on their own preferences and skills. The IT manager also had some subordinates whom he employed in development tasks.

Although the IT manager had an architectural background, he did not consider himself qualified to understand development needs in architectural design tools: he felt that the developers needed hands-on experience in architectural design and the opportunity to test the tools in real projects. Therefore, the development of these tools was typically driven either by top management or by professional employees themselves. Since the participants were slightly different, these activities were understood to form another system, termed as *professional-driven development of IT tools*. The novelties included CAD tools, for example. Everyone was encouraged to suggest ideas, the top management or unit managers coordinated the development, and a group of professionals who had the necessary skills and motivation for such development were given the main responsibility for the development work. The IT manager was responsible for technical specifications and sourcing of programmes. The new tools were often tested in one customer project/group before organisation-wide launch.

The individuals involved in these innovation and development systems faced certain challenges due to problems in authority. Although development was centrally coordinated, the coordination was loose and no-one really had the power to push the development processes forward. Professional-driven development was often delayed since other work tasks were considered more urgent. It was also difficult to change employees' work habits unless they identified the need themselves. The IT manager noticed that the professionals did not have time to learn to use new tools and hence preferred utilising the old solutions. Due to problems in launch, the IT manager sometimes felt as though his work was meaningless:

'In my work, it is extremely demotivating to get feedback like "well … we don't want these [tools], cross-ruled paper is just as good".' (IT manager)

The IT manager did not feel as though he was in a position in which he could persuade employees to apply the new tools; therefore, he considered his role as almost too autonomous. He felt that top management's control was called for. This can be interpreted as a conflict between role expectations and his own authority.

Development of an existing service within a unit

The unit managers were expected to drive the development activities that focused on a single unit, as top managers aimed to reduce their own roles in these activities. The findings suggest that the roles of unit managers were not yet completely internalised by those acting in the position. For example, upon being asked about the possibilities for service innovations, an interviewed unit manager pondered his own role as follows:

'I started wondering whether it is really the case that our office and work practices prevent us from dedicating time for development – it is easy to say that "a boss" should give us a mandate to develop things, but as unit managers we actually are such bosses ourselves; we should start thinking about these issues independently, we cannot wait the push to come from above …' (Unit manager # 1)

As in strategic business development, the roles varied here based on personal characteristics. Top managers were less involved in those units in which unit managers were very active but more involved in other cases.

A distinguishable effort to develop the unit's service offering as a whole was identified in two units. However, the participants and the role structure types differed in these systems. The first system was labelled as a *centralised service development* since it had a centralised role structure. The unit manager was the main developer and considered his subordinates to be primarily responsible for normal customer work and in the implementation and utilisation of novelties.

The unit manager had initiated the original ideas for the unit's service concept himself and had taken primary responsibility for modifying the concept. The concept was continuously developed by exploring new ideas and trying them out in new customer projects. The 'general' service concept was improved based on these experiments. Top management participated only in decision making concerning large investments. The unit manager considered himself autonomous as long as ideas were successful and the top management trusted him. However, he felt that top management was a valuable 'mirror' against which he could reflect his ideas, and he felt they could be more concerned with the unit.

The unit manager felt that it was necessary to have a lot of experience in order to come up with useful ideas:

'In the development of innovations in our business, the fact is that anyone can come up with crazy ideas, but certain [useful] ideas can only be developed through experience.' (Unit manager # 2)

Employees were not expected to generate novel ideas concerning the service concept, although the unit manager did discuss new ideas with a couple of experienced project managers. The unit manager encouraged employees to bring up their opinions and problems concerning the unit's services, but few ideas emerged; he interpreted this as a question of motivation or courage. The employees sometimes felt suffocated, as the following quotation shows:

'I have a feeling that I could do better if I had more possibilities to influence.' (Project manager # 3)

Despite not being greatly encouraged, the interviewed employees said that they were able to get their ideas through if they did not give up easily; hence, they had some possibilities for role-making. However, challenges in getting their voices heard directed their development motivation to the development of architectural design, which is discussed later on.

The other case was labelled as a *collective service development*. Top management and unit management had noticed that the service concept needed to be updated and decided to organise it as a collective effort. This kind of collective role structure was considered as a 'pilot' of a new innovation model, which also included a planned innovation process model and specific resources. The employees were partly released from customer work to participate in the process. Top management and the unit manager acted as normal participants in the workshops, and decisions were made collectively among all participants. Coordination responsibilities were given to one project manager, who designed the innovation process as a series of workshops and engaged everyone. Since all unit members were involved, this can be seen as position-related expected behaviour. Individuals were also given individual tasks related to developing specific service elements. During the process, important service modules were identified, new elements were developed, and tools supporting the service delivery were created. At the time of the interviews, some ideas had been applied in customer projects, but the overall concept was still under development.

Comparisons between centralised and collective structures suggest that the leadership style and the skills of a unit manager had an impact on the role structure. In the first case, an experienced unit manager acted as a main developer; in the other, the unit manager wanted to utilise the expertise of all

personnel. Therefore, the unit managers seemed to be able to shape role structures based on their own insights.

Service type could also explain the differences. The service in the unit in which collective structure was identified included consultancy elements, which was not typical in AdviCo. Whereas an experienced architect would usually develop the main concepts in an architectural project, the projects in this unit were conducted by a cross-disciplinary team, with every person having a unique role. The unit manager described the unit as a team of 'top professionals', who were the best experts in the service area. Practical experience and the ability to try ideas out rapidly in customer projects were seen as important factors in idea generation and development. Interestingly, the employees in this unit also seemed to feel as though it was less difficult to present ideas concerning strategic business development. Their empowered role in service development may have also had an influence on their perceptions of their ability to create a role in other development activities.

Development of architectural competences

In addition to the explicit service concept developments discussed above, services evolved continuously alongside customer projects. Due to the nature of architectural work, every customer assignment was unique. These unique solutions can be seen largely as part of a normal architect's work rather than as innovation and development activities. In this study, solutions that the interviewees perceived as distinctively novel compared to 'normal' solutions were considered as beneficial novelties. Examples are novel technical solutions and customer-specific novel collaboration practices that could potentially be replicated in other projects as well. One grass-root employee describes the creation of such novelties as follows:

> *'These ad hoc activities take place in our customer interface, creating small-scale random innovation … This happens because every customer is different: during these years we haven't had two projects with similar solutions and methods … If you happen to have a customer who is willing to delve deeper … you can come up with novel things that could be applied in other customer projects, as well. Such novelties you do not even recognise as innovations.' (Professional employee # 1)*

Two systems were identified: the development of architectural design and the development of work practices. Both systems had dispersed role structures, but the types of novelties were different. *The development of architectural design* focused on improving the ability to create novel architectural solutions. The final outputs were embedded in design plans, such as combining different recreational concepts in spas and using novel materials in buildings. One project manager

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discussed the differences between customer-specific typical outputs and the development of architectural design as follows:

> 'Architecture as an art is difficult [to understand from the perspective of an innovation], because it is always tied to specific project. As such, those ideas are difficult to copy to another project. But if you consider the development of professional expertise and know-how, it is different. An architect's expertise consists of the knowledge of buildings, materials, products, building engineering systems – it is very important to know these things, since the technology evolves rapidly. It is, of course, assumed that everyone explores these things actively at work and during leisure time, as well [laughing] – people read magazines, et cetera. The more such people we have, the more our expertise is developed.' (Project Manager #3)

The quote also shows that the development of architectural design was seen as the responsibility of every architect. Although it can be seen as expected behaviour, it seemed to be embedded in the professional identity of the employees, rather than in explicit job requirements. The development activities were conducted autonomously in individual customer projects, which is why the role structure was considered to be dispersed. However, the development of architectural skills was encouraged at the firm and unit levels through various practices, including organising space for creativity and encouraging employees to participate in courses and fairs. The spreading of good solutions was enhanced in meetings where solutions were shared, and by creating a 'best practice' database for design solutions.

The other system was labelled as the *development of work practices:* in addition to organisation-wide development efforts, work practices were also constantly modified within units and project teams. Project managers and project teams were quite autonomous in these activities. The IT manager was also engaged if IT tools were needed. Although these activities were seen as beneficial for the firm, they were not explicitly expected. The project managers felt that the level of involvement depended on each individual's own motivation:

> 'During the project, there is not much time to spend on development. If you want to develop things, it depends on your own proactivity, and it requires working extra hours and being active yourself. There are no organised possibilities for development work in projects. And I'm not sure where it should happen – if it takes place between projects, who would pay your salaries then? ... I guess this is a common problem everywhere.' (Project Manager #3)

Although individuals and project teams created these novelties autonomously, the activities can be seen to form a unit-wide system; together, these novelties improved the unit's architectural design and design practices.

The project managers' roles in innovation and development activities often focused on these two dispersed systems. These novelties were considered easy to implement, since the individuals could make decisions autonomously. One project manager explained this as follows:

> *'I don't feel that my role is to declare ideas that revolutionise the whole firm. I have focused on developing my own work practices and methods. It is what I can do, where I can advance my ideas and make progress. It is more rewarding, as well [laughs].'* (Project Manager #3)

5.1.2 Summary of findings in ArcCo

Similarities and differences were identified in the role structures in the studied innovation and development systems. The main characteristics of the systems are summarised in Table 10, including the recurrence of the system (that is, whether a system is considered as a typical practice or identified only once), the breadth of the system in terms of participants, the level of goal setting, the role structure types, the dispersion of task elements, and examples of novelties. The factors that may explain role structures and linkages between systems are discussed next, followed by an evaluation of the autonomy of systems and linkages between systems.

The *internal role structure type* varied between systems. Apart from the collective service development system, decision making in all systems contributing to 'business development' was centralised to either top management, unit managers or the IT manager. Decision making in the development of architectural competences, on the other hand, was dispersed. Comparisons between systems suggest that these differences depended on the skills needed in evaluating the novelties; top management had competences in understanding business logic, whereas architects were able to evaluate architectural solutions based on practical knowledge gained in everyday customer projects. Another explanation is money; top management wanted to be involved in all development efforts that required investments.

In cases in which decision making was centralised, innovative behaviour was also controlled to some extent. Centralised and coordinated role structures were identified in strategic business development and in centralised service development. In these systems, experience and business orientation was needed in order to be able to generate useful ideas. An empowered structure was identified in IT development systems. This structure seemed to occur since practical hands-on experience was needed in idea generation, but development required investments and technical skills.

With regard to flexibility, ArcCo shows that the top management were able to shape and create new innovation and development systems and modify their own

roles. Also, unit managers seemed to have a considerable effect on role structures in their units. In addition, the skills of employees at lower levels had an effect on their roles: individuals with skills in IT or certain market areas were given tasks to develop these domains. However, not all grass-root employees found it easy to develop roles in activities in which they were not expected to participate.

With regard to the innovation and development systems' *linkages to wider organisational context*, it seemed that both the goal setting and the decision making were conducted within each system. Hence, there was no 'external' goal setting that would have explicitly guided the activities; the systems at different organisational levels were autonomous if no extra investments were needed. Independence in goal setting at the unit level could be caused by the top management's attempts to focus on strategic business development and to delegate responsibilities in existing business to lower organisational levels. However, interviewees said that the top management and the other organisational members often had informal discussions that could be seen as one coordination mechanism, having an influence on many innovation and development activities.

Expertise of the participants may explain the level of decision making and goal setting; those who best knew the development needs and were responsible for the domain in question set the goals and made decisions. The level of trust in the personnel's capabilities to act independently was illustrated by the CEO's comment that he did not even know what kinds of development efforts were going on within units. Top management also noticed that their excessive involvement in customer projects violated the professional roles of employees, so they aimed to participate only if their support was needed.

As Table 9 shows, several systems had an impact on a single domain. Organisation-wide systems were linked to one another, as the tools required in the development of business models were developed in the IT development systems. In many other cases, however, there were neither explicit conflicts nor linkages between different systems' goals or outputs. Systems that had an impact on the *service domain* focused on different kinds of services; strategic business development focused on the creation of new services or the creation of business models for specific market areas. The systems within units were limited to the specific unit, and there were no linkages between units (although there had been discussions of the creation of collaborative offerings). However, there were some linkages between the development of professional competences and the development of a unit's service concept. In the best cases, the former contributed to the latter. On one occasion, for example, a solution developed in a specific customer project was later included in the unit's general service concept.

The novelties developed in all systems seemed to have some implications for the domain of *resources and practices*. However, the interview data did not reveal

conflicts between systems; conflict only emerged between the time spent on learning new tools and the normal customer work. The *organisational domain* was developed within strategic business development efforts, either as a separate activity or as a part of new service development activities. Also, radical improvements in the current services within units had an impact on the division of labour within units. The structure within existing units was not influenced by organisation-wide developments, which meant there were no linkages among these systems considering the organisational domain.

Table 10. Role structures in the innovation and development systems identified at ArcCo

System	Recurrence of the system	Breadth of the system, participants	goal setting	Role structure type	Idea generation	Development	Application	Decision making	Examples of novelty types
Internal development of the organisation	On-going, large change	Organisation	Top mgr.	Coordinated	Top mgr., unit mgr. (EX), other employees (ST and ME/BE)	Managers and employees with required skills (ST)	Employees concerned with the novelty (EX)	Top mgr.	Unit structure, HR and marketing positions
The development of business models	Typical practice	Managerial/unit	Top mgr.	Coordinated	Top mgr., unit mgr. (EX), other employees (ST and ME/BE)	Managers and employees with required skills (ST)	Employees concerned with the novelty (EX)	Top mgr.	Development of certain market areas, new services
IT-driven development of IT tools	Typical practice	Organisation	Top mgr./IT mgr.	Empowered	IT mgr. (EX), everyone (EN)	IT mgr. (EX), employees with required skills (ST)	Everyone (EX)	Top mgr. / IT mgr.	Project management and CRM tools
Professional-driven development of IT tools	Typical practice	Organisation	Top mgr./IT mgr.	Empowered	Everyone (EN)	IT mgr. (EX), employees with required skills (ST)	Everyone (EX)	Top mgr. / IT mgr.	CAD development, best practice database
Centralised service development	Typical practice (in one unit)	Unit	Unit mgr.	Centralised	Unit mgr. (EX), other employees (ME/EN)	Unit mgr. (EX), other employees (ME)	Employees in the customer projects (EX)	Unit mgr.	Elaborations of a service concept in a unit
Collective service development	On-going, large change (in one unit)	Unit	Top mgr. / collective	Collective	Everyone in the system (EX)	Everyone in the system (EX/ST) Coordination by one employee (ST)	Everyone in the system (EX)	Everyone in the system	Elaborations of a service concept in a unit
Development of architectural design	Typical practice in many units	Unit/project	Project mgr. / prof.	Dispersed	Everyone in the system (EX)	Everyone in the system (EX)	Everyone in the system (EX)	Project mgr. / prof.	Novel customer concept/ approaches
Development of work practices	Typical practice in many units	Unit/project	Project mgr. / prof.	Dispersed	Project mgr. & professionals (EN)	Project mgr. & professionals (EN)	Project mgr. & professionals (EN)	Project mgr. / prof.	Tools in customer interaction and project coordination
EX = expected behaviour related to position, ST = expected behaviour related to individuals, EN = encouraged behaviour, ME = role-making, BE = role-breaking									

5.2 MarCo

MarCo was a part of an international company providing marketing communications services. The Finnish subsidiary operated rather independently within the scope of the business defined by headquarters. However, it served many international customers operating in Finland and utilised tools and process models developed by headquarters. MarCo consisted of three units organised around different types of marketing channels, including traditional media, event marketing and digital channels. The units were organised into teams led by project directors who were responsible for certain customer accounts. The project directors and upper management were involved in clarifying customers' business ideas underlying marketing campaigns. Individual customer assignments were carried out through project teams comprised of a project manager, the 'creative people'; that is, an art director (AD) and a copywriter, and assisting personnel. An AD and a copywriter autonomously created the actual creative solutions.

Throughout its history, the company faced a series of mergers and other transformations. The latest merger took place six months earlier when two companies integrated their businesses to improve their market positions in Finland. This merger created a challenge of unifying two organisational cultures. During the merger, turnover in personnel accelerated; some of the old employees resigned and new employees were hired. In addition, a new CEO was hired from outside the advertising industry who was eager to apply disciplined management methods at the company. At the time of the interviews, the worst turbulence seemed to be over but many interviewees still felt a lack of direction and waited for top management to take a clear stand on its future strategy.

The current turbulence and a difficult financial situation posed several challenges for the organisation's innovation and development activities. New development goals emerged, and employees' roles in more established activities were being challenged. The situation was very interesting for this study because the interviewees acknowledged many cultural issues typically taken for granted. Old employees (that is, employees at the firm for several years) thought that role expectations in innovation and development activities were previously more explicit, whereas in the current situation whether development ideas were considered good or bad was not always clear.

The new organisational members were also challenging the traditional organisational culture in the advertising industry. The firm was divided into two camps with respect to how the business should be developed. New employees, including the CEO, believed that the company's operations should be developed in a more disciplined direction. Efforts were made to rationalise the business, unify the processes and develop financial and business measures. Many employees accustomed to the old practices had difficulty accepting a role in these

rationalisation efforts. They wanted to focus on improving the substance of the advertising and preferred a traditional, autonomous advertising culture, which they felt was important for creativity in their daily work. Tasks and educational background also had some influence on these attitudes; the interviewees with an education in marketing and who operated in project management were more sympathetic to discipline, whereas many creative designers found that the new methods suffocated their work. The following two quotations, firstly from an old employee and secondly from a newcomer in the industry, characterise the attitudes towards the typical advertising culture.

'In advertising agency the organisation is flat. There is no hierarchy and no bureaucracy. Weakness is that unless we have common goals, we'll have anarchy: there is no formal power in this business – there is only charisma and prestige. A CEO is of course able to hire and fire people. But your true power depends on your usefulness for the organisation and for the customers. Whatever your position is, if you sit in a customer meeting without giving any contribution, you can be sure you won't be invited again.' (Member of top management #1)

'The advertising industry has been stagnated, old-fashioned, conservative, and selfish. It's sad, but it's true. And they have been able to live broadly. Customer has always paid. They have succeeded in carrying on, without measuring [performance], and without an ability to report... Advertising agencies have had an outstanding ability to excite customer, it is incomprehensible, and personal relationships rule to great extent.' (Project director # 1)

Some interviewees did not consider improvements in efficiency as improvements at all; the new methods were sometimes viewed as detrimental to creativity. However, the interviewees who favoured disciplined methods thought that decent work methods would release employees to focus on creative work. These attitudes created competing goals that appeared in different innovation and development systems.

5.2.1 Innovation and development systems at MarCo

Seven innovation and development system types were identified (see Table 11). Two systems were new and linked to the on-going change process concerning the rationalisation of the organisation. These systems were labelled *developing the organisational structure* and *developing managerial tools*. The other systems were more traditional. Three interlinked systems focused on the development of advertising substance: *strategic service development, new business* and *the development of novelties within customer projects*. The remaining two types of systems focused on developing resources and processes. These two system types

were labelled *improving tools and skills in advertising* and the *development of customer-specific work practices.*

Table 11. System types at MarCo categorised by novelty

General goal	Innovation and development system	Scope of novelty	Impact on different domains		
			Service	Organi-sation	Resources & practices
Rationalising the organisation	*Developing the organisational structure*	organisation		x	x
	Developing managerial tools	organisation		x	x
Improving the substance in advertising solutions	*Strategic service development*	organisation	x	x	x
	New business	organisation /project	x	x	x
	Development of novelties within customer projects	unit/project	x	x	x
Enhancing advertising capabilities	*Improving tools and skills in advertising*	organisation			x
Improving a team's work	*Development of customer-specific work practices*	team		x	x

These systems, their participants and their role structures are next briefly described. The description starts with the new systems because the current situation at MarCo was characterised by rationalisation.

Rationalising the organisation

Rationalising the organisation was considered a central development task at the time of the interviews. The main driver for rationalisation was the accelerating competitive situation in the industry, which put pressure on increasing efficiency. Another driver was the new CEO, who aimed to apply to MarCo managerial methods used in her previous organisations. Two innovation and development systems were identified. The first aimed to improve the organisational structure, and the second aimed to develop managerial tools.

A large change effort occurred in which the firm's managerial structure was improved and new supervisory roles were created. These development activities were seen to form a system labelled the *development of organisational structure*. The goal was to delegate responsibilities and power efficiently. Previously, the

CEO had all financial and supervisory responsibilities, whereas some of these tasks were now delegated to project directors. The role structure in this system was centralised, as the CEO was the main idea generator and developer and other individuals in managerial positions were expected to implement the changes.

The second system was labelled the *development of managerial tools*. The goals were to unify and rationalise main processes and to make financial and resource situations measurable and controllable. The novelties developed included resource planning systems, project management tools and several guidelines and tools to control vacations and working time. The role structure was coordinated and focused on the managerial levels, with top management (that is, the CEO and CFO) responsible for developing the ideas and other members of management being encouraged to suggest ideas as well. Typically, the CFO coordinated the development processes, and specific development tasks were delegated to different individuals. According to top management, all employees were expected to apply the novelties and were encouraged to suggest ideas.

Whereas the roles of managers seemed to correspond to expectations, the roles and attitudes among other employees were diverse. Some of the interviewees considered the novelties as beneficial and participated in idea generation. The CEO also hired new recruits who were accustomed to more disciplined work methods – these individuals seemed to act as examples of modes of new thinking among the personnel.

However, the interviews made evident the resistance to change. Some individuals questioned altogether the benefits of such novelties. In particular, those who were accustomed to a traditional culture had difficulty accepting external control directed at their work and discussed the novelties with terms such as 'systems' or 'forms', in contrast to 'real' work. The following quotations show the controversial attitudes towards managerial tools: the first interviewee explains the positive sides and the second described the negative ones.

'I don't feel processes constrain creativity – quite the opposite. If you know where a train goes, you know there are rails with certain gauge, and you know the gauge remains constant... And you know where the train stops, that there are certain rules, that you need to have a ticket and to show it to the conductor. If these things are under control, you can focus on your core business. Think of situation where you don't know the schedules, the tickets, whether the rails exist anymore, etc. This is not the Soviet Union, but it is important to have rules that treat everyone equally'. (CEO)

'The competition is hard, and we need to create profits... But it really hampers the creative work. If there's always someone behind your back, monitoring, and someone else in the front, and then you have half-dozen systems everywhere, and your every minute is monitored... And I understand, this is the way to go - otherwise our people would just hang around and surf on the net, but it hampers our creativity enormously.

If I may exaggerate, soon it will reach a point where we'll have a 'creative moment' every Tuesday at 10.15-10.45… People talk about this, and they become extremely uncreative, because creativity means that if you see a granny in the cash deck in a supermarket, having difficulties in lifting her groceries, you realise you have to invent some sort of lift system to help her – that is a creative situation, not the one where we sit in a meeting room and become creative'. (Art director #1)

These attitudes influenced employee behaviour in different ways. The interviews did not reveal any situations where employees did not apply the novelties, but many interviewees did not consider development of these novelties as their task. However, they were involved if they were expected to do so. One interviewee believed that because changes happened anyway, he considered his role as a discussant to be responsible for providing feedback on the novelties; therefore, he somehow participated in idea generation. However, top management aimed to encourage employees to come up with solutions, and communicating problems without solutions was not encouraged. Perhaps this environment caused some creative people to consider getting involved in these development processes forbidden. These differences in behaviour suggest that the expectations were unclear, and employees adopted different types of role behaviours based on their motivation and interpretation of expectations. However, no one seemed to directly engage in role-breaking behaviour.

Reluctance to participate in rationalisation efforts also occurred because the interviewees were afraid that the efforts put into rationalisation diminished the resources available for improving advertising capabilities. These interviewees believed that their primary role was to develop the substance of advertising. One interviewee explained this worry as follows.

'The thing is that the ideas that are expected from us should relate to our business, i.e. to advertising communication. But whereas the focus should be on a fence, here we discuss about fencestakes. We talk about reports and forms etc. that are not our core business. Administration should be developed, that is fine, but it should play a minor role. And the question is, where's the beef? And the beef is in what we sell and in why we exist: we are not here to fulfil forms – we are here to make good advertising for the customers. And this idea gets lost once in a while'. (Project Director #2)

Next, the systems that focus on developing the substance of advertising are discussed.

Improving the substance in advertising solutions

The substance of advertising solutions concerned developing services or service elements that created value for the customers. In this field, three types of activities existed that were partly interrelated; however, the scope of a novelty,

the participants and the role structures were different. Therefore, these activities are treated as separate systems that are linked with one another.

Strategic service development was identified as an organisation-wide system that aimed to keep the company's service offering competitive. General trends in the industry were identified and translated into novel solutions. Examples of these activities are improving capabilities in new marketing channels, developing multi-channel solutions and developing offerings that include consultancy related to brand strategies. Tentative service concepts were created and supported by methods and models available in international headquarters, and necessary competences and structures were developed. The outputs of these activities can be understood as service concepts and ideas that were concretised into actual customer solutions in the other two systems subsequently discussed[13].

A coordinated role structure was identified, and the most active participants were those with managerial roles from top management to project directors. Opportunity exploration and idea generation were considered the responsibility of top management, and these ideas were discussed and developed among the other managers. Unit managers and project directors were responsible for implementing the goals in their units. Other organisational members were not much encouraged or expected to generate strategic ideas. The CEO encouraged everyone to participate if they had the time, but this encouragement was not actively communicated to employees. This seemed to be due to the post-merger situation, where the CEO wanted to focus first on the most urgent development needs. Some of the creative people interpreted the expectations towards their roles as the readiness to develop own capabilities and task descriptions according to the visions developed by management. However, others wanted to act as drivers for change and considered it their personal responsibility to communicate ideas and concerns regarding the firm's visions and its external image. Both behaviour types seemed to fit within existing expectations, although the interviews did not reveal whether the ideas of the latter interviewees were taken into account when making decisions.

The actual search for opportunities to implement these new concepts and ideas was carried out in two separate innovation and development systems, labelled *new business* and *the development of novelties within customer projec*ts. Although interlinked, these systems were viewed as separate from strategic service development; in addition to strategic goals, customer-specific situations and other external opportunities/challenges acted as drivers in these systems.

New business was an organisation-wide system with an aim to develop novel customer cases. These activities included participating in advertising

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[13] These outputs could also be understood as one sort of expertise-field innovations, which remain potential until a customer is reached (see Gadrey & Gallouj, 1998).

competitions and exploring market opportunities and opportunities within existing customers. Some of these activities were normal sales activities; however, if a novel kind of advertising solution was developed, the activities were understood as innovation and development activities.

An organisation-wide empowered structure was identified, coordinated by one of the project directors. In idea generation, most explicit expectations were set towards two groups. Firstly, top management was involved, since they had both contacts and status, which were viewed as important to reach new customers. Secondly, the project directors were involved because of their customer contacts: they were expected to both explore new customers and develop offerings for their existing customers. After a potential customer was identified and objectives clarified, the development of an advertising solution was delegated to a suitable pair of 'creative people', i.e., an AD and a copywriter.

In addition to this expected behaviour, top management aimed to encourage everyone to generate new business ideas. Interviews with the creative people showed that these expectations were not very clear to them, and their roles seemed to depend on individual motivations. The exploration of opportunities was viewed as requiring extensive knowledge of customers' situations and trends in their industries, and managers were believed to have better access to networks in the industry. Therefore, some interviewees considered that new business ideas should not be formally expected from creative people. However, the *ability* to identify new opportunities was viewed as an expectation embedded in their professional skills. Hence, motivated individuals engaged in idea generation as something 'extra'.

'The ability to notice things, quite broadly, you should be able to do that... For example, you should be able to imagine how grogeries develop in Finland during the next five years. You should be able to come up with some ideas – if you are not, you might be in a wrong business (laughing)'. (AD #1)

Another system type linked to strategic service development was *the development of novelties within customer projects*. These activities were conducted in existing customer projects. Although every advertising solution was somehow unique, the analysis focused on solutions viewed as new in relation to typical advertising solutions. Rather than being intentionally pursued, these novelties were often born on an ad hoc basis in customer work. Examples include novel ways to use event marketing, novel ways to use websites in marketing and systematisation of a service offering for an individual customer.

Dispersed role structures were identified as novelties were created quite autonomously in customer projects. The participants consisted of members of customer project teams. Managers also participated in some assignments, articulating a customer's business objectives and searching for opportunities to

implement strategic service development objectives. Project directors were expected to quite independently plan the service offering for each customer, and the creative people had the main responsibility for creating the actual novel advertising solutions, which they did rather autonomously.

Enhancing advertising capabilities

In addition to the aforementioned activities that directly influenced the service domain, the *improvement of tools and skills in advertising* was identified as an organisation-wide system that supported the aforementioned activities. This system comprised of several development practices linked to one another through their goal to improve the advertising skills of individual employees. Skills were developed through courses, training and participation in creative competitions, and through the development tools and process guidelines for customer work.

An organisation-wide empowered structure was identified. The goals were defined at managerial levels, and a strategic manager was appointed as a 'learning officer' who was expected to coordinate skill development and to identify training needs and relevant courses. Everyone was encouraged to develop their expertise by participating in courses, events and competitions, and by utilising creativity tools in their work. However, the utilisation of tools was not mandatory; at the time, individuals could decide for themselves whether or not to use them. In addition to these expectations, some of the new employees engaged in role making by suggesting ideas and by participating in the creation of new tools based on their earlier work experience.

Many interviewees saw that creativity in advertising was not as emphasised as it was earlier. Although rationalisation efforts were blamed for this change in emphasis, customers were also seen as having an influence. The company had many long-term international customers whose assignments included the localisation of campaigns invented elsewhere. The interviewees said that such routine assignments did not include possibilities for creativity, which subsequently affected the firm's image as an employer. Grass-root employees were waiting for top management to become more active in renewing the business. On the other hand, management wanted employees to see that they themselves could stimulate changes through their own activities and attitudes.

Development of a team's work

Although organisation-wide changes were recently conducted, team-level development activities were also identified. The goal was to improve team-specific work practices and division of labour. The driver of these activities was to make the work easier and to solve problems identified in customer projects. The

following quotation shows differences in the motives underlying the development of these and organisation-wide novelties.

'I focus on the perspective of my own work – for example, when I suggest changes in the projects' practices, I am not thinking about the schedules, I aim to improve methods to generate outputs which are beneficial for the customers and to which I am satisfied with myself. Of course they are beneficial for the office, but I often focus on my own work tasks as a designer'. (AD #2)

These systems had empowered structures: the project directors were responsible for the team's work and, therefore, coordinated the work and made decisions, and other team members participated in idea generation and development activities. The roles of team members varied slightly among teams; depending on the team leader, collective and less collective processes were identified.

5.2.2 Summary of finding at MarCo

Table 12 provides a summary of the main characteristics of the role structures in innovation and development activities. Almost all innovation and development systems were characterised by centralised decision making. Exceptions were the development of novelties within customer projects for which dispersed structures were identified: a project director made formal decisions, but an AD and a copywriter were practically able to make actual decisions based on their professional skills. Development decisions were centralised for improving tools and skills in advertising, but individuals' decisions concerning whether to apply novelties seemed dispersed.

  With regard to innovative behaviour, the systems could be divided into two types. The systems concerning strategic service development and rationalisation had either coordinated or centralised structures in which idea generation was limited to upper organisational levels. Although idea generation was not forbidden from other organisational members, it was not actively stimulated, likely because management aimed to create a coherent vision concerning these development activities. Moreover, taking into account everyone's opinions, especially in the post-merger situation, was viewed as too challenging. One interviewee speculated on the situation as follows.

'I guess the managers have great plans, but they won't reveal them in advance. Probably because we are quite active and mouthy, and therefore we might mix up the plans if we knew them'. (Copywriter #1)

Decision making was also centralised in the systems that focused on improving the substance of advertising. However, everyone was more actively encouraged to participate, and the role structures were empowered or dispersed. Broader

participation in these structures could have been caused because the skills related to advertising substance were dispersed throughout the organisation. In contrast, skills and motives related to rationalisation focused on top management.

As previously shown, interviews suggest that the role structures in many innovation and development systems changed during and after a merger, and new systems were born. These systems were not yet stabilised and their relationships with the old ones were ambiguous, which seemed to cause unclear expectations, especially concerning the roles of the creative people. If the expectations were not clearly articulated, individuals had difficulty defining their roles in these systems. Another reason was that the activities that were normally encouraged were not encouraged explicitly at the time of financial difficulties. These ambiguities seemed to cause different reactions. Many creative people were quite passive in organisation-wide development systems and waited for the situation to become clearer, whereas others aimed to influence the on-going changes.

Because the CEO was able to create new innovation and development systems, the case also shows that the innovation and development systems were flexible. However, the ability to modify systems was bound to the position. At lower levels, conflicts were identified between some development goals and individuals' motivations. As previously discussed, one reason was that the goals related to rationalisation and to the development of the advertising substance were sometimes seen as competing. However, no new systems or role-breaking was identified among individuals who were resistant to rationalisation.

The *linkages* between systems therefore included those that supported one another and those viewed as cannibalising one another. The systems that pursued the goal of improving the substance of advertising and advertising capabilities supported one another: strategic service development and the development of capabilities were concretised in new business development and in the development of novelties within customer projects. The managers acted as links between these systems because they aimed to identify opportunities to implement strategic ideas. These systems were viewed as interrelated because only some novelties were in line with the strategy; the development of individual customer-specific novelties was also driven by situation- and customer-dependent factors. It seemed that the customer projects were pursued for other reasons, and only after they were identified were the possibilities to implement strategic objectives within the project explored.

The systems that aimed to rationalise the organisation also supported one another. The data revealed no conflicts between organisation-wide rationalisation and the development of team-specific work methods. However, some team leaders noticed that they implicitly put more effort into the development of teams, which diminished efforts put on organisation-wide activities.

However, the linkages between rationalisation and the development of the substance of advertising had controversial relationships. Organisational members disagreed about whether these systems supported or cannibalised one another. The cannibalisation was thought to have two forms. According to the first form, both goals could be separately good; however, the development resources put to the other activities were viewed as diminishing the resources available to the other. According to the second viewpoint, a trade-off existed between the goals: development of one was detrimental to the development of the other; in other words, creativity and rationality could not co-exist. Management faced a considerable task in eliminating the fear of cannibalisation. In some instances such persuasion had failed, leading to the resignations of creative people – which most likely cannibalised the domain of advertising substance. Given these reasons, the situation at MarCo was interpreted as unstable and evolving.

Table 12. Role structures in the innovation and development systems identified at MarCo

System	Recurrence	Breadth of the system	goal setting	Role structure type	Idea generation	Development	Application	Decision making	Examples of novelty types
Developing the organisational structure	on-going, large change	organisation	top mgr.	centralised	top mgr. (EX/ME)	top mgr. (EX/ME)	everyone (EX)	top mgr.	supervisory positions, allocation of responsibilities.
Developing managerial tools	on-going, large change	organisation	top mgr.	coordinated	CEO & CFO (EX/ME), other managers (EN), (everyone EN?)	top mgr. & CFO (EX/ME), other managers/ everyone (ST)	everyone (EX)	top mgr.	resource planning systems, guidelines for HR issues
Strategic service development	typical practice	organisation	top mgr.	coordinated	managers (EX), everyone (EN/ME?)	managers (EX), everyone (ST/ME?)	everyone concerned with the novelty (EX), partly in other systems	top mgr.	multi-channel offerings, strategic consultancy
New business	typical practice	organisation / project	top mgr. / project directors	empowered	top mgr., project directors (EX), everyone (EN)	the coordinator and mgrs. (EX), certain project teams (ST)	certain project teams (ST)	top mgr. / project directors	novel service elements/solutions for new/existing customers
Development of novelties within customer projects	typical practice in many units	unit/ project	project director / prof.	dispersed	professionals (EX), everyone (EN)	professionals (EX)	professionals (EX)	project director	novel solutions for existing customers
Improving tools and skills in advertising	typical practice	organisation / individual	top mgr., specific mgr. roles	empowered	learning officer (EX), everyone (EN)	learning officer (EX), everyone (EN/ST)	everyone participates in terms of individual development and usage of tools (EN)	top mgr. / project directors	improvements in competences and tools; concretised in novel advertising solutions
Development of customer-specific work practices	typical practice in many units	team	project director	empowered	project director (EX), team members (EN)	project director (EX), team members (ST)	everyone in the team (EX)	project director	new pricing model, work process improvements

EX = expected behaviour related to position, ST = expected behaviour related to individuals, EN = encouraged behaviour, ME = role-making, BE = role-breaking

5.3 AdviCo

AdviCo was part of a large, international company offering auditing services and various advisory services in the fields of accountancy, tax, risk management and other financial issues. The Finnish firm was owned by Finnish partners, but the brand image, service areas and quality standards were unified within the chain. This study focused on the advisory service units and excluded accounting services. Advisory services were seen to best fit the research scope of the study because they are characterised by innovativeness and knowledge-intensity. The development of advisory services had been restricted given the Enron scandal in 2001, after which auditing firms came under strict compliance rules. However, during the past few years, concerns over conflicts of interest between auditing and advisory services had been decreased. Thereafter, these service areas began to grow rapidly.

Advisory services at AdviCo were organised into three units. The units consisted of several service areas, which were organised into teams focusing on specific services. The managerial hierarchy comprised of the CEO, unit managers, service area leaders and team leaders. In addition, a professional hierarchy consisted of a junior analyst, a senior analyst, an assistant manager, a manager, a senior manager and a partner. Partners led the units and senior managers or partners led the teams within the units. Those in a manager or higher position were able to conduct customer assignments independently, whereas managers supervised those below the managerial level.

The advisory service units were in a dynamic growth stage, and the current service portfolios in all three units were rather new. Interviewees stated that the units had to be innovative to achieve the growth objectives. Because innovativeness was not emphasised in the traditional auditing culture, the units had to modify old expectations and establish new practices to support innovativeness. One interviewee characterised this challenge as follows.

'It is a big challenge in our firm, since we are basically an auditing community... In auditing they are not supposed to be innovative, they need to be quite standard, and basically their competitive advantage is to have a standardised product... Of course they are able to develop things, but innovative persons might not like it there because they need to be able to perform reliably and to produce standardised quality... And these requirements have an impact on our business culture as a whole. We are not an innovative organisation, but in our [advisory] services, we ought to be innovative to survive and to succeed.' (Partner, unit manager #1)

However, the advisory units were able to cooperate with the international chain to exchange knowledge, conduct benchmarking, set up common development projects and apply service concepts and tools developed abroad. The interviewees

still thought that they lacked systematic methods for innovation activities. However, compared with other case organisations, the innovation and development practices were quite consistent and the role expectations were coherent and shared within the organisation.

Innovation and development activities identified at AdviCo had two specific characteristics. Firstly, all activities were more or less directly guided by common goals; that is, the growth and independence of advisory services. These goals were mentioned throughout the interviews. The goals were set at the international level; however, the means for achieving the goals were not specified. Hence, the goals were interpreted and translated in units and teams. Growth was predominantly pursued through new service development efforts and by identifying new customer segments for the existing services. The aim to become independent meant that advisory service units intended to develop own customer accounts that were not dependent on auditing assignments. One partner interpreted these goals as follows.

'During the past one and a half years we have aimed at becoming a real advisory community, and at developing these services… Earlier we have merely supported our core business, and we have operated based on its needs. Now we aim at attracting new customers, and at developing new kinds of services for them. Basically we aim at transforming ourselves from a support function into business units'. (Partner, unit manager #1)

The second specific feature of AdviCo was that the *domains of services, resources and practices* and *organisational development* were to a large extent integrated with one another. The innovation and development activities were first and foremost concerned with the service domain; that is, developing new services for the Finnish markets. However, this was often based on exploiting and developing current competences in novel ways. Therefore, the domains of organisation and resources and practices were integrated with the development of the service domain. Although some innovation and development activities were likely not identified in the interviews, the findings suggest that only a few activities had no direct effect on the service domain.

Although different innovation and development systems were identified, role expectations were quite clear. Many tasks were explicitly articulated and negotiated between supervisors and subordinates, but others seemed to be implicit assumptions related to one's position.

5.3.1   Innovation and development systems at AdviCo

Innovation and development systems were identified at the unit, service area and team levels. Almost all of these activities pursued growth and independence of

advisory services in their own way, and the identified systems were interlinked in different ways. One unit was engaged in a unit-wide development effort that was termed here as *realigning the service portfolio of the unit*. However, at the time of the interviews, most of the innovation and development activities were conducted below the unit level. In all three units, various systems focusing on service development were identified at the service area and team level. These systems were labelled *development of service areas* and *development of individual services,* respectively. In addition to these service-related systems, two systems focused on developing resources and practices: *the development of competences in a unit* and the *development of methods* within a team. The identified system types are summarised in Table 13.

Table 13. System types at AdviCo categorised by novelty type

General goal	Innovation and development system	Scope of novelty	Impact on different domains		
			Service	Organi-sation	Resources & practices
Improving a unit's market position	*Realigning the service portfolio of a unit*	Unit	x	x	x
Improving service area's service portfolio	*Development of service areas*	Service area	x	x	x
Improving individual services	*Development of individual services*	Team	x		x
Enhancing knowledge-sharing and capabilities	*Developing competences in a unit*	Unit			x
Developing methods to specific customer problems	*Development of methods*	Team			x

Next, the identified system types are briefly described.

Realigning the service portfolio of a unit

The unit managers were quite autonomous in developing their own units, and they set unit-specific goals with the help of the experienced unit members and in collaboration with the international network. However, innovation and development activities typically took place below the unit level. At the time of the interviews, one unit was involved in a unit-wide change process driven by a newly appointed unit manager. These activities were viewed as forming a system labelled *realigning the service portfolio of a unit*. The aim was to change the mind-set from resource-based logic into customer-driven business logic. In the current situation, this development effort seemed unique considering its

broadness and its goals; the unit manager talked about a 'huge philosophical change' in reference to the aim of eliminating resource-based thinking. Whereas previously the service areas evolved based on professionals' own ambitions and abilities, the current aim was to revise service concepts and competences based on a thorough analysis of customer needs and competition.

The system had a coordinated role structure in which the unit manager acted as the main driver and idea generator. He was quite new in the position and eager to improve the unit's competitiveness. Large investments were discussed among the executive team, but the unit manager seemed to make the decisions himself. According to him, the development work included evaluating the current situation based on the aforementioned analysis, defining key focus areas within each service area and developing the service concepts and required competences. The competences were developed through small acquisitions, recruitments and by reorganising the unit. Moreover, the performance measures were changed from measuring billable hours to measuring customer-specific outcomes.

The changes were implemented within service areas. The unit manager coordinated the majority of the innovation and development activities. The leaders of the service areas were expected to be involved in developing and implementing service concepts, and other employees were expected to develop their tasks and competences based on the plans. However, the personal characteristics of both the unit manager and the service area leaders seemed to have an effect on the division of tasks between them. The unit manager was more involved in services within his area of expertise and in services for which the service area leader was either too busy or not inclined to innovate. The unit manager described his role as follows.

> 'I have created the big vision, but how the ideas evolve depend to large extent on the characteristics of the persons responsible [for the service area]. I aim at being involved as much as possible, I try to avoid throwing the ball to them since the ball would only spin around – I try to be involved'. (Partner, unit manager #2)

The process did not proceed linearly: the unit manager said that the first development efforts had resulted in replacements of key persons and revisions in goals. At the time of the interviews, the second phase in the change process was going on. Despite these challenges, role-breaking behaviours or conflicting attitudes towards the development process were not identified in the other interviews.

In addition to these activities, some activities supporting the unit manager's goal were pursued quite independently in service areas and teams. Given autonomy, these activities were seen to form service area- and team-wide systems that are discussed below.

Development of service areas and individual services

In all three units, services were developed quite autonomously at the service area and team levels. These systems were also identified in the aforementioned unit: well-performing service areas conducted internal development activities quite autonomously and either fulfilled the goals set by the unit manager or were not significantly influenced by the realignment effort. In the other two units, the majority of innovation and development activities were carried out at these levels. Unit managers were involved as 'normal' developers in activities concerning their own professional expertise areas. If notable resources or recruits were required, the decision was made at the partner level or at the executive board of the firm.

These systems were labelled the *development of service areas* and the *development of individual services*. The system types differed in their broadness (that is, they were either service area-wide or team-wide) but were otherwise quite similar. Therefore, these systems are discussed together.

The goals of growth and competitiveness were pursued by broadening and deepening the service offerings. Typically, new ideas came from three main sources. Firstly, services and practices developed in the international chain were modified and applied to the Finnish markets if they were considered useful. Secondly, changes in legislation provided opportunities to offer new advisory services for existing or new customers. Thirdly, new customer needs were identified either by customers' direct requests or through proactive exploration of opportunities. The ideas were typically developed and tested in customer projects, which required identifying a customer willing to test the idea and, in some cases, also getting the idea accepted by the Finnish legislation. However, unlike in project-specific development in other case organisations, the possibilities for developing an idea into a replicable service concept were typically evaluated beforehand.

These systems had characteristics of both empowered and collective role structures because everyone could participate, but the role expectations and the coordination of activities depended on an individual's expertise. Typically, decisions were made collectively with more experienced members. Expertise also increased expectations towards innovative behaviour but simultaneously allowed individuals to act more independently and have more authority over development activities. The more experienced members coordinated the activities of younger members.

Whereas idea generation at lower organisational levels was encouraged, individuals at the managerial level or higher were more or less explicitly expected to be able to generate useful ideas and contribute to achieving growth objectives. However, personal tendencies had some effect on these expectations. Not everyone was expected to be innovative: individuals were also given tasks in

sales, service development, knowledge development or training based on personal characteristics.

Many interviewees stated that the ability to understand the effect of different legal and market changes and to generate new service ideas grew with professional expertise and experience. The ability to present useful ideas was often seen as a sign that an employee has the potential to proceed in his/her career. One interviewee explains this phenomenon as follows.

'You have to have fairly good level of competence. You need to know the routines, since idea generation often requires challenging the taken-for-granted thoughts, which requires knowing those thoughts and the principles underlying them. Therefore ideas typically derive from those at higher positions and from those with seniority. It does not mean that everyone would not be expected or allowed to participate. I aim at explicating to our young colleagues that the best way to advance one's career is to prove us that we seniors are old and stubborn, and that we fail to see how things could be done much easier.' (Senior manager #1)

In small-scale novelties, a responsible person was assigned to carry out development tasks. In more radical novelties, decisions were made at higher levels and an internal development project was established. Individuals were also given the freedom to experiment with their own ideas if they were motivated enough to invest their time in such development activities.

Despite these expectations, not many resources were allocated for innovation activities, and they were not rewarded with money. Interviewees' motivation to develop services was linked to personal development and career development.

'It is about developing yourself and your competences, and I guess it also proves that you have achieved something.' (Senior manager #1)

Although AdviCo aimed to support development work by lowering the goals for billable hours, people still feared that time they spent on innovation and development tasks actually decreased their performance. One interviewee described development work conducted after normal work hours as an entrepreneurial risk that needed to be taken to achieve the growth objectives and to be considered a candidate for partner status.

A peculiar finding was also that each interviewee considered his or her own organisational level as the main source for new service ideas. Some unit managers felt that the unit's development depended too much on themselves, whereas service area leaders did not believe that ideas would derive above their own areas, except from ideas that had an effect on several service areas. One explanation is that the interviewees focused on novelties with a different scope: many novelties were conducted autonomously within teams and service areas because the

individuals working on the services knew best how they could be developed. Hence, the upper levels did not have to pay attention to these activities. Even the service area leaders did not have control over, or knowledge about, all innovation and development activities within their areas.

Another explanation is that the roles among the unit manager, the service area leaders and the team leaders differed based on a position-occupant's personal tendencies; if a service area manager was very innovative, a unit manager paid less attention to the development of the service area and focused on other service areas. The unit managers considered their subordinates chosen for the interviews to be quite active, whereas in other service areas the role of a unit manager might have been more intensive.

Enhancing knowledge sharing and capabilities

The interviewees also described competence development activities that were viewed as forming unit-wide innovation and development systems. These systems were labelled *developing competences in a unit*. They supported the service development systems previously described but did not directly influence customer outcomes. Two goals were identified. The first goal was to better exploit existing knowledge by sharing knowledge and solutions instead of having a completely personified and dispersed knowledge base. The second goal was to improve the ability to identify opportunities in the marketplace and in changes in legislation.

Unit-wide empowered structures were identified. Everyone was encouraged or expected to participate in knowledge-sharing meetings, which were held within (and across) units and teams. Knowledge databases were also used. In addition, certain tasks were allocated to specific individuals to coordinate development activities. Some tasks concerned exploring opportunities in certain market areas and were deemed important especially for juniors to assist them in developing their professional expertise and to participate in collective issues. Moreover, each unit had a performance manager whose task was to guide juniors' personal development.

Developing methods to specific customer problems

The service work within advisory units was often based on detailed analysis methods and calculation models derived from practice and theory. These methods and tools, as well as service processes, were developed autonomously within each team, forming systems labelled the *development of methods*. Although the primary goal was to rationalise work, new service opportunities were also identified along with the development of methods. For example, ideas were recognised if existing methods were modified to evaluate the effect of

different taxation options in new customer situations. The methods and process improvements were tested in customer projects and then developed further based on such experiences.

The development of methods is viewed as team-wide systems with an empowered structure. These systems had similarities with service development systems, although juniors were more intensively involved. Everyone was encouraged to be involved, but someone at the managerial level supervised the development and application of methods in customer projects. Typically, experienced employees generated initial ideas and delegated the development work to juniors. Juniors were encouraged to generate ideas themselves because, unlike in service development, newcomers' viewpoints were viewed as supporting the ability to challenge existing practices. Moreover, juniors were believed to possess the latest theoretical knowledge because they were often hired directly from business schools.

Similar to service development, personal tendencies had some effect on role expectations. Development tasks were viewed as something extra and required individual motivation and preferences, as discussed by one interviewee.

'One needs to balance work and leisure time, and it is understandable if work does not get the first priority. You cannot expect it – I have done long hours developing new methods, but I cannot expect others to do that. People are not alike. You need to identify your own strengths. Some people may be better in other tasks, like in developing customer contacts, impressing the customer, and getting along with people. And then there are these... data geeks. It might not be the correct term since we all have customer contacts, I mean that some people are better in data crashing and in theoretical development work than others.' (Senior manager #2)

5.3.2 Summary of findings at AdviCo

What seems to be interesting in this case organisation is that although goals were set at the organisational level, organisation-wide innovation and development systems were not mentioned. All of the identified activities were conducted within units, with an emphasis on activities within service areas and teams. This emphasis is likely the result of context-specific knowledge required in development activities: the firm's background was in auditing services and the CEO's expertise was in that area as well. Therefore, advisory services perhaps relied more on collaboration with international counterparts than on firm-level activities in Finland.

Table 14 provides a summary of the central characteristics of the role structures in innovation and development systems. Most of the systems identified at AdviCo had an empowered role structure, where role expectations increased with experience. Typically, decisions were made collectively among participants at

higher positions. The autonomy of innovative behaviour also depended on an individual's experience. Experienced individuals had some freedom to experiment with their own ideas, whereas juniors' activities were supported and coordinated by the experienced individuals. In addition to expertise, one reason for these differences was that service and tools development typically required real customer cases to test and elaborate on the ideas. To obtain such cases, support from partners or senior managers was needed.

The role structure in a unit-wide development system was an exception, since it had a coordinated role structure. This arose from the unit manager's intention to make what he called a 'philosophical change', and he wanted to control it himself. Such a change was likely to require more coordination than those activities that did not change the organisational culture and already had some routines.

It is difficult to determine the flexibility of these systems. Apart from the unit-wide system, no specific individuals were mentioned as having created or shaped the existing systems. In addition, neither role-making and role-breaking behaviours nor systems with competing goals were identified. However, individuals did have some effect on their roles, as tasks were allocated to individuals based on their strengths. However, it seems that the innovation and development systems and their role structures at AdviCo were more coherent and stable than those identified in other case firms.

Role-breaking behaviours were not identified, possibly because everyone had the chance to participate in innovation and development activities, and because individuals had a similar understanding of role expectations. The nature of the professional career system is also likely to explain the coherence: individuals were expected to stay in one position for only a limited time and either progress towards the next position or leave the organisation. Although innovativeness was not forced, employees knew that by performing well they subsequently gained more power and responsibilities; therefore, motivation may not exist for breaking or creating a role (see also Kärreman & Alvesson, 2004). However, because innovation and development tasks were conducted among other work tasks, conflicts emerged between customer work and development work. In urgent situations, priority was given to customer assignments.

Because all systems basically pursued the goals of growth and independence, they are viewed as linked to one another. Different linkages were identified. For example, unit-wide development efforts were conducted under the coordination of the unit manager but also resulted in goals that were carried out independently in service areas and teams. These systems are viewed as *nested systems* that pursued the same goals, although decisions about how to reach the goals were made independently in the lower-level systems. Other systems were not directly linked to one another, but they pursued the same general goal with their own sub-

goals and tactics. Some systems *supported each other*, such as the development of knowledge sharing and capabilities and service-related developments.

Note that although the studied innovation and development systems pursued similar goals, the picture would have been most likely different if auditing departments were included in the study. The interviewees identified contradictions between the goals for innovativeness in the advisory services and the traditional auditing culture that evaluated individuals based on billable hours and that was typically risk-averse.

Table 14. Role structures in the innovation and development systems identified at AdviCo

System	Recurrence of the system	Breadth of the system	goal setting	Role structure type	Idea generation	Development	Application	Decision making	Examples of novelty types
Realigning a service portfolio within a unit	on-going, large change	unit	top/unit mgr.	coordinated	unit mgr. (EX/ME), service area mgrs. (EX)	unit mgr. (EX/ME), service area mgrs. (EX), other members (ST)	everyone in the system (EX)	top/unit mgr.	changing the unit's logic into customer-oriented one; new services, improved competences, new performance evaluation methods
Development of service areas	typical practice in many units	service areas	top/service area mgr.	empowered	service area manager and experienced professionals (EX/EN), juniors (EN)	service area manager and experienced professionals (EX/EN), juniors (EN)	members of the service area (EX)	unit/ service area mgr.	identification and productisation of services / service elements within current portfolio
Development of individual services	typical practice in many units	team	top/team mgr.	empowered	team manager and experienced professionals (EX/EN), juniors (EN)	team manager and experienced professionals (EX/EN), juniors (EN)	members of the team (EX)	team mgr./ professionals	identification and productisation of services / service elements within current portfolio
Developing competences in a unit	typical practice in many units	unit	top/unit mgr.	empowered	everyone in the system (EX/EN/ST)	Everyone in the system (EX/EN/ST)	everyone in the system (EN)	service area/ team	enhance knowledge on specific areas
Development of methods	typical practice in many units	team	team mgr. / professionals	empowered	experienced professionals (EX), juniors (EN/ST)	experienced professionals (EX), juniors (ST)	members of the team (EX)	team mgr./ professionals	new calculation methods, analysis tools, customer interaction tools

EX = expected behaviour related to position, ST = expected behaviour related to individuals, EN = encouraged behaviour, ME = role-making, BE = role-breaking

5.4 EngiCo

EngiCo offered various types of design and consultancy services related to building services engineering. EngiCo and CoCo were parts of the same corporation. EngiCo consisted of four units, of which three offered engineering design services and one offered consultancy services. Each unit was divided into teams based on either customer type or service type. The project teams carried out the work independently.

The opportunities to develop engineering design services and consultancy services were quite different. Engineering design services were closely integrated with other services in construction projects, and EngiCo had to align its activities with other actors' activities in these processes. Therefore, the substance of these services was predetermined to a large extent, and the firm had a collaborative and reactive role in service development. However, the development of work practices and tools were important because the requirements for speed and efficiency were increasing. In contrast, in the field of consultancy, new services were developed proactively. These differences influenced the resources and abilities of individuals to act innovatively as characterised by one interviewee from the consultancy unit and another from an engineering design unit.

> 'I think that the mind-set in design units is very different from ours. They do standard products with big volumes and low margins. And it is based on high activity levels - people always need to have a customer project that can be charged. Our activities are based on higher prices, and we do less billable hours. Therefore we have time to think, and we – at least should – have more time for development and marketing, etc.' (Project manager #1)

> 'New service development is extremely rare in our field. We can develop things that are linked to the integration of systems. Our work depends on so many external actors, not only on our own activities... Our own innovativeness is related to the development of work processes and tools, and on leveraging and utilising the existing solutions'. (Team leader #2)

Because the work in engineering design was based on IT tools, technology development was more important in EngiCo than in other case organisations. Technology also played a role in the substance of services because an important part of engineering designers' work was to explore and co-develop technological innovations produced by the technology developers. Additionally, some consultancy services used an IT interface between the service provider and the customer. Hence, the domains of service and tool development were often integrated.

5.4.1 Innovation and development systems at EngiCo

A variety of innovation and development activities were identified, ranging from activities deriving from the corporate level to activities identified within teams. Apart from corporate projects and projects that required a large investment, EngiCo's innovation and development activities were not visible at the corporate level. The firm and, subsequently, the units were quite independent in carrying out these activities. However, they also bore the risks involved: strict objectives for profits were set for each period, and investments in innovation and development activities diminished the financial results and the personal bonuses tied to profits.

Altogether, ten innovation and development system types were identified and are presented in Table 15. Strategic goals deriving from the corporate and the firm level were implemented in two systems labelled *corporate strategic projects* and *firm-level strategic projects*. One organisation-wide change process concerning organisational structure was identified, and the activities involved were viewed as forming a system labelled the *development of organisation's structure*. Systems that focused on improving the quality and efficiency of the work were identified at several levels; these were labelled *centralised development of IT tools, quality development, autonomous development of tools and practices in units/teams* and *autonomous development of tools and practices by individuals*. The remaining system types focused on service development within units. In the consultancy unit, two types of new service development (NSD) systems were identified: *collective* and *empowered NSD in consultancy unit*. In the engineering design units, a system labelled the *development of engineering design solutions within projects* was identified.

Table 15. System types at EngiCo categorised by novelty type

General goal	Innovation and development system	Scope of novelty	Impact on different domains		
			Service	Organi-sation	Resources & practices
Implementa-tion of strategic objectives	*Corporate strategic projects*	Organisation / unit	x	x	x
	Firm-level strategic projects	Organisation / unit	x	x	x
Improving the managerial system	*Development of organisational structure*	Organisation		x	
Improving the quality and efficiency of work	*Centralised development of IT tools*	Organisation / unit			x
	Quality development	Organisation			x

(Improving the quality and efficiency of work continues…)	*Autonomous development of tools and practices in units/teams*	Unit/ team			x
	Autonomous development of tools and practices by individuals	Individual			x
Development of new services	*Collective NSD in consultancy unit*	Team	x	x	x
	Empowered NSD in consultancy unit	Team	x	x	x
Development of engineering design solutions	*Development of engineering design solutions within projects*	Unit/project	x		x

Next, these system types are briefly described.

Implementation of strategic objectives

Strategy work was conducted at the corporate and firm levels, and the strategic goals set at both levels were translated into strategic projects, which acted as devices for implementing the goals. Therefore, the firm participated in *corporate-level strategic projects* and initiated *firm-level projects*; these were seen as two types of systems that differed slightly from each other. Typically, the former was conducted in collaboration with other firms, and the latter was conducted within the firm. In corporate projects, the goals were already explicated to a considerable extent at the corporate level, whereas only general guidelines were taken from corporate strategy and top management in firm-level projects generated firm-level goals. Despite these differences, these systems were quite similar and, therefore, are discussed together. The strategic projects aimed at improving cross-selling practices between firms, developing a common image and service offerings between firms, boosting business in certain geographical areas and developing tools that integrate design outputs of several designers in construction projects, as examples.

Coordinated role structures were identified. The projects were coordinated at either the corporate level or the top management level. Typically, top management, including the CEO, the unit managers and their deputies and the development manager, were responsible for scanning opportunities, developing the firm-level strategy and planning strategic projects. Project coordination responsibilities were then given to a suitable member of top management who delegated development tasks to appropriate employees. An example is the development of inter-organisational offerings: the persons involved in delivering

the services were given development tasks, which they conducted alongside their normal work tasks in collaboration with their counterparts in the other firms.

Typically, the strategic projects had an effect only on certain parts of the organisation, and besides individuals involved in these projects, other employees were not expected to participate. However, two types of role-making behaviours were related to strategy. Firstly, the most active individuals presented ideas to the CEO. Secondly, one team in the consultancy unit collectively discussed the effect of strategic objectives on their business, and responsibilities for implementing strategy were delegated to team members. However, an interviewed team member stated that because these efforts were not coordinated or expected, the team had difficulties in coordinating and communicating their activities to managerial levels. Interviewees were also worried about the fact that, at the moment, the implementation of the strategy in everyday business was not systematically ensured; hence, the strategy did not guide innovation and development activities apart from these projects.

Improving the managerial system

The interviewees talked about a recent development process, in which team structures within units were established. This process was understood to form a system termed as *the development of the organisational structure*. The aim was to both diminish the operative tasks of the unit managers and increase communication between supervisors and subordinates. A coordinated role structure was identified in which the unit managers and other senior employees recognised the need to improve the structure based on an employee satisfaction survey and their own experiences. The idea was discussed and the decision was made at the top management level, after which suitable persons within units were appointed as team managers. Everyone was expected to act according to the new structure.

No specific expectations seemed to exist towards the unit managers to initiate such novelties. However, they were responsible for developing their unit, and this behaviour can be seen to be attached to this expectation. Therefore, such behaviour was on the border of the expected behaviour related to position and something that could be termed as collective role-making behaviour.

Improving the quality and efficiency of work

Innovation and development systems related to the resources and practices domain were identified at every organisational level. At the organisational level, the goal was to unify work practices and tools; therefore, decision making and coordination of these activities was centralised. Two separate organisation-wide systems were identified: the centralised development of IT tools and quality

development. Both systems had empowered role structures and a full-time development manager coordinated both. However, the novelty types and the participants' roles were slightly different; therefore, these systems are treated separately.

Centralised development of IT tools focused on developing IT tools at the organisational level. The novelties included tools used in engineering design, project management and customer relationship management, and some services with the IT interface. Everyone was encouraged to suggest ideas. The development manager collected ideas and development needs, coordinated development projects and planned resourcing with the unit managers. He was expected to prioritise and evaluate ideas from the viewpoint of the entire organisation. Large investments required decisions at the corporate level, and sometimes these projects received external funding. However, decisions were typically made between the CEO, the unit managers and the development manager.

During the development phase, input from employees using the tools in the customer interface was needed to determine good solutions. Typically, several experienced professionals were needed at the beginning to specify the requirements. Next, development tasks were delegated to specific employees based on their abilities and resources. The corporate software development team was also used if needed. Previously the development manager had an own software development team, but these activities were recently centralised at the corporate level. The developers at EngiCo were usually young employees with an interest in IT development. Typically, they also tested the tools in a limited context before a wider launch. Everyone was expected to apply the novelties if the tools concerned their work.

Quality development had quite a similar role structure. The firm had a quality system through which all work processes and practices were described. The development manager coordinated quality development, and specific development tasks were delegated to professionals who best knew what to take into account and how the processes should be improved. To maintain and improve quality, each unit had a quality controller who ensured that instructions were followed and who conducted internal quality audits in other units. Everyone was expected to act according to the quality system; however, doing so was quite difficult in the engineering design departments in which the processes depended on other parties in the construction project.

Tool development activities took place at lower organisational levels as well, although these activities were not always welcomed at firm level. *Autonomous development of tools and practices* were identified *at unit, team and individual levels*. The first two system types can be seen as unit- and team-level systems with empowered structures coordinated by unit managers or team leaders. The

interviewees in the engineering design departments understood that they bore the risks themselves; however, they justified these activities by noticing that the novelties did not contradict the quality instructions, the impact of novelties were limited to the unit and funding was provided by the unit. The following quotation illustrates their understanding of the rules.

'If it [the development activity] concerns the unit's internal life, such as tools or practices which are not in conflict with current rules and processes, we can carry out the development within the unit. But if the development activity requires changes in the quality system, rules, or organisation... An example is the development of the organisational structure. In these cases decisions are made at one step higher. The issues that concern the firm are presented to the CEO and to the board.' (Unit manager #1)

In addition, an interviewee in a consultancy unit considered developing the novelties within the team faster and easier than exposing the ideas to decision making at higher organisational levels. Because he had IT skills, he was able to develop many applications in the customer projects without help from the IT manager.

'I personally aim to recognise development opportunities actively. And I am willing to bear the risk. I do not enter into these processes rashly but... Let's say that I assume that there should be opportunities to develop our activities in every customer project.' (Team leader #1)

The breadth of these systems varied between units. In the engineering units, decisions were often made at the unit level, whereas in the consultancy unit, decisions were made at team levels. A likely reason for this variance is that everyone used similar tools in engineering units, whereas in the consultancy unit, teams offered different services and many tools were specific to the service in question. In both cases, development tasks were delegated to service providers who attempted to carry out the development tasks in addition to their normal work tasks.

In addition to these collective activities, individual employees with IT skills also initiated development activities of their own. The goal was to improve their work. These activities were not necessarily communicated to the managers and were not always welcomed in the organisation. The grass-root employees' activities were not that easily accepted, which the development manager explained as follows.

'We noticed that people had started to develop their own Excel-applications and tools, and that they might start expecting us to support these activities. And we thought that a) the development is carried out by wrong persons, b) they use wrong tools, and c)

we might already have such solutions somewhere. - - - we also need to know what people are doing. They can't... project workers have to conduct project work. Of course if they what to conduct development work during the evenings and nights, why not?' (Development manager)

Considering the conception of a role structure, activities that were not accepted did not manifest role structures and were viewed as role-breaking behaviour. If the activities were accepted, the structure was considered *dispersed*.

All in all, the developers at the three levels (unit, team, and individual) considered the novelties beneficial for their work and did not believe that they would have any effect on the wider organisational context. The position of an individual seemed to have an effect on the ability to initiate these development activities. The unit managers and the team leaders were able to initiate these activities more easily, and because they also engaged other individuals in these activities, they were able to establish own local innovation and development systems that acted autonomously in relation to the development manager. The development manager admitted that development activities at different levels were unavoidable in this kind of an organisation, albeit still not considering all of them very beneficial from the perspective of the entire organisation. However, positive linkages between autonomous and organisation-wide development activities were also identified. An example is a reference management tool developed by a team leader. The tool was later presented to the unit manager who identified it as beneficial for the entire firm. Hence, it was further developed in the organisation-wide system.

Development of new services

The consultancy unit was the most active in development of services. The unit was established by a very innovative unit manager, who saw the possibility to develop consultancy services for the industry. The consultancy business was viewed as more dynamic than the traditional design, making service development important. The unit manager was still active in some service development projects and guided the externally funded development projects. However, he encouraged individuals to be innovative; consequently, innovation and development activities were initiated independently in different teams. The unit manager was not informed of all new service ideas, and he considered many novelties as 'pleasant surprises'. These activities were supported by hiring highly motivated and competent individuals and by giving them the freedom to develop their service areas. One project manager explained this situation as follows.

'We consultants are driven by the possibilities to learn, to develop the work, and to extend our own networks to new customers and new market areas. This motivation

together with potential customer projects act as the drivers of development activities. It would be frustrating to repeat routines continuously. Since you cannot always give people promotions, this is the way to keep us here: we do new things, we develop our activities, we have the freedom to develop and we are able to see the concrete results.' (Project manager #1)

From the perspective of a role structure, these innovation and development activities have characteristics of both unit-wide dispersed and team-wide empowered/collective structures. Because service ideas were specific to teams rather than to the unit, this study considers such activities as team-wide systems. Two types of systems were identified and labelled *collective* and *empowered NSD in consultancy unit*. For both types, innovation and development activities were typically integrated into customer projects. After the development of a preliminary idea, the ideas were marketed to potential customers, and the concept development was carried out in customer projects. Sometimes, external funding and university collaboration were also used.

One system with a collective structure was identified. Everyone was encouraged to generate ideas and decisions were made collectively between the team leader and project managers. The team also collectively designed and delegated specific tasks to the members. Some of these tasks were even included in individuals' job descriptions, and the accomplishment of the tasks was evaluated collectively.

An empowered structure was identified in another team whose team leader coordinated the activities. Although he generated most of the ideas, everyone was encouraged to present new ideas, and development tasks were allocated to team members. Many new services in this team were based on IT applications because the team leader had experience with R&D activities. The team seemed even more autonomous than expected, perhaps because it was located in a separate geographical area that made communication more difficult. The team leader considered loose coordination difficult; however, he wanted to develop novelties himself to be able to react to opportunities in the customer interface in a reasonable time. He describes this situation as follows.

'We haven't asked such things [permission to develop services]. It is because we do not have a culture where we could ask 'hey, we have an idea, is there anyone else with similar ideas?'. If we now exposed our idea to forums where it is evaluated and a permission to proceed is given or denied, we would be likely to lose our window of opportunity [with the customer]. Usually the ideas are not radical, and since the investments are also minor, we have not exposed the ideas to outsiders...' (Team leader #1)

Other interviewees considered loose coordination as both beneficial and challenging. Individuals had freedom to develop, yet development was seen as

inefficient because similar ideas were sometimes developed in many teams and geographical areas. One interviewee described these practices as follows.

'It [the encouragement] is present in everyday conversations; if you present an idea, the response is that 'you have the freedom to do whatever you wish, if you are willing to develop it yourself'. The management is perhaps a bit passive in supporting ideas and mentoring you. It is a minus. But, on the other hand, the positive side is that they say 'do whatever you like, show it to me if there's commercial success, here you have all the possibilities to do what you like'. (Project manager #1)

Development of engineering design solutions

The service development activities in the engineering design units differed substantially from those in the consultancy unit. The content of these services was standardised to a large extent, and the interview data did not include any examples of the development of new services. However, engineering design services were continuously developed through small, project-specific improvements. Because design schedules were tightening continuously, EngiCo had to develop replicable, good quality solutions. Moreover, because buildings became increasingly technology-intensive, designers had to keep up with the newest technological innovations and develop solutions to integrate technical systems. The company also aimed to extend its role into both upstream and downstream construction processes, i.e., into the concept design and the construction and usage phases.

These activities were seen to form systems termed as the *development of engineering design solutions within projects*. The novelties were developed quite autonomously in customer projects, and therefore dispersed role structure was identified. If development opportunities were recognised in the beginning of a project, development took place hand-in-hand with design work. In some cases, externally funded projects were established to finance the development work. In addition to these internal activities, the designers also collaborated with technology developers. In one such instance, a team leader participated in developing a lighting solution with a manufacturer. Although such close collaboration was rare, the interviewees thought that it was typical for designers to provide feedback to manufacturers based on their experiences with the usefulness of new solutions.

Typically, team leaders made decisions, but designers who were active in customer work developed ideas. Everyone was encouraged to be involved, but such involvement seemed not to be expected partly because of the lack of time caused by shortening schedules and the high ratio of billable hours. Because innovation and development activities were dispersed, novel solutions were not systematically spread within the units. Spreading of ideas is described as follows.

'Perhaps we don't have such culture and such channels. It is based on a sort of a jungle drum: if someone needs new ideas, he or she starts asking 'has there been any project with this kind of situation?' and the response might be 'yep, we had such and such situation and we created this and that solution…' But these solutions are not actively brought up.' (Team leader #3)

However, the units aimed to support knowledge exchange through spatial solutions by mixing designers from different teams and by initiating regular meetings of professional groups in which new knowledge and useful new solutions were discussed.

5.4.2 Summary of findings at EngiCo

Table 16 summarises the central characteristics of the identified role structures at EngiCo. Except for strategic projects for which idea generation was centralised with top management, broader participation was typical in other systems. An interesting feature at EngiCo was the difference between domains concerning goal setting and decision making. The development of tools was controlled at the organisational level, but the decisions concerning service development were made at lower levels. Several explanations were identified. Firstly, decision making depended on the investments needed, and technology development typically required more money than the development of intangible services. Secondly, the aim was to improve quality through unifying work processes, which justified centralised decision making. Moreover, skills needed for development tasks were different: employees who interacted with customers possessed skills needed in service development, whereas IT development required programming skills that the professionals did not necessarily have.

These findings suggest that although expectations concerning expected, encouraged, and non-expected behaviours did exist, individuals with managerial responsibilities were able to shape these expectations and create their own systems. This was shown in their abilities to create autonomous IT development systems, for example. In addition, in the consultancy unit, role structures in the service domain seemed very flexible because different practices existed in teams. On the other hand, the structures in organisation-wide IT tool and quality systems and the development of engineering design solutions seemed more stable, although individuals could decide whether to engage in encouraged behaviour.

The interviewees also noticed that individuals in the consultancy unit were active developers, whereas only a few individuals in the engineering design units aimed to be innovative. As explained above, the service type caused these differences because the development opportunities and the resources were

different. Billable hour goals were higher in the engineering design units and the development work in these units focused on tools and practices coordinated by the IT manager.

It seemed that apart from strategic projects, rare activities were explicitly linked to the corporate or firm-specific strategy. However, the identified systems were interlinked in different ways. The systems focusing on tools development and service development were partly integrated because technology played an important role in many services. The linkages between the systems in the resources and practices domain were various. Although the development manager was supposed to coordinate all development activities, novelties were developed outside the organisation-wide systems. This was possible because of the autonomy of the units and the IT skills of the individuals. Different opinions existed about the usefulness of these local innovation and development activities. Whereas many interviewees believed that the development manager should know about all activities, others did not inform him about their own activities. Individuals engaging in such behaviours seemed to prioritise the goals related to their work and did not believe that their actions influenced the broader organisational environment. Positive linkages were also identified; for example, a novelty developed for a team-level system was further developed for the organisation-wide system.

Table 16. Role structures in the innovation and development systems identified at EngiCo

System	Recurrence	Breadth of the system	Goal setting	Role structure type	Idea generation	Development	Application	Decision making	Examples of novelty types
Corporate strategic projects	typical practice	managerial/unit	corporation	coordinated	corporation and the top management (EX), other individuals (ME)	coordination by top/unit mgrs. (EX/ST), specific tasks to suitable persons (ST)	individuals influenced by the novelty (ST)	corporation	cross-selling objectives, common service offerings
Firm-level strategic projects	typical practice	managerial/unit	corporation / top mgr.	coordinated	top management (EX), other individuals (ME)	coordination by top/unit mgrs. (EX/ST), specific tasks to suitable persons (ST)	individuals influenced by the novelty (ST)	corporation / top mgr.	development of specific market areas
Development of organisational structure	non-recurring change	organisation	unit mgrs.	coordinated (collective at mgr. level)	unit mgrs. (EX/ME)	unit mgrs., forthcoming team mgrs. (EX/ME)	everyone (EX)	top mgr.	new team structure
Centralised development of IT tools	typical practice	organisation	dev. mgr., unit mgr., top mgr.	empowered	development mgr. (EX), everyone (EN)	development mgr. coordinates (EX), professionals and project mgrs. (ST)	everyone (organisational/unit level) (EX)	dev. mgr., unit mgr., top mgr.	CAD tools, project management tools, resource management tools
Quality development	typical practice	organisation	dev. mgr., unit mgr., top mgr.	empowered	development mgr. and quality controllers (EX), everyone (EN)	Quality mgr. and quality controllers (EX), professionals and project mgrs. (ST)	everyone (EX)	dev. mgr., unit mgr., top mgr.	guidelines for project management and work processes

Autonomous development of tools and practices in units/teams	typical practice in some units/teams	unit/team	unit/team mgr. (role-making?)	empowered/collective	Unit/team mgr. (ME/EX), everyone (EN by the unit/team mgr.)	team mgrs (ME), project managers/professionals (ST)	everyone in the unit/team (EX by the unit/team mgr.)	unit/team mgr. (ME)	new unit/team-specific design tools
Autonomous development of tools and practices by individuals	happen occasional-ly	indivi-dual	individual	dispersed	individual employees (ME/BE)	individual employees (ME/BE)	individual employees (ME/BE)	individual employees	new tools and project-specific methods
Collective NSD in consultancy unit	typical practice in some teams	team	team mgr. / professionals (in some situations unit mgr.)	collective	everyone (EN), some tasks allocated among team members (ST)	team mgr./ professionals (ST)	team members (EX)	team mgr. / professionals (in some situations unit mgr.)	new services for real estate owners concerning financial issues and energy efficiency
Empowered NSD in consultancy unit	typical practice in one team	team	team mgr. (in some situations unit mgr.)	empowered	team mgr. (EN/ME), team members (EN)	team mgr./ professionals (ST)	team members (EX)	team mgr. (in some situations unit mgr.)	new services for real estate owners concerning building management
Development of engineering design solutions within projects	typical practice in two units	project	team/ project mgr.	dispersed	everyone in the system (EN)	everyone in the system (EN)	everyone in the system (EN)	team/ project mgr.	novel design solutions, collaboration with manufacturers in technological innovations

EX = expected behaviour related to position, ST = expected behaviour related to individuals, EN = encouraged behaviour, ME = role-making, BE = role-breaking

5.5 CoCo

CoCo offered consultancy and management services related to a construction process. CoCo and EngiCo belonged to the same corporation. CoCo consisted of three main units, in addition to local units offering similar services in different geographical areas in Finland. The firm also had offices abroad, but these were excluded from this study.

The services in the three units varied in maturity. The oldest and largest unit offered construction management services for building projects. The other two units were newer. One offered construction management services to new market segments and the other offered services related to real estate development. Whereas the service area in the oldest unit was rather standardised and determined by general guidelines for the industry, the new units were more active in innovation and development activities. Top management was more involved in the traditional service area, whereas the unit managers of the new units operated fairly autonomously.

A variety of innovation and development activities were identified at CoCo, partly because of changing managerial situation. The previous CEO was very receptive to new ideas and encouraged everyone to innovate but did not control innovation and development activities systematically at the organisational level. Hence, many activities seemed to rely on entrepreneurial individuals that were identified especially among middle managers. Three months before the interviews, a new CEO was hired who was eager to develop the organisation and initiated new organisation-wide development activities. At the time of the interviews, both old and new innovation and development systems coexisted, although not all of the new plans were yet to be fully realised.

5.5.1 Innovation and development systems at CoCo

Altogether, 10 innovation and development system types were identified at CoCo, shown in Table 17. Three systems were organisation-wide, and two of them were driven by the CEO. The first system is here referred to as *development of strategy;* it included the implementation of corporate strategic projects and the development of organisation-wide strategy. The second system was related to non-recurring change in organisational structure, termed as *development of the organisational structure*. The third organisation-wide system aimed to improve the quality and efficiency of the work, and was labelled the *centralised development of IT tools and quality*. As with EngiCo, a full-time development manager coordinated these activities.

A variety of unit-specific innovation and development systems were identified. The creation of new units was seen to form a system type termed as *developing*

new service areas. The unit managers were also autonomous in developing a unit's business in several domains. These activities had slightly different goals and were here labelled the *development of unit-specific strategy, the unit's structure, tools and practices* and *coordinated NSD in the new units*. Service development was also conducted fairly autonomously in the traditional service area. Two system types were identified, *empowered* and *collective service development*. In addition, *project-specific novelties* were created side-by-side with service delivery in all units.

Table 17. System types at CoCo, categorised by novelty type

General goal	Innovation and development system	Scope of novelty	Impact on different domains		
			Service	Organi-sation	Resources & practices
Organisation-wide strategic development	*Development of strategy*	organisation /unit	x	x	x
Improving the managerial system	*Development of organisational structure*	Organisation		x	
Organisation-wide development of the quality and efficiency of work	*Centralised development of IT tools and quality*	Organisation / unit			x
Creation of new service areas	*Development of new service areas*	Unit	x	x	x
Autonomous development of a units' business	*Development of unit-specific strategy*	Unit	x	x	x
	Development of the unit's structure	Unit		x	
	Development of tools and practices within unit	Unit			x
	Coordinated NSD in new units	Unit	x	x	x
Service development in the traditional area	*Empowered service development*	Unit	x	x	x
	Collective service development	Team	x	x	x
Improving project-specific outputs and work practices	*Development of project-specific novelties*	Project	x		x

Next, the identified systems are briefly described.

Organisation-wide strategic development

A system termed as *the development of strategy* included both concretising and implementing corporate-level objectives and developing and implementing organisational strategy. The corporate-level objectives included improving the business in certain geographical areas, developing marketing and sales activities and developing specific services. The organisational-level strategy work included defining growth objectives, market areas and service offerings for each service area. Systematic strategy work can itself be viewed as a novelty at CoCo because of the increase in the requirements for a thorough organisation-wide strategy development process. Hence, the role structure related to strategy work needed to be developed. Whereas corporate and firm-level activities were considered two separate systems at EngiCo, these two activities seemed more integrated at CoCo.

A coordinated role structure was identified. The CEO was the main driver and coordinator of activities. He specified what the strategy should cover and planned the analysis methods and strategy processes. The unit managers were expected to participate by providing input from units. Experienced unit members were also given tasks to develop and analysed certain areas. One entire unit participated in a development day during which an initial version of the unit strategy was presented and discussed. In addition, everyone was expected to implement the strategy under the guidance of the CEO and the unit managers. Corporate management needed to approve the final strategy.

The new strategy work seemed to face several challenges. At the time of the interviews, the strategy had not yet been implemented. Many interviewees working at the grass-root level were unaware of the strategy work; hence, they planned their work according to earlier practices. The unit managers seemed to still consider themselves very independent. As subsequently discussed, previously the units developed their goals autonomously, making the challenge to fit these unit-specific goals with the organisation-wide strategy. In particular, the unit managers did not necessarily support the objectives from the corporate level if they failed to see benefits from the projects for their own businesses.

'Perhaps I am not encouraged [to participate], but I am asked to do it [laughing]. I mean... These issues [corporate objectives] are brought up and they are considered as important, but if I'm honest, often I do not see clearly the logic and benefits deriving from those activities, and therefore I'm not very motivated if it is not related to my business, if it is related to other firms.' (Unit manager #1)

Improving the managerial system

The second innovation and development system, termed as the *development of organisational structure,* was related to non-recurring structural changes driven by the new CEO. Based on his previous experiences and on-going strategy work,

the new CEO saw a need to rationalise the organisational structure. The structure had evolved during a long period, and changes were needed given the growth and broadening of service areas. The aim was to efficiently share the operative burden of the unit managers and to clarify reporting relationships. Hence, certain geographical units were merged and team manager positions were established for largest units.

This system seemed to have a *centralised structure*, with the CEO as the main driver and idea generator. Unit managers' roles differed based on the unit's situation. If a unit manager actively developed the unit's structure, the CEO did not interfere. If reorganisation was needed, the CEO participated in developing the unit's structures. The ideas were discussed with the unit managers and, after necessary elaboration, these managers were expected to participate in implementing the new structure. Formal decisions were made at the corporate level.

Organisation-wide development of the quality and efficiency of work

The *centralised development of IT tools and quality* was the only continuous and explicit innovation and development system at CoCo. A full-time development manager was appointed to coordinate these activities. The goals were to unify the service processes and to coordinate the development of both administrative tools and the tools used in customer projects. Examples of the novelties were improved quality of specific processes and novel IT applications for project management and resource management.

Although the system was officially viewed as organisation-wide, it focused on developing the quality and efficiency of the work in the traditional service area. The new areas were believed to be so different that, to a large extent, their practices were developed within the new units. However, the development manager coordinated development with the new units; hence, the linkage was collaborative rather than contradictory.

This system had an empowered structure coordinated by the development manager. Both the project personnel and management were encouraged to communicate ideas and development needs. Based on these ideas, the development manager prepared and presented a yearly development plan to the executive group who made formal decisions, and reported on progress four times a year. She also coordinated development processes and scheduled and provided resources for the processes together with unit managers, who appointed suitable individuals to carry out development tasks. If software development was needed, such activities were conducted in collaboration with the corporate software development unit. Moreover, external collaboration and funding was sometimes used. The development manager was also responsible for communicating new guidelines to the personnel and organising training sessions.

However, a slight conflict existed between the expectations towards the development manager's role and her own understanding of how things should be carried out. Because she was not involved in strategic discussions, she was unable to link development activities to strategic goals and she considered herself as almost too independent when making decisions and with launch activities. Therefore, she expected top management to be more involved in setting goals and making decisions. However, she thought that the situation would change after systematic strategy work was done.

Employees were expected to participate in many tasks. They were expected or encouraged to communicate ideas and development needs. They were also expected to carry out specific tasks delegated to them, including, for example, developing process descriptions and documentation formats. In addition, one unit manager assigned individual objectives to each employee in the development dialogues. Also roles of quality coordinators were allocated to one employee in each unit. The coordinators participated in setting quality development guidelines, coordinated and communicated quality development needs for the unit/team and conducted internal audits in other units/teams. Everyone was supposed to follow the new guidelines and utilise the novelties.

The expectations set to employees were fulfilled only to a certain extent. Except for two interviewees who had specific roles, none of the interviewees at the project director and professional levels participated in the system, and the visibility of development activities was weak for certain individuals. Some had refused specific tasks in quality development. The interviews suggested several explanations for the lack of participation. Firstly, although development activities were encouraged or expected, resources were scarce and development work was not strictly controlled. Some interviewees were reluctant to raise development needs because they did not want to take responsibility for developing the idea themselves.

'It is evident that we all have too much work to be done. And it crashes this kind of thinking. There's so much to do in daily work that even if something [ideas] came up, it is better to just forget it. Because years back, before I joined the firm, we had a culture where if someone got an idea, the management's encouragement meant that they said 'well you need to start developing it then'. And then the initiator of the idea had to commit him/herself to development work, and if he/she didn't have any time… it is a situation that should never take place, it suffocates idea development.' (Professional #1)

Secondly, the industry's culture was not viewed as oriented towards proactive development. The organisational culture was also viewed in this manner, as described by one interviewee.

'From time to time I've noticed that people feel that we just carry out our work and someone else tries to develop it... But now I feel we are heading towards more positive mind-set. We are the driver ourselves.' (Project director #1)

Thirdly, employees were accustomed to working autonomously. Some interviewees did not believe that acting according to the quality system was mandatory. Given a lack of time, one interviewee admitted that he was still unfamiliar with the system. The interviewees at the professional levels described their normal work practices as very autonomous and loosely managed; hence, they resisted unifying the work practices.

'There's not much control [concerning the quality guidelines]. It might be a good thing because... There's the quality system, and the environment, according to which one should live, but there's however ten project managers and each has his/her own practices, and I'm not sure whether it is useful to standardise them. Basic principles have to be similar but it might not make sense to [standardise work practices]... It would resemble police control and it would suffocate individuals' own motivation - I think that too tight guidelines are not good.' (Professional #1)

All in all, the development tasks seemed to cumulate with certain individuals. An example of such a person was an interviewee who previously acted as a part-time development manager. He was considered innovative and noticed that other employees still presented their ideas to him. Another interviewee acted as quality coordinator and observed many good practices in the units while carrying out this task. Although not expected, he spread these practices across units or communicated them to the development manager.

Creation of new service areas

The third system type was identified in two cases in which a new service area was established. In both cases, an outsider proposed the idea to the CEO. After considering the idea at the corporate level, the CEO hired the proposer of the idea as a new unit manager who established the new service area. From the firm's perspective, the goal was to broaden the scope of business based on identified opportunities. In contrast, the proposer's goal was to create a motivating job in a new environment.

The corporate level had some expectations towards the CEO to explore growth opportunities, including new services and mergers. However, because the proposers were outsiders, conceptualising whether role expectations existed related to these two events is difficult. Since the CEO (and corporate managers) was responsible for new service area development, these activities may be considered a certain kind of an empowered structure, which was coordinated by the CEO and where everyone was encouraged to suggest ideas. The external

persons engaged in role-making behaviour when suggesting the ideas. Rather than considering this as a planned activity from CoCo's perspective, it should be viewed as an example of taking advantage of emergent opportunities. A new unit manager describes his role as follows.

> *'Yes, I proposed to the CEO that perhaps we should merge our competences. And it did not take long until it came true. I knew such activities would fit into this particular firm, and then I developed the idea and noticed that I'd be ready to do it. This is how it went.' (Unit manager #1)*

After decisions were made, the new unit managers were given a free hand to develop their units based on their own expertise and visions; however, business plans were formally accepted at the corporate level. The unit managers were responsible for the success and growth of the new units. The staff was predominantly hired from outside because the existing personnel had difficulty in rapidly learning new competences. This tendency to recruit personnel from outside may have led to a situation in which the new units' activities were still being developed independent at the time of the interviews. These new units' innovation and development activities are discussed next.

Autonomous development of a unit's business

At the time of the interviews, the new units were in business for quite a while, and the unit managers developed their businesses very independently. As the units matured, their strategy was sharpened and the service portfolios were broadened. In addition, the units rather autonomously developed their own tools and practices. Given the different nature of their services, they were not able to use all of the tools and guidelines developed in the organisation-wide system. Because the other unit grew significantly, the unit structure was revised into a matrix form and new positions within the unit were formed. The other, relatively new unit was still very small; therefore, its structure was not yet revised.

These unit-wide development efforts were considered to form four types of innovation and development systems: *the development of unit-specific strategy, the development of the unit's structure, the development of tools and practices* and *coordinated NSD in the new units*. These types were distinguished because the domains influenced were different and their development processes were separate. The role structures in these systems were similar and are discussed together.

In the beginning, the unit managers coordinated all innovation and development activities, and either a centralised or a coordinated role structure was identified depending on whether tasks were available to allocate. Typically, the unit manager developed the main idea and presented it to the CEO and the

unit members. Then, specific development tasks were delegated to unit members. The unit managers stated that the aim was to engage other unit members more intensively in innovation and development activities. In the larger unit, engagement particularly concerned tool and quality development, for which role structures evolved to become empowered. The unit manager both encouraged employees to suggest ideas and established unit-specific positions for the coordination of quality and tool development. He also discussed possibilities to engage unit members in other types of activities but did not know how to do it:

> 'Well, I am [the main idea generator in the unit], it is my personality, I am enthusiastic about new ideas and opportunities, and I invent new things… And I also typically draw the conclusions, as well. But there are plenty of good employees who might have good ideas, but I don't yet know how to collect the ideas…' (Unit manager #2)

In the smaller unit, the role structures in many domains evolved towards the collective type in which the unit manager sought to discuss the unit's goals with the unit members. This structure was viewed as reasonable because the unit was very small and employed only four very experienced individuals.

Moreover, the units and the teams in the traditional service area had relatively free hands in developing their own business. The unit manager of the traditional unit was not interviewed; therefore, whether or not he considered himself autonomous is unknown. The interviews suggested that the new units were more autonomous than the traditional service area. As discussed, several explanations exist. The firm' expertise was in the traditional service area and, because the previous CEO's own expertise was in this service area, he contributed to its developments. In addition, the traditional unit was led by a vice CEO who acted as a link between the unit and the firm-level goals. The autonomy in the new units was likely caused by the distinct nature of the services, a staff predominantly recruited from outside and because both unit leaders were viewed as very active and innovative. Unit managers characterised their activities as follows.

> 'Of course I want that the CEO and others know where we are heading, but… I guess I'm a bad subordinate since I am quite stubborn and persistent in those issues that I think should be done. And so far my choices have been right and therefore there hasn't been a need to change the situation. If I made wrong choices the situation would be very different, but as long as things are good, I'm sure the freedom will remain and if I fail, then it goes.' (Unit manager #2)

> 'Our unit is so different that what others do here does not much influence us. We have a team of four and we have such a broad mandate to act that we do what we consider is best. And we don't need any firm culture to do that, we are so different that the only

things that matter are the mandate to act and management's support. The rest does not matter much'. (Unit manager #1)

The extent to which the new CEO expected such autonomy was yet unclear. However, he believed that the units had the best 'wisdom' in their business and, therefore, identified the need to develop the business at the unit level. However, the autonomy was not complete; formal decisions concerning large novelties were made at the firm or corporate level.

Service development in the traditional area

The development of new services and new service elements also took place in the traditional area, although this development was constrained by the general practices in the industry. One of the interviewees described the situation as follows.

'Construction business is very restricted considering innovations, and it is because construction processes and services are quite formalised; you are told the tasks that are yours, and if you do something else, it is not what you are supposed to do. But it depends on the orderer, as well; some of them do not care about the standardised tasks lists as far as you do your job well, and others are very strict about the tasks.' (Project director #2)

Although recognisable service development activities took place rarely, interviewees recognised many types of novelties. Examples of new services include extending construction management service into new types of projects and the development of new types of managerial services based on existing expertise. Examples of new service elements include tools to estimate the quality of construction work and participation in building concept development. The firm also developed service elements that could be integrated into services offered by other firms in the corporation.

A system type termed as *empowered service development* was the dominant mode in the main unit. The unit manager and top management coordinated the development activities. Everyone was encouraged to suggest ideas, and the new services were typically developed side-by-side with customer projects after a preliminary service concept was developed. However, the interviewees stated that service ideas rarely emerged given the nature of the service and the problems with carrying out development work. The problems were similar to those identified in the development of tools and quality: typically, the development responsibilities were given to the presenter of an idea, who was then given the responsibility to advance the idea. This process was difficult because no extra resources were available for development activities. The development processes also tended to become attached to the person in question instead of being viewed

as collective activity. Therefore, some interviewees stated that they did not actively champion their ideas.

A system labelled *collective service development* was identified in a small team located in a separate geographical area. The team manager wanted to engage everyone to generate and develop service ideas. The team acted autonomously in relation to the main unit; although the main unit was resistant to some of the team's ideas, the small team was persistent enough to develop two novel services based on opportunities identified in customer contacts. Therefore, this example illustrates a type of collective role-making behaviour.

Improving project-specific outputs and work practices

The services were also improved continuously through the creation of project-specific novel solutions concerning both customer output and work practices. These activities were understood to form systems labelled *development of project-specific novelties* with dispersed role structures: project personnel developed these novelties autonomously. The development of project-specific novelties was viewed as part of the job, and the solutions were born in an informal manner through daily work.

> *'Often the development and idea generation takes place in a dialogue with a colleague. Someone comes to tell his/her situation and seeks for an answer, and then these discussions lead somewhere. It is not systematic, that is what I mean, it is not systematic, but rather tied to the time and place, to a situation where you meet someone you are used to discuss with, and this information [discussed there] is not necessarily generally available.' (Professional #1)*

As the quote noted, these activities were conducted autonomously with no specific coordination, and decisions were also made at the project level. The professionals believed that they had the best ability to evaluate the usefulness of new solutions, as described by one of the interviewees in the following quotation.

> *'An outsider would face difficulties in telling us how to carry out the work, if s/he had not done the work even for a day. They [new solutions] are born in our work community, and it is not constricted in any way, we do not have any guidelines suggesting that we should first present the ideas to someone at higher organisational level.' (Professional #2)*

Although the creation of the novelties can be viewed as expected or encouraged behaviour, spreading of the novelties within a unit was not necessarily (formally) expected. However, management aimed to find ways to encourage the proliferation of new and useful solutions by establishing different types of meetings. However, the interviewees stated that the lack of time prevented them

from identifying or communicating opportunities to utilise novelty in upcoming projects.

The development efforts of project personnel were focused on these types of development activities, partly because of the resourcing problems discussed previously: the individuals did not want to suggest ideas with broader implications because they were afraid that they would be asked to develop the ideas themselves. Therefore, they considered it easier to implement their ideas only for their own projects. However, some of the project-specific novelties were communicated to the development manager who could take these improvements into account during the development of a quality system.

5.5.2 Summary of findings at CoCo

A diversity of innovation and development activities were identified at CoCo. Many activities seemed to rely on entrepreneurial individuals because innovation and development activities were not previously coordinated and resourced in a systematic manner, except from IT tool and quality development. It seemed that the individuals whose organisational position enabled decision making concerning the use of development resources were able to advance their ideas, whereas those who could not make such decisions had little motivation to develop their ideas. The interviewed managers stated that they had a free hand in developing the issues they considered essential, although formal decisions regarding many development activities were made at the organisational or corporate levels. Although lack of coordination was considered difficult at lower organisational levels, entrepreneurially oriented new unit managers were likely to have been unable, or were not motivated, to develop their units in a similar manner had their activities been strictly controlled.

The internal structures of the innovation and development systems varied from centralised to collective. Table 18 provides a summary of the main characteristics of the role structures. Most of the systems in the domains of services and practices and resources were either empowered or collective. However, the activities initiated by the new unit managers and the new CEO were less participative, probably because the aim was to implement the managers' ideas that they considered strategically important.

The findings suggest that role structures at CoCo were very flexible. Firstly, entrepreneurial individuals were able to establish new units and develop them according to their own expertise. Secondly, the interviewees at lower levels seemed able to decide whether to engage in expected or encouraged behaviours in the existing systems. However, a lack of time, support and resources prevented participation at lower levels unless an individual was very persistent.

The typical linkages between innovation and development systems were loose. The findings suggest that, in addition to loose coordination, this was caused by

the different periods during which units were created. For example, the system for developing the IT tools and quality pre-existed the establishment of the new units; hence, the system was focused on the needs of the traditional service area. Because the development manager seemed fully engaged in developing the traditional area, one of the new unit managers appointed a unit-specific development manager to develop unit-specific practices. Positive linkages also existed between the systems, as some of the ideas and tools developed in the units could be utilised in a wider organisational context. An example is a customer feedback system driven by the other unit manager.

The unit-specific strategies also pre-existed the development of an organisation-wide strategy. Because the former was developed autonomously in the units, the strategy-making practices probably needed to be changed to develop a common vision. The actual linkages were not yet known during the time of the interviews. Although a potential conflict existed between goals set at different levels, current unit-wide efforts did not seem to contradict the organisation-wide strategy processes.

Table 18. Role structures in innovation and development systems identified at CoCo

System	Recurrence of the system	Breadth of the system	Goal setting	Role structure type	Idea generation	Development	Application	Decision making	Examples of novelty types
Development of strategy	new practice	organisation	corporation / top mgr.	coordinated	top mgr. & unit mgrs (EX), other individuals (ST)	top mgr. & unit mgrs (EX), other individuals (ST)	everyone (EX)	corporation / top mgr.	development of certain areas, developing marketing and sales activities
Development of organisational structure	non-recurring change	organisation	top mgr.	centralised	top mgr. (EX/ME)	top mgr. & unit managers (EX)	everyone (EX)	top mgr.	merging certain units and establishing team leader positions
Centralised development of IT tools and quality	typical practice	organisation	dev. mgr.	empowered	dev. mgr. and quality coordinators (EX), everyone (EN)	coordination by dev. mgr. (EX), professionals and project mgrs (ST)	everyone (EX)	top mgr. / dev. mgr.	project and resource management tools, documentation of processes
Development of new service areas	two development efforts	organisation / unit	corporation	empowered	external individuals (ME)	New unit managers (EX), coordination by the CEO (EX)	New unit managers (EX)	corporation	new unit in new service areas
Development of unit-specific strategy	typical practice in two units	unit	unit mgr.	centralised	unit mgr. (EX/ME)	unit mgr. (EX/ME)	coordination by unit mgr. (EX/ME), everyone (EX)	unit mgr.	Clarifying a unit's goals and service areas
Development of the unit's structure	non-recurring change in one unit	unit	unit mgr.	centralised	unit mgr. (EX/ME)	unit mgr. (EX/ME)	coordination by unit mgr. (EX/ME), everyone in the system (EX)	unit mgr.	Unit-specific matrix structure
Development of tools and practices within unit	typical practice in two units	unit	unit mgr. (ME)	empowered	unit mgr. (EX/ME), 'development mgr.' role to one individual (ST), everyone (EN)	coordinated by unit mgr. / dev. mgr. (EX), other members (ST)	everyone (in the system EX)	unit mgr.	project management tools, methods for service delivery

									new services and new market segments, new elements in existing services
					unit mgr. (EX/ME), other members (ST)	project managers / professionals (ST)	project managers / professionals (ST)	unit mgr.	
Coordinated new service development	typical practice in two units	unit	unit mgr. (ME?)	coordinated					
Empowered service development	typical practice in one unit	unit	unit mgr.	empowered	everyone in the system (EN)	presenter of the idea (ST)	everyone in the system (EX)	top/unit mgr.	new elements in construction management
Collective service development	typical practice in one team	team	team/team mgr.	collective	everyone in the system (EX)	everyone in the system (EX)	everyone in the system (EX)	team	new services and new elements in existing services
Development of project-specific novelties	typical practice in (at least) one units	project	project mgr./ professionals	dispersed	project mgr./ professionals (EX)	project mgr./ professionals (EX)	project mgr./ professionals (EX)	project mgr./ professionals	new solutions for solving technical details, new documentation practices

EX = expected behaviour related to position, ST = expected behaviour related to individuals, EN = encouraged behaviour, ME = role-making, BE = role-breaking

6. Comparisons between cases

This chapter compares the findings in the studied cases concerning each research question. The chapter is structured according to the four research questions. The types of role structures are addressed in Chapter 6.1. To evaluate the role structures, comparisons are conducted at two levels of analysis. Firstly, the roles of individuals acting in similar positions are compared between organisational contexts to obtain an overview of their similarities and differences. Secondly, comparisons are made at the level of innovation and development systems to identify similarities and differences in role structures.

The flexibility of structures is discussed in Chapter 6.2. The findings are discussed first at the individual level, after which individuals' effect on role structures are explored. The coherence of the structures are explored and summarised in Chapter 6.3, where the autonomy of systems and linkages between systems are discussed. Explanations for similarities and differences between cases are discussed throughout these chapters and summarised in Chapter 6.4, which also summarises the factors having an effect on role structures and suggest principles that explain why these factors have such effect.

6.1 Roles and role structures in the studied cases

The first research question concerned the dispersion of roles within an organisation. The cases are compared with one another to form an understanding of this issue. Firstly, the roles of individuals occupying similar positions are compared between organisations. Secondly, comparisons are made at the level of innovation and development systems to identify similarities and differences in the role structure types. These two aspects complement each other and together provide a detailed view of the role structures in the cases.

6.1.1 Positions and roles

The roles of individuals in similar positions seemed similar across organisations. Systematic comparisons were made between case organisations to evaluate whether this was true, and what would explain similarities and differences in roles. The organisational structures in the case organisations were rather similar;

therefore, it was possible to select six organisational positions for the comparisons, including top management, managers in the support functions, unit managers, team leaders, project managers, and grass-root professionals. The typical roles of the individuals in these positions in each organisation are described in Appendix 5. Next, the main similarities and differences are explored.

Top management

Top management included the CEO, the vice CEO and members of the management team and the board. In all case organisations, top management focused on organisation-wide development activities and on activities that could not be attached to any individual unit. Top management was often the key actor in strategic projects, development of the organisational structure and development of new service areas. Top management was also involved in organisation-wide IT development by suggesting ideas, setting goals and making formal decisions.

Top management was less involved in activities within individual units. Apart from making decisions concerning large investments, they often let units to autonomously develop the substance of services. However, differences between organisations and units were identified, as top managers were involved in issues that fell into their area of expertise. At ArcCo, top management was involved in many innovation and development activities because they had both good architectural visions and business skills. They were also more involved in units with managers who were less active developers. Top management of CoCo and EngiCo seemed involved in the service areas in which they were experts. The CEO of MarCo came from a different field, which may be one reason for the CEO's heavier emphasis on the development of organisation, resources and practices.

At AdviCo, the CEO was neither interviewed nor did the interviewees mention his role in innovation and development activities. His role seemed to be limited to setting the general goals related to growth and independence. The advisory units collaborated quite intensively with international counterparts, whereas the CEO's background was in accounting, a field different from advisory services. The next quotation describes how a team leader explained the top management's role.

'Of course they [the top management] could suggest ideas based on what they have seen abroad. But it is rare that the top management would suggest something that we hadn't recognised already. Typically we suggest ideas and they just approve them. I can't come up with any examples, where the top management had known better our business area, than what we know at the moment.' (Senior professional, partner, AdviCo)

In addition to expertise, the ownership structure could explain differences in top management's roles. ArcCo had very active managers who had established and

owned the company. At AdviCo, unit managers were partners who had authority to guide the units' development. MarCo, EngiCo and CoCo were externally owned, and the top management reported to corporate management.

Managerial positions in support functions

Managers in support functions played some roles in innovation and development activities. The development manager position existed at ArcCo, EngiCo and CoCo, and this role was very similar at these firms. These managers coordinated IT-related development and, in the latter two firms, they also coordinated quality development. The role expectations were rather formal and included goal setting, idea generation and idea collection, participation in decision making, coordination of development work and launch. Two factors explained these roles. Firstly, IT-related development work required specific expertise that service professionals lacked. Secondly, these novelties typically required investments and were launched organisation-wide; therefore, decision making was centralised. Typically, development managers did not participate in other types of innovation and development activities; those with the best expertise in the particular substance conducted service development.

Similar innovation and development systems and positions were not identified at MarCo and AdviCo, perhaps because technology played a less important role in their services and because the organisations could utilise tools developed in their international chains. At MarCo, the strategic manager and the financial manager were noted as having roles in innovation and development activities. The former coordinated certain activities related to the development of services and skills, whereas the latter was involved in rationalisation efforts. HR managers were also identified in some organisations, but their roles were not mentioned.

Unit managers

Unit managers had roles in both organisation-wide and unit-specific innovation and development activities. In the former, their roles differed based on the roles of top management and on the duration of the position. At EngiCo and CoCo, unit managers considered themselves important developers of strategic projects. At AdviCo, unit managers who participated on the management team were involved in setting general goals towards innovation and development activities. At ArcCo and MarCo, the positions of unit managers were new and top management's role was more important.

Secondly, unit managers were responsible for developing their units. Many of them seemed quite autonomous in decision-making: they did not have many constraints to developing the substance of the units as they desired, although top management often made formal decisions. These expectations seemed rather

formal, although the top managers' expertise had some effect on expectations towards unit managers' roles, as previously described.

Unit managers were also important in defining their own roles vis-à-vis the roles of the unit members. Some unit managers coordinated all unit-specific development activities excluding project-specific novelties, whereas others were not even aware of activities going on in teams. These differences seemed to depend on the nature of the service(s); in (large) units in which the services were actively developed, teams were quite autonomous. In small units and units with fewer development opportunities, the unit manager often coordinated the innovation and development activities, excluding small project-specific novelties. For example, at EngiCo's consultancy unit, self-steering individuals and teams had much autonomy, whereas unit managers in engineering design units controlled the development activities. In the latter, development focused on tools and practices that had to be similar among projects; hence, development was perhaps controlled more systematically.

Team leaders

Supervisory positions within units existed in four organisations. Team leader refers here to position-occupants who were responsible for services provided by a certain team. Unlike unit managers, they were not members of the management team. These positions were varied and are not as easily compared as the other positions. Appendix 5 shows the exact nature of these positions. Typically, the team leaders were not expected to participate in organisation-wide issues on a continuous basis. They were sometimes encouraged to present ideas and were expected to carry out specific tasks in organisation- and unit-wide development efforts. Participation was most active at AdviCo, where many service area leaders were very experienced and occupied high positions in the professional hierarchy.

Team leaders in all four organisations seemed rather autonomous with respect to developing their own areas. However, the nature of service determined the development possibilities. Team leaders were very active in developing new services at AdviCo and in the consultancy unit at EngiCo. Autonomy was also possible at AdviCo because many of the leaders were either partners or senior managers. At EngiCo, team leaders were given free hands to develop the services, and some of them acted very autonomously. In other units at EngiCo, fewer development possibilities seemed to exist, and development efforts focused on either unit or project levels. At MarCo, project directors were involved in almost all innovation and development activities; however, they had limited possibilities for autonomous development because of predetermined customer accounts.

Project managers and professionals

Because the firms conducted project business, all had project manager positions. At MarCo, the project managers and the 'creative people' had different educational backgrounds. In other firms, experienced professionals acted as project managers. Therefore, the project managers' and grass-root professionals' roles in innovation and development activities were often quite similar. However, given long-term experience, project managers often had greater opportunities for their voices to be heard. They also had more autonomy in developing the work practices, although all project members were often involved.

In other respects, the project managers' and the professionals' roles were quite similar and are here treated together. Typically, their roles focused on developing their own professional field by improving their expertise and by creating novel solutions in customer projects. Developing the professional field seemed implicitly expected of professionals in all organisations, although situational constraints, such as time, often prevented individuals from actively developing this domain. The professionals considered themselves autonomous in these activities, whereas in other types of innovation and development activities, someone else often controlled their participation. For example, in many cases, professionals were encouraged to suggest ideas or problems concerning the development of tools and practices, and specific development tasks were given to motivated individuals and/or those with skills in IT development.

In other organisation-wide development activities, professionals' roles were often limited. Sometimes they were encouraged to present ideas related to strategy or the unit's businesses and services, and specific development tasks were given to certain individuals based on the situation or individual skills and orientations. The roles also partly depended on individuals' motivation and persistence in getting their ideas through. Like team leaders' roles, in the service domain the role expectations depended on service type.

In brief, these comparisons show that position-related factors, such as expertise, autonomy, authority and available resources, had an effect on individuals' roles. The roles of individuals occupying seemingly similar positions varied based on organisational characteristics, the characteristics of a service in question, leadership style, individuals' own expertise and motivation, and other members' expertise areas. These findings are elaborated on at the end of this chapter. Next, comparisons continue at the level of innovation and development systems to supplement this picture.

6.1.2 Novelty type and role structure type

Comparisons were made at the level of innovation and development systems to identify explanations for differences and similarities in role structures. Given that

each case organisation included five to ten innovation and development system types, a total of 41 system types were compared with one another. Table 19 presents an overview of these system types. Because the novelty type and the breadth of the system seemed important in understanding role structures, the findings are organised based on the main domain of the novelty and the organisational level. Organisational level characterises the breadth of the system. For example, systems whose participants are from one organisational unit are defined as unit-level systems. Four levels were identified: organisational/managerial[14], unit, service area/team and project/individual.

Table 19. Overview of system types identified in the case organisations

Broad-ness of the system	Main domain influenced by the activity					
	Service and strategy[15]		Resources and practices		Organisation	
	Structure type	Case organisation	Structure type	Case organisation	Structure type	Case orga-nisation
Organi-sation / mana-gerial	Coordinated	ArcCo, MarCo, EngiCo (x2), CoCo	Coordinated	MarCo	Centralised	MarCo, CoCo
	Empowered	MarCo, CoCo	Empowered	ArcCo (x2), MarCo, EngiCo (x2), CoCo	Coordinated	ArcCo, EngiCo
Unit	Centralised	ArcCo, CoCo	Empowered	AdviCo, EngiCo, CoCo	Centralised	CoCo
	Coordinated	AdviCo, CoCo				
	Collective	ArcCo				
	Empowered	CoCo				
Service area / team	Empowered	AdviCo (x2), EngiCo	Empowered	MarCo, AdviCo, EngiCo		
	Collective	EngiCo, CoCo				
project / individual	Dispersed	ArcCo, MarCo, EngiCo, CoCo	Dispersed	ArcCo, EngiCo, CoCo		

14 At the 'organisational level', two types of activities were identified. In some activities only managerial levels were actively involved, whereas in others, everyone could be involved.

15 To simplify comparison, strategic development activities were included in the service domain – these activities most often influenced services, although they sometimes focused on organisation, resources and practices.

Note that, in this comparison, the systems focusing on project-specific novelties are placed at the project/individual level, although these systems are viewed as unit-wide dispersed systems. Unlike in other unit-level systems, decisions are made at the project/individual level, which justifies exploring these systems separately. The findings are discussed next, starting from the activities in the service domain.

Systems and their role structures in the service domain

Many novelties had an effect on more than one domain. In this comparison, all innovation and development systems with an effect on service domain were categorised in this domain. A total of 22 cases were identified and are listed in Table 20.

Table 20. Systems in the service domain

Breadth of a system	Case organisation	Case (innovation and development system type in a case organisation)	Domain(s) influenced	Role structure type
Organisation / top management	ArcCo	The development of business models	SOR	coordinated
	MarCo	Strategic goals for service development	SOR	coordinated
	MarCo	New business	S	empowered
	EngiCo	Corporate strategic projects	SOR	coordinated
	EngiCo	Firm-level strategic projects	SOR	coordinated
	CoCo	Development of strategy	SOR	coordinated
	CoCo	Development of new service areas	SOR	empowered
Unit	ArcCo	Centralised service development	SR	centralised
	ArcCo	Collective service development	SOR	collective
	AdviCo	Realigning a service portfolio within a unit	SOR	coordinated
	CoCo	Development of unit-specific strategy	SOR	centralised
	CoCo	Empowered service development	SOR	empowered
	CoCo	Coordinated NSD in new units	SOR	coordinated
Service area / team	AdviCo	Development of service area	SOR	empowered
	AdviCo	Development of individual services	SOR	empowered
	EngiCo	Collective NSD in consultancy unit	SR	collective
	EngiCo	Empowered NSD in consultancy unit	SR	empowered
	CoCo	Collective service development	SOR	collective
Project / individual (note: unit-wide)	ArcCo	Development of architectural design	SR	dispersed
	MarCo	Development of novelties within customer projects	S	dispersed
	EngiCo	Development of engineering design solutions within projects	SR	dispersed
	CoCo	Development of project-specific novelties	SR	dispersed
Domains: S = services, O = organisation, R = resources and practices				

The table shows that the structures were quite similar among the organisation-wide systems and among systems at the project/individual level, possibly because the activities were quite similar among firms. Role structure types varied more among the unit-wide and the service area/team-wide systems. Next, each level is discussed in turn.

Seven cases were identified at the *organisational level*. Five systems focused on strategic development, all with a coordinated structure. One explanation for coordinated structure was managers had the best ability to explore opportunities and evaluate ideas because they had an overview of the entire organisation. They also wanted to ensure that strategy was implemented. Hence, no room for organisation-wide idea generation was provided. These systems were identified in four organisations. At AdviCo, general goals were set at the organisational level, but all service development took place within the units.

Two systems with an empowerment structure were found at the organisational level. The first was new business development at MarCo, where everyone was considered able to perceive new business opportunities. Decision making was centralised because the managers were best able to evaluate the ideas based on their contacts and insights. The other system was the development of new service areas at CoCo, with the CEO responsible for new service area development and everyone free to suggest ideas.

Remaining cases were identified within existing units at different levels. The novelty type, leadership style, nature of the service and the size of the unit seemed to have an effect on participants and the role structures. Six cases were identified *at the unit level*. Unit-wide systems seemed to exist if the unit manager wanted to control development activities. An empowered structure was identified at CoCo in which everyone was encouraged to present ideas; due to scarce development resources, the unit manager's commitment was needed to provide the resources. In some cases, the unit manager acted as the main driver of the development, such as for radical changes. In these cases, role structures were centralised or coordinated. An exception is a collective structure in the development of a large change at ArcCo, in which the employees were viewed as having the best expertise to develop the service. Therefore, role structures depended on both the situation and the division of power and expertise between the unit manager and other members of the unit.

Services were also developed at *the level of a team/service area* and *at the project/individual level*. Although systems at both levels could co-exist within a unit, one or the other seemed dominant depending on the type of service. In units offering innovative services, novel ideas were systematically linked to the general service concept(s), and decisions were made either collectively or by the manager; therefore, team/service area-wide systems were emphasised. The role structures

in these systems varied based on leadership style in the unit: empowered, collective and coordinated structures were identified. These cases were found at AdviCo, in the consultancy unit of EngiCo and in a local team at CoCo. In units offering matured services, services evolved less systematically through the creation and spread of customer-specific novelties, which was typical in traditional units of EngiCo and CoCo, and at MarCo and ArcCo, where every customer solution had to be unique. Dispersed structures were identified in all of these cases. Professionals appeared to have the best expertise to develop novel solutions, as explained by one interviewee.

> 'I haven't asked for a permission [to develop new things], I haven't thought if I should have asked. My work is so autonomous that I don't think an external person could evaluate the applicability of new solutions better than I do; this is why I don't need to ask for permission...' (Professional employee, CoCo)

At AdviCo, dispersed structures were not identified, and replicability of a new idea was typically evaluated consciously before trying it out on individual customer projects.

Systems and their role structures in the resources and practices domain

Sixteen cases were identified in the domain of resources and practices. These activities included the development of tools and practices used in service delivery, the tools and practices related to project management and other managerial tasks and competence development. Table 21 shows that role structures were quite similar and that the empowered structure was the most typical.

Table 21. Systems in resources and practices domain

Breadth of a system	Case organisation	Innovation and development system	Domain(s) influenced	Role structure type
Organi-sation	ArcCo	Professional-driven development of IT tools	R	empowered
	ArcCo	IT-driven development of IT tools	R	empowered
	MarCo	Improving tools and skills in advertising	R	empowered
	MarCo	Rationalisation: Developing managerial tools	R	coordinated
	EngiCo	Centralised development of IT tools	R	empowered
	EngiCo	Development of quality system	R	empowered
	CoCo	Centralised development of IT tools and quality	R	empowered
Unit	AdviCo	Enhancing knowledge-sharing and capabilities	R	empowered
	EngiCo	Autonomous development of tools and practices at unit/team level	R	empowered
	CoCo	Development of tools and practices within unit	R	empowered

Service area / team	MarCo	Development of customer-specific work practices	OR	empowered
	AdviCo	Development of methods	R	empowered
	EngiCo	Autonomous development of tools and practices at unit/team level	R	empowered
Project / individual	ArcCo	Development of work practices	R	dispersed
	EngiCo	Autonomous development of tools and practices at individual level	R	dispersed
	CoCo	Development of project-specific novelties	SR	dispersed
Domains: S = services, O = organisation, R = practices and resources				

At the organisational level, three types of systems were identified. Firstly, systems with an empowered structure in the development of IT tools and quality were found at ArcCo, EngiCo and CoCo. These systems were organisation-wide because their aim was to unify tools and work practices. Centralised decision making was justified because work practices and tools needed to be similar for different projects to ensure quality of services and returns on investments in technology development. The participation of professionals was also needed because they could evaluate development needs and test novelties. A professional employee at EngiCo explains this participation as follows.

> *'I think it is a good thing that innovations come from those persons who conduct the work. If we had separate R&D department without hands-on knowledge of the practical work, the communication should be outstanding. Therefore I think it [involving professionals] is a plus. In software development, however, we need full-time developers, of course.' (Professional employee, EngiCo)*

Secondly, at MarCo, tools and skills in advertising were developed in an organisation-wide empowered system. The main goal of this system was not to unify practices but to encourage individuals to develop their professional skills. However, decision making was centralised because skill development typically included investments in courses and tools. Thirdly, at MarCo, a coordinated structure existed in tool development that was linked to rationalisation. Because rationalisation contradicted a prior organisational culture, top management coordinated and controlled the activities. This system is characterised as managerial rather than organisation-wide: many professional employees lacked the skills or motivation to develop managerial tools, and their role was limited to the application of some of these novelties.

Tool and competence development at the *unit and team/service area levels* existed for several reasons. At EngiCo and CoCo, the new units were engaged in autonomous tool development efforts because an organisation-wide system still focused on the needs of the traditional units. An empowered structure was identified in these systems for the same reasons as at the organisational level. At

AdviCo, two system types were identified. The first were unit-wide systems for enhancing knowledge sharing and capabilities with empowered structures: everyone was expected to participate and one person coordinated the activities. Secondly, service-specific methods were developed in teams because the professionals had the expertise to develop them. An empowered structure was identified in which juniors typically developed the methods and were coordinated by a senior member.

Work practices were developed *within projects* at MarCo, ArcCo, EngiCo and CoCo. Dispersed structures were identified, as the novelties were tested and developed in projects while delivering the service. At AdviCo, these systems were not identified. As in the service domain, tools were developed at the team level to ensure their replicability.

Systems and their role structures in organisation domain

A few innovation and development systems focused on the development of an organisational structure. The organisation structure was often modified when services were being developed; therefore, many systems discussed in the 'service domain' had an effect on this domain as well. Those novelties that only had an effect on the organisational domain were typically rare and large scale; therefore, coordination of organisation-wide efforts by top management was typical (see Table 22).

Table 22. Systems in the organisational domain

Breadth of a system	Case organisation	Innovation and development system	Domain(s) influenced	Role structure type
Organisation / top management	ArcCo	Internal development of the organisation	OR	coordinated
	MarCo	Rationalisation: Developing the organisational structure	OR	centralised
	EngiCo	Development of organisational structure	O	coordinated (collective at mgr. level)
	CoCo	Development of organisational structure	O	centralised
Unit	CoCo	Development of the unit's structure	O	centralised
Domains: S = services, O = organisation, R = practices and resources				

Organisation-wide development of the organisational structure was identified in four firms. For all occasions, these were non-recurring changes. The role structures were either centralised or coordinated; managers planned the changes and engaged everyone to implement them. In three cases, the CEO initiated the development. The fourth case concerned the creation of a team structure at CoCo in which unit managers were the key drivers. One system *at the unit level* was

identified at CoCo, in which a unit manager wanted to establish a matrix structure for the unit: the role structure was centralised because he planned and developed the new unit structure himself.

In brief, these comparisons support the position-based analysis of roles by raising factors that explain the breadth of systems and the type of roles structures. Whereas at the individual-level expertise, autonomy, authority and available resources was noted to have an effect on an individual's roles, at the system level the *dispersion of* expertise, responsibilities, autonomy and authority related to a specific domain seemed to explain the scope of a system and the role structure type. The structure was more centralised if the aim was to unify practices, the scope of novelty was large, investments were needed, services were matured or if leadership style was such that the leader aimed to closely control activities. Structures were less centralised if services evolved continuously, investments were not needed, novelties were local and/or managers shared responsibilities within a group.

Therefore, coordinated and centralised structures were typical in non-recurrent changes, such as large changes in a group's business logic or services and in the development of organisational structures. They were also common in service development in cases for which a unit or a team manager was the key driver. An empowered structure was very typical in tool development and in certain service development activities. On these occasions, ideas and inputs were needed from a large number of individuals; however, decision making was centralised because of investment needs, strategic importance or the need to standardise the end result. Collective structures were identified in small teams in which everyone's experience was important in evaluating the usefulness of an idea and in developing novelties. Dispersed structures were identified in all project-specific novelties, and the explanation was the expertise and autonomy of professional employees in their own professional domain. Next, comparisons continue that consider the flexibility in role structures.

6.2   Flexibility in role structures

In this study, the concept of flexibility refers to the extent to which role structures were stable and predetermined or susceptible to individual modifications. The three types of expectations were identified in all case organisations, i.e., expected behaviour related to position, expected behaviour related to individual and encouraged behaviour. Corresponding behaviour types were also identified. In all of them except for AdviCo, role-making and role-breaking behaviours were also identified, and in some situations these behaviours led to modifications in individuals' roles and to the modification or creation of innovation and

development systems. This chapter evaluates flexibility, first at an individual level and then at the level of role structures.

6.2.1 Individual's ability to shape one's own role

The flexibility of roles was evaluated based on individuals' ability to influence their role. Typical situations in which the identified five behaviour types occur are summarised and compared.

Expected behaviour related to a position was least often shaped by individuals. In all case organisations, these expectations and behaviours concerned the development of the areas for which an individual was responsible in his/her normal work. These roles often included tasks from idea generation to application. Chapter 6.1.1 summarises the typical behaviours; for example, top management developed strategic issues, while unit managers developed their unit's business and professionals developed their own expertise areas and created project-specific novelties. Application was typically expected from everyone whose work was influenced by the novelties.

Expected behaviours related to an individual occurred when individuals were given tasks that were not expected from other occupants of similar positions. These expectations were often linked to the individual's personal skills or motivation. Some roles were limited to the creation of a specified novelty, whereas others included continuous expectations for the development of a certain domain. For example, employees who conducted business in certain market areas at ArcCo were given development responsibilities in that area. Many expectations only seemed to hold if the individual accepted the tasks, which indicates that the role-occupants were able to shape expectations. Individuals also initiated these tasks themselves through role-making behaviour; this typically concerned broadening individuals' current roles. In the case descriptions, these behaviours were categorised as role-making. In all of the case organisations, for example, some unit managers had more autonomy to develop their units than others, which indicates that roles were negotiated based on individuals' skills and motivations.

Expectations concerning *encouraged behaviour* seemed occur if occupants of a certain position were likely to have hands-on knowledge in the domain in question but did not have actual responsibilities or autonomy in that area. For example, professionals were often encouraged to present ideas related to services and tools, but the ideas had to be discussed collectively or with a supervisor. At MarCo, all employees were encouraged to explore new business opportunities because this ability was considered embedded in a professional's skill-set.

Development possibilities seem to have an influence over whether certain behaviour was expected or encouraged. At EngiCo, the development of services in the consultancy unit was typically expected in some form, whereas it was

encouraged in engineering design units. As development opportunities were scarce in the latter unit, individuals engaged less frequently in innovative behaviour. Therefore, whether or not encouraged behaviours *took place* depended on both an individual's motivation and skills and the possibilities within the context. Lack of time, resources or support often prevented this behaviour.

Role-making concerned a variety of situations in which the role-occupants shaped their roles. Comparisons between contexts in which role-making did or did not take place show that limited access to, or dissatisfaction with, existing innovation and development activities led enthusiastic individuals to take roles not typically expected. An example is a situation in which current innovation and development activities did not serve the purposes of a specific unit, team or customer context. Additionally, personal and situational factors had an effect on role-making; for example, lack of time caused individuals to cut off tasks.

Role-breaking occurred in similar situations as role-making, but individuals did not negotiate with or inform others about the situation. Some interviewees justified the initiation of new types of development activities by slow progress of organisation-wide decision making and development. Doing the development work first and informing management about it later was faster and easier, and was sometimes accepted. For example, at EngiCo, a team manager's autonomous tool development was eventually accepted, whereas similar activities by individual professionals were seen to contradict the common goals.

Also not conducting the expected tasks was typically accepted: development tasks ceased from being strictly expected if an individual lacked motivation or if customer work was considered as more important. In some cases, individuals did not neglect their tasks completely but were less active in carrying out the tasks. For example, some unit managers at CoCo preferred developing their own unit instead of being active in strategic projects. However, they participated in these projects as expected. Resistance to change was typical reason for role-breaking in the application of novelties. In many instances individuals did not apply new tools although advised to do so - these situations took place in all organisations that aimed to unify work practices. Unless someone was authorised to control the launch of novelties, old practices remained in use for a long time.

Role-making or breaking did not seem to occur in AdviCo. Comparisons between organisations suggest that perhaps this was because of rather stable and enduring structures, such as the career structure in which individuals' tasks at each level were articulated clearly, and individuals typically aimed to actively advance their career paths. Because the rules were clear, role-making or breaking was perhaps less tempting. In addition, AdviCo's services were in an active development stage, and everyone was encouraged to participate according to

their own abilities. Hence, no tasks were explicitly 'forbidden' from individuals, at least not if they succeeded to proceed in the career ladders.

Overall, it seems that *an individual could modify the expectations towards his/her behaviour to a great extent*; hence, defining what was actually originally expected from the individual is a challenging task. For example, if an individual eagerly engaged in encouraged behaviour, he or she could ultimately be given many tasks that were not expected of others. Moreover, role-breaking could lead to situations in which the individual was given permission to act as he/she wishes, as previously explained.

6.2.2 Individual's ability to shape role structures

Flexibility at the level of role structure was evaluated based on whether individuals or groups of individuals influenced the identified structure. The cases showed that individuals created new innovation and development systems and shaped the structures in existing ones.

Firstly, because many of the studied units were quite new, the creation of unit- and team-specific innovation and development systems could often be traced down to particular individuals. In addition to top management, unit and team managers created new systems. Sometimes new systems were born through role-making behaviours. For example, at CoCo, outsiders initiated new service areas. At EngiCo, a local sub-unit manager initiated his own service development systems. In both cases, the particular individuals were not encouraged to engage in such behaviour, but the organisation subsequently accepted their activities.

Secondly, the managers *shaped the existing innovation and development systems*. For example, at ArcCo, top management aimed to change expectations related to strategic business development by engaging the new unit managers in the development work. At MarCo, role expectations related to new business development changed over the years as a consequence of mergers and changes in top management. In addition to these situations, the leadership style of the unit and team managers seemed to partially explain why the role structures in unit- and team-specific innovation and development systems varied. These cases suggest that, in particular, individuals in managerial positions were able to create and modify role structures; hence, the structures were seen as quite flexible.

The cases also included role structures whose creation could not be traced down into any particular individual. Examples include the creation of customer-specific novelties and the organisation-wide development of IT tools. In addition, some systems types, such as the development of individual services at AdviCo, seemed common in a case organisation: similar systems were identified in many units/groups. Other systems, such as the development of IT tools, were also quite similar between organisations, as described in Chapter 6.1.2. Because the data suggest that no individual organisational member shaped these structures and

because similar system types were identified in many contexts, they could be interpreted as less flexible.

In summary, individuals' ability to shape their own roles seemed typical in the studied organisations: the majority of actual role behaviours depended on individuals' own abilities and motivation. However, individuals' ability to have a broader effect on role structures seemed to depend on position, as individuals higher in the organisational hierarchy had more power to both create new systems and shape role structures in existing systems. Flexibility also varied regarding novelty type: the role structures in the creation of new services seemed most flexible, whereas role structures in IT development and in the creation of project-specific novelties were similar across contexts; therefore, these structures are assumed to be more stable. Similarities across contexts were also identified in strategic development activities and in the development of organisational structure, even though individuals seemed to be able to shape these systems. This leads one to question whether these structures were truly flexible. This dilemma is discussed further in Chapter 7.2.3.

6.3 Coherence of role structures within an organisation

The coherence of structures concerned the extent to which innovation and development activities in an organisation were guided by shared goals and the extent to which the expectations towards the roles of organisational members were shared. Because several innovation and development systems were identified in each organisation, coherence was seen to concern coherence between systems. This was translated as the question of coherence of goals pursued in different systems, since these goals were understood to guide members' behaviour in a particular system. Autonomy in goal setting and linkages between systems were explored to see if the systems supported one another or not. Comparisons showed that goals and expectations were most coherent at AdviCo. In other firms, autonomy and linkages between systems varied based on context-specific factors. Therefore, explanations for these linkages were sought by identifying and comparing differences between case organisations. Autonomy in goal setting is first explored, after which positive and negative linkages between systems are explored.

6.3.1 Autonomy in goal setting

Autonomy in goal setting was evaluated based on whether participants in the system primarily pursued goals set outside the system or whether they defined the goals themselves. Table 23 provides an overview of the level of goal setting in different systems, with the systems categorised based on their breadth and the main domain.

Table 23. Goal setting in innovation and development systems

Breadth of the system	Main domain influenced by the activity					
	Service and strategy		Resources and practices		Organisation	
	Goal setting level	Case organi-sation	Goal setting level	Case organi-sation	Goal setting level	Case organi-sation
Organi-sation / mana-gerial	corporation/ top manager	EngiCo, CoCo	top & IT manager	ArcCo	top manager	ArcCo, MarCo, CoCo
	top manager	ArcCo, MarCo	top / IT / unit manager	EngiCo	unit manager	EngiCo
			IT (& top) manager	CoCo		
			top manager	MarCo		
Unit	top & unit manager	AdviCo	top/ unit manager	AdviCo	unit manager	CoCo
	top manager/ collective	ArcCo	unit manager	CoCo, EngiCo		
	unit manager	CoCo, ArcCo	unit manager			
Service area / team	top & team manager	AdviCo	team manager	MarCo, EngiCo, AdviCo		
	(unit/) team manager	EngiCo				
	team manager / collectively	CoCo				
Project / indivi-dual	project manager & professionals	ArcCo, CoCo	project manager	ArcCo		
	team manager & professional	MarCo	project manager & professional	CoCo		
	team & project manager	EngiCo	professional	EngiCo		

Table 23 shows that goals were either set by members of the system or negotiated with a manager at one level higher. Except at AdviCo, top managers were often not actively involved in the concrete goal setting for systems identified at the unit level or lower. The findings seem to question the role of strategy in goal setting. Strategy represents the general goals of an organisation and is often seen as an important driver for innovation in services (Sundbo, 2001). In these cases, many interviewees noted that strategy was taken into account as a factor that set boundaries to innovation and development activities. In almost all case organisations, strategy included growth and profitability goals and certain specified development objectives. Excluding strategic projects, strategy did not

often guide the *substance* of innovation and development activities; the drivers of the innovation and development activities at the lower organisational level were typically tied to the specific circumstances of the work community, customer accounts and geographical areas. Strategy was most systematically taken into account in AdviCo, in which the growth and independence of advisory services were seen as goals that guided almost all of its innovation and development activities. However, also at AdviCo, the solutions for reaching the goals were discussed at lower levels.

One explanation for autonomy was that the individuals with hands-on knowledge of a specific context were most qualified to develop the goals, and management trusted these individuals. This scenario was explicitly raised at ArcCo, whose top management aimed to reduce their own influence on development activities within old units. In addition, autonomy was sometimes linked to the ability of individuals to create new systems, which often addressed the needs of the local context, rather than organisation-wide goals.

Therefore, the findings suggest that differences in work contexts within an organisation created the need to set development goals rather autonomously among those who best knew the development needs in a particular context. However, the innovation and development systems were not completely unrelated; some intended and non-intended linkages between systems were identified in each organisation. Next, both positive and negative linkages are analysed and evaluated based on synergies and conflicts in the pursued goals.

6.3.2 Positive linkages between systems

The first notion derived from the cases is that surprisingly few actual linkages existed between innovation and development systems within an organisation. Even systems that influenced the same domain were rarely linked to one another. Yet, some positive linkages existed. At AdviCo, the goals and activities of different systems seemed synchronous because all of them somehow pursued the growth and independence of advisory services. Although the goals supported each other, there was not necessarily much actual interaction between systems. Certain development activities were conducted in unit-wide systems, whereas others were conducted autonomously at the level of service areas or teams. This situation can be described as one example of *nested systems* (see, e.g., Van de Ven & Poole, 1995). AdviCo provided the only example of such synchrony in innovation and development activities. One likely reason is the strong organisational and professional culture discussed previously. Another reason might be that all advisory units were in similar development stages because of the strategic goals previously mentioned. In other case organisations, units varied in maturity and standardisation of services; therefore, the goals for innovation and development activities also varied.

The findings also included examples of *interlinked* systems in which the goals supported but were not strictly matched with one another. Firstly, *interrelationships between broad and local systems* existed in which both systems primarily pursued their own goals; however, the goals of one system occasionally guided the activities of another system. At MarCo, the goals of strategic service development guided new business development and the development of customer-specific novelties when opportunities to implement strategic ideas were identified. In addition to these top-down linkages, ideas spread from local systems to broader systems in some cases. These linkages were identified in the development of customer-specific novelties and the development of services at team and unit levels at ArcCo, EngiCo and CoCo.

Secondly, *linkages between systems at a similar level* also existed. At MarCo, the development of the organisational structure and managerial tools pursued the goal of rationalisation. Tasks related to new managerial positions (developed in the former system) were supported by common guidelines and tools (developed in the latter system). At EngiCo, the unit-level tool and service development supported each other and the creation of new tools could initiate opportunities to develop new services around the tool. Ideas also sometimes spread between unit-specific systems; for example, customer-specific novelties occasionally spread among units at EngiCo, MarCo, CoCo and ArcCo.

6.3.3 Conflicts between systems

Some actual and potential conflicts between systems were identified as well. Firstly, conflicts emerged *between systems at different levels, if individuals at the lower organisational level made decisions that were too autonomous.* Such conflicts emerged in the development of tools at CoCo and EngiCo. Autonomous development of tools was possible, if teams had enough expertise and if the development did not require specific investments. In some cases, tools developed in the local context went against the common objective to unify practices. These cases also show that if a team manager created a team-specific innovation and development system, the role expectations that a team manager set for employees did not correspond to the expectations that an IT manager had in mind. Another example is the potential conflict between autonomous unit-specific strategy development and the aim to develop an organisation-wide strategy at CoCo.

Secondly, conflicts emerged between systems that pursued very different goals, such as those that aimed to increase rationality and the substance of advertising at MarCo. This case shows how relative the concept of usefulness is: individuals evaluated the goals from the perspective of their own work. Although top management saw these two goals as supporting each other, many other organisational members saw the goals as incompatible, and rationalisation was seen as diminishing creativity in advertising work. A third group of interviewees

saw both goals as beneficial but systems were believed to cannibalise each other's resources. Competition for resources was also identified at CoCo, where difficulty suggesting ideas at the unit level led to a situation in which individuals focused on developing project-specific novelties.

Note that systems that were potentially in conflict might simultaneously benefit one another. Two examples from EngiCo and CoCo showed that certain tools developed at the team or unit level were afterwards recognised as beneficial in a broader context. The CEO's interview at CoCo also indicated that the organisation-wide strategy used elements identified in the unit-wide strategies. The actual positive and negative linkages were not yet realised.

In summary, autonomy seemed to characterise innovation and development activities in these organisations, likely because of two interrelated factors, the *locality of novelties* and *context-dependency of the required skills in innovation and development activities*. Often, the effect of novelties developed in different systems did not overlap; for example, in the service domain, organisation-wide systems typically focused on new service areas and cross-organisational offerings, whereas existing services were developed within the existing units. Similarly, the organisation-wide systems for developing tools and practices focused on novelties that benefit the entire organisation, whereas the tools and methods developed at the unit and team levels focused on tools used only in the unit or the team in question.

Positive linkages between systems included one example of nested systems and several examples of interlinked systems. Conflicts were identified between broad and local systems, due to too autonomous development activities, and between systems with different goals. Also cannibalisation of resources was identified as a conflict type. Considering the autonomy of different systems, conflicts seemed rare. The locality of novelties explains this phenomenon as well: the effect of novelties developed locally was often local; hence, these systems did not overlap with one another.

6.4 Explanations underlying role structures

Explanations for the dispersion of roles in the studied organisations are summarised in this section, based on the previous chapters. Firstly, the factors that affected position-related elements are explored, including the expected and encouraged behaviours on which a role-occupant had no influence. Secondly, the factors that had an effect on variations in roles between the occupants of similar positions are summarised. After discussing these factors, the underlying principles that seemed to pattern role structures are proposed. The linkages between the identified factors and the dispersion of roles are modelled as structural principles in role structures.

6.4.1 Factors affecting position-related role elements

Many role expectations were linked to an individual's position. *Skills, experience and customer contacts* related to a primary position seemed important; for example, service development activities were carried out by individuals who had the best hands-on expertise in the specific service area and who had customer contacts for applying the new ideas. IT managers were involved in IT-related development because service professionals did not necessarily have the necessary technical skills. Also the position-related *responsibilities* and *autonomy* or *authority* had an effect on role expectations; top management focused on organisation-wide novelties, unit managers focused on unit-specific innovation and development activities and project personnel focused on project-specific novel solutions. In particular, decision making tasks required autonomy or authority. Some interviewees explicitly stated that they focused on development efforts that they could carry out autonomously, which supports previous findings showing that autonomy and employee proactivity support each other (Hornung & Rousseau, 2007).

Secondly, two factors related to the *nature of work* explained differences in position-related role expectations. *Service type* concerned the maturity or the degree of standardisation of a service, which had a major effect on roles. For example, many consultancy and advisory services had to be developed continuously and typically relied on experienced and ambitious individuals. These individuals' roles were often more important and sometimes more autonomous in innovation and development activities than those who provided matured services. In the case of matured services, development typically focused on enhancing efficiency. Individual employees' roles were less autonomous and resources available for development were scarce. Consequently, individuals' development efforts focused on the creation of project-specific novelties. In some cases, also customer type constrained development opportunities; employees engaged in assignments for which the customer did not want an innovative solution had less opportunities to innovate.

The other work-related factor was *leadership style*. For example, at ArcCo and CoCo, one of the interviewed unit managers considered himself/herself the main innovator, whereas another relied on the expertise of unit members. This had a major impact on what was expected from the unit members. These work-related factors, service type and leadership style, had an effect on the skills, responsibilities and autonomy related to the position, which consequently had an effect on the roles in innovation and development activities. They are therefore viewed as having an indirect effect on role expectations.

Thirdly, *organisational or unit characteristics and situations* had an effect on roles. In *large change situations*, fewer expectations seemed to exist for individuals to act independently (see, e.g., Farr & Ford, 1990). Examples include

rationalisation at MarCo and 'philosophical change' in one unit at AdviCo. However, this effect also depended on leadership style; collective service development at ArcCo also concerned major changes within the unit; however, the managers decided to engage everyone. Moreover, *type of organisation* – that is, ownership and governance structures – could have an effect on roles. At MarCo, EngiCo and CoCo, corporate headquarters put some limitations on the scope of business and the money available for development activities. In particular, the owners of ArcCo and, to some extent, the partners at AdviCo had more freedom in setting goals and making decisions. *The nature of industry and profession* may also explain some differences, although these linkages are difficult to prove based on these cases. Close industry networks in the construction business could facilitate idea sharing between the CEO and external persons at CoCo. At AdviCo, a strong professional culture may explain coherence of role structures.

6.4.2 Factors affecting individual differences in roles

The aforementioned reasons explained to some extent position-related expected and encouraged behaviour. Individual-related explanations, including the role-occupant's own characteristics and the characteristics of other members in the role-set, had an effect on variations in roles between the occupants of similar positions. *Skills and motivation of the role-occupant* explained major differences in roles in situations in which explicit expectations did not exist, as well as when expectations were modified by the role-occupant. Individuals who were ambitious and persistent enough engaged in innovation and development activities in situations in which development activities were scarce or non-expected. The interviewees' motivations derived either from personal reasons, such as learning and a desire to advance one's career, or from the need to fix problems in current innovation and development activities.

In addition to an individual's own role-making efforts, supervisors delegated specific tasks. The findings suggest that other persons' skills and motivations also explained role allocation. In particular, the *role allocation between a supervisor and a subordinate varied based on each other's skills and motivation* in innovation and development activities. For example, in many organisations, top management paid more attention to units in which its manager was less active in autonomous development work. This situation created differences in the expectations for the roles of top management and unit managers. In many cases, a manager's own professional background directed his/her attention to certain units or teams, whereas other units had more autonomy in innovation and development activities. Figure 11 summarises the proposed explanations for role allocation.
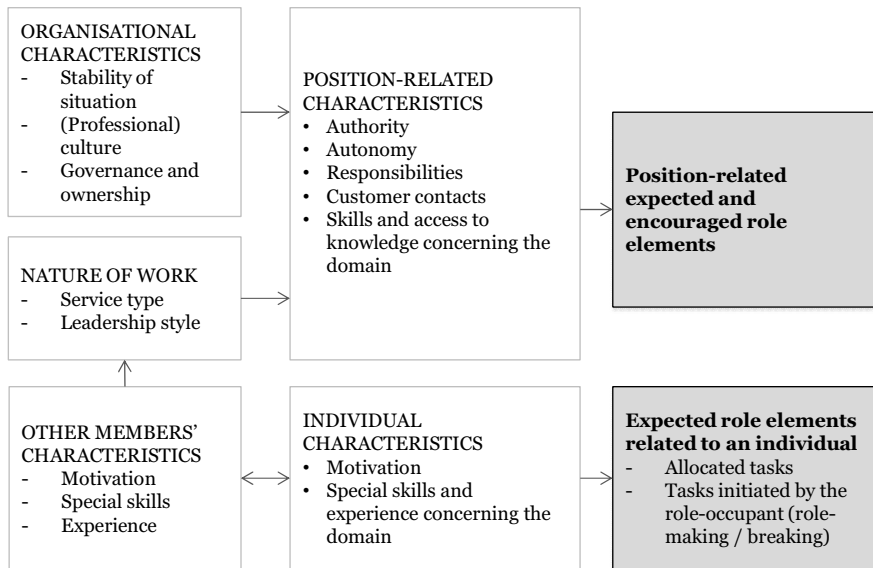
Figure 11. Factors affecting the dispersion of roles

6.4.3 Summarising principles underlying the dispersion of roles

At a more abstract level, it is possible to identify certain common principles that explain the link between these factors and role structures. It is suggested here that these principles can be identified in the factors' effect on the *abilities* needed to carry out certain innovation and development tasks. Certain abilities were often raised in the interviews as explanations for specific roles. Three categories of abilities were identified: *(1) the ability to explore, (2) the ability to evaluate* and *(3) the ability to mobilise resources to realise a specific type of novel idea*. These abilities can be viewed as individuals' resources that derived from the position- and individual-related characteristics, such as skills, knowledge, autonomy and authority.

The cases show that idea generation, development, application and decision making concerning certain novelty type required specific combinations of abilities, and the dispersion of these abilities among organisational members seemed to explain role structures: in centralised and dispersed structures, a few individuals possessed these abilities, whereas the abilities were more dispersed in coordinated, empowered, and collective structures, which meant that broader collaboration was needed. These abilities are discussed next, followed by the linkages between these abilities and the above-mentioned factors.

Ability to explore

Idea generation and development tasks required the ability to explore opportunities for novelties. Therefore, individuals with these abilities were often

involved in carrying out these tasks. The cases show that the ability to explore was often linked to what individuals do and see in their daily work. Therefore, these abilities often explained position-related expectations; for example, in strategic development projects, top management was in the best position to explore new opportunities. In service development, service providers and managers with a background in the professional field typically possessed these abilities. In new business development at MarCo everyone was considered to have the ability to explore opportunities. Certain abilities also came from individuals' skills and experiences, such as distinct educational backgrounds or work experience in a specific market area. The development of a novelty often required combining different pieces of ideas and opportunities, and these pieces came from different individuals. In the development of IT tools, professionals were able to explore opportunities and problems in work practices, whereas IT specialists explored technical issues. This example could be viewed as the manifestation of a fourth ability that might have an impact on roles; that is, the ability to develop. However, in most cases, skills needed for development tasks concerned the ability to explore and evaluate novelties. As discussed in Chapter 4.2., the development tasks can be seen as combinations of opportunity exploration, idea generation, testing and evaluation.

Ability to evaluate

Idea generation, development and decision making also required the ability to evaluate the usefulness of ideas (see e.g., Amabile, 1983). These abilities also derived from position-related skills and work experience, and were partly related to responsibilities at work. The usefulness of a novelty often had to be considered from many perspectives, and individuals possessing these abilities were sometimes different from those who were able to explore opportunities. For example, many new service ideas were evaluated not only from the perspective of customer value but also from the perspective of whether an idea can be implemented with current skills and practices, whether the idea supports current organisational goals and whether resources are available for realising the idea. Therefore, both managers and service providers were involved. Conflicts were sometime identified between these perspectives; for example, rationalisation at MarCo was considered useful from a management's perspective, whereas some professionals considered it harmful because it did not facilitate their work.

Ability to mobilise resources

The ability to mobilise resources concerned the possibilities to make decisions and to use resources in the development and implementation of a novelty. Depending on the type of novelty, an individual needed to mobilise his/her own

or someone else's resources; either autonomy or authority was needed. Many innovation and development activities required authority, i.e., the ability to persuade individuals to develop or apply the novelty. In centralised, coordinated and empowered role structures, individuals responsible for the domain in question had such authority. In collective role structures, authority was shared. If others' participation was not needed, the ability to mobilise resources required autonomy to develop and apply own ideas in work. In dispersed role structures, autonomy seemed to explain roles rather than authority.

Taken broadly, the ability to mobilise resources may also cover the mobilisation of a customer's resources. Individuals with the necessary customer contacts had to be involved in developing services, not only because of their ability to explore and evaluate customer needs but also because they were able to sell the idea to a customer. Therefore, understanding why individuals with customer contacts could implement their own ideas more easily than those without such contacts is easy. For example, at AdviCo, senior professionals had such contacts but juniors did not.

In summary, these three abilities seemed to originate from the position- and individual-related characteristics, such as skills, resources, authority and autonomy in daily work. Figure 12 shows the linkages between the above-mentioned factors and the three abilities, and the linkages between these abilities and roles. It is suggested that position- and individual-related skills and access to knowledge created the ability to explore and evaluate novelties, and authority, autonomy, responsibilities and customer contacts created the ability to mobilise resources. The previously mentioned organisational and work characteristics had an effect on the position- and individual-related factors, and therefore also influenced the dispersion of these abilities among organisational members.
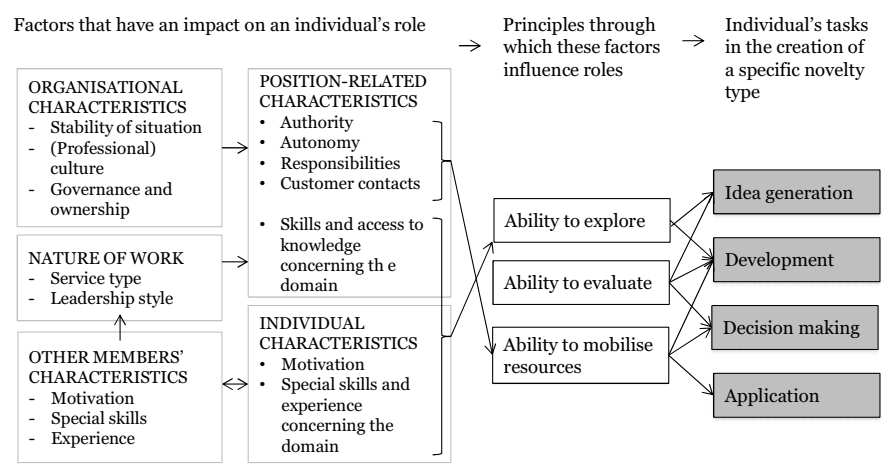
Figure 12. Principles underlying the dispersion of roles

The manner in which these abilities were dispersed within an organisation explained differences in the breadth and types of role structures. In some systems, an individual possessed (almost) all of the abilities, which seemed to explain centralised and dispersed role structures. For example, in the creation of project-specific novelties, grass-root professionals were able to explore and evaluate what is novel and useful based on their professional expertise and knowledge of the customer. Given their autonomy, they were also able to mobilise their own work time and resources to implement the novelty directly in a given customer project. In centralised structures, one or a few individuals were able to conduct most of the tasks, but needed to persuade other individuals to develop and/or apply the novelties.

In other cases, the abilities were dispersed around the organisation, indicating that broader collaboration was needed. For example, in the development of new services, employees who had intense interactions with customers were best able to observe and evaluate customer needs. However, managers had a broad understanding of the industry based on their networks and the ability to evaluate the strategic effects of novelties. In addition, they were able to mobilise resources to carry out development work. This type of situation could result in an empowered or coordinated role structure. Table 24 summarises how the abilities were dispersed in different types of role structures.

Table 24. Dispersion of the three abilities in different types of role structures

Ability type / role structure type	Ability to explore	Ability to evaluate	Ability to mobilise resources
Centralised	One / few members	One / few members	One / few members
Coordinated	One / few members (additional members in development tasks)	One / few members (additional members in development tasks)	One / few members
Empowered	Many members	Many members (from different perspectives)	One / few members
Collective	Many members	Many members	Many members (collectively)
Dispersed	Many members	Many members	Many members (autonomously)

A final note in forming an explanation is that what seemed to explain role structures are *those abilities that are acknowledged in the specific organisational context*. Not all individuals' abilities were acknowledged in the organisational context. For example, a grass-root professional could be able to

explore opportunities for strategic ventures, but if an organisation did not take into account such ability, it did not have an effect on role expectations. However, these abilities were sometimes realised through role-making and role-breaking behaviours. For example, at EngiCo, individuals with the ability to explore and evaluate IT applications were able to mobilise their own resources to develop novelties, even though doing so was neither expected nor accepted. This situation was facilitated by their skills and autonomy in their work. In some cases, such behaviour was not accepted, whereas in others, new innovation and development systems were created.

Therefore, one can conclude that in cases in which individuals had no ability to evaluate an idea from all required perspectives but could mobilise resources for its implementation, individuals were able to initiate their own innovation and development activities that could contradict other innovation and development activities within the organisation. In these cases, if the individuals were unable to mobilise resources, the tension emerged only through attitudes towards innovation and development activities, and individuals could decide to not participate as expected.

7. Discussion

This chapter discusses and evaluates the contribution of this study. Firstly, the answers to the research questions are summarised, after which the findings are discussed and explored in light of relevant theoretical perspectives. Then, the validity and limitations of the study are evaluated. Finally, practical implications of the findings and relevant future research perspectives are discussed.

7.1 Characteristics of role structures in innovation and development activities

The objective of the study was to understand the nature of role structures in innovation and development activities in professional service firms. Four sub-questions were set and answers to these questions are summarised next.

7.1.1 Five identified types of role structures

This study showed that many innovation and development systems existed within each case organisation, with different types of role structures. Five types of role structures were identified, and were named centralised, coordinated, empowered, collective and dispersed.

The answer to the first research question includes two observations. Firstly, a multiplicity of innovation and development activities were identified in each case organisation. Based on the participants and the goals, *these activities were seen to form several innovation and development systems*, each of which consisted of interconnected role behaviours of individuals who shared similar goals and expectations towards one another's behaviour in pursuing the goals. The goals differed regarding the type and scope of the novelties being pursued. Participants included those who contributed to the creation of specific novelties. Their involvement could involve one or more tasks, such as idea generation, development, and application of a novelty, and/or decision-making with respect to the novelty.

Secondly, the findings show that the role structures within these systems differed in terms of the dispersion of the four above-mentioned tasks. *Five types*

of role structures were identified. The identified structure types were labelled *centralised, coordinated, empowered, collective and dispersed*. In the first structure type, tasks were centralised and controlled by one or a few members, whereas in the last type all tasks were dispersed and autonomous; only common goals held the members of the system together.

Although previous studies have identified rather similar types of structures, they have not been brought into the same theoretical framework; therefore, their co-existence within a single organisation has not been shown. Because various types of structures were identified in each case organisation, the present study suggests that contextual explanations for differences in role structures were predominantly related to unit- and team-level, instead of organisational-level, characteristics. For example, a role structure was more centralised if the aim was to unify practices, the scope of novelty was large, investments were needed, services were matured or if a manager tended to control activities intensively. Structures were less centralised if novelties were local, services evolved continuously, investments were not needed and/or managers shared responsibilities within a group.

7.1.2 Flexibility in shaping roles and creating role structures

The study showed that the role structures were characterised by two types of flexibility. Firstly, individuals were able to shape their own roles. Secondly, individuals could have a broader effect on role structures by shaping the existing systems and by creating new systems. However, the extent to which an individual was able to have such an effect depended on his or her position.

Flexibility referred to the extent to which role structures were susceptible to individual modifications. Concerning the first type of flexibility, the findings showed that an individual could modify, to a large extent, the expectations towards his/her behaviour. Five types of behaviour were identified: expected behaviour related to a certain position, encouraged behaviour related to a certain position, expected behaviour related to an individual, role-making behaviour and role-breaking behaviour. Whereas the former three were consistent with existing role expectations, the latter two characterised situations in which an individual attempted to shape or create a role. The blurred boundaries between behaviours that were expected, encouraged or not expected showed the negotiability of individuals' roles, indicating that established role elements were also modified based on organisational members' situation, skills and motivations.

Individuals' ability to have a broader effect on role structures depended on their positions, as individuals higher in the organisational hierarchy had more power to create new innovation and development systems and to shape role structures in existing systems. At lower organisational levels, individuals' influence was likely to remain local and varied from deciding on whether or not to undertake

the expected/encouraged role behaviour to the creation of a new role. Flexibility also varied between different types of innovation and development activities. The role structures related to the creation of new services seemed most flexible, whereas role structures related to IT development, strategic development and the creation of project-specific novelties were similar across contexts; therefore, these structures are assumed quite stable. Although these findings suggest that individuals' agency is important to consider and that the role structures are fairly flexible, similarities across organisations suggest that there are general structural principles underlying the roles.

7.1.3 Autonomous structures as a natural condition in the studied firms

The innovation and development systems that were identified were fairly autonomous in terms of setting goals and systematic coordination between systems was not common. Therefore, role structures within an organisation did not seem to be very coherent. Contrary to indications that conflicting goals or expectations would inevitably emerge, autonomy seemed a natural condition in the studied firms.

The coherence of structures was evaluated based on the coherence of goals between systems. Autonomy in goal setting and linkages between systems were evaluated. The findings show that the goals were often set among the members of a system or in collaboration with a manager one level higher. Goals set outside the system, such as organisational strategy, guided the activities only loosely by setting frames for business. It is possible that informal negotiations between managers could influence goals set at lower levels, although these were not always explicitly discussed with interviewees.

Despite their autonomy, the innovation and development systems were not completely unrelated: some intended and non-intended linkages between systems were identified in each organisation. Positive linkages included one example of nested systems and several examples of interrelated systems. Conflicts were identified between broad and local systems resulting from development activities that were too autonomous, between systems with different goals, and between systems that competed on same resources.

These findings suggest that since goals were often not shared or synchronised, the structures were not very coherent. However, when considering the autonomy, conflicts seemed rare and the novelties did not overlap as much as one would assume. Reasons for this were locality of novelties and different development needs among units and teams within a firm: differences in the work contexts created the need to set development goals rather autonomously among those who best knew the particular context. Therefore, the findings suggest that instead of aiming to define organisation-wide shared goals, *autonomy seemed a natural*

condition in the studied organisations given the locality of novelties and the context dependency of the required goals and skills in innovation and development activities.

7.1.4 Principles underlying role structures

The study suggests that certain common principles in role structures can be identified: the breadth and type of role structure depended on how the abilities to (1) explore, (2) evaluate and (3) mobilise resources for the realisation of a novel idea were dispersed among organisational members. These abilities were linked to a certain novelty type and stemmed from position- and individual-related characteristics. Therefore, the dispersion of these abilities depended on the context and the novelty in question, which created variations in role structures.

The fourth research question addressed explanations of the identified role structures. The dispersion of the three abilities among organisational members is suggested to form principles that explain the dispersion of roles in the creation of a specific type of novelty. Those individuals involved in the creation of a novelty possessed at least some of these abilities, which enabled them to carry out certain tasks. In some cases, an individual member could possess all three abilities, whereas in other cases the abilities were dispersed among members and broader collaboration was needed.

To a large extent, the abilities were specific to a novelty type and the dispersion of the abilities among organisational members depended on several factors, which created local differences in role structures. The findings suggest that both position- and individual-related factors had an effect on these abilities. Position-related factors included skills and access to knowledge, autonomy, authority and customer contacts. Organisational characteristics, service type and leadership style influenced these position-related factors. Secondly, individuals' motivation, special skills and experience that go beyond what is needed in a position also affected these abilities, as well as other members' motivation, skills and experience. Although many individuals could possess the aforementioned abilities, only those that were recognised and acknowledged in the organisational context seemed to affect the role expectations. Differences between actual and acknowledged abilities may have initiated some of the identified role-taking and role-making behaviours.

7.2 Theoretical interpretations of the findings and emerging ideas

The findings of the study are discussed and elaborated on in light of existing empirical studies and theoretical viewpoints. The findings seem to both support existing theories and specify their application in this specific context. In addition,

some theoretical ideas that may explain interesting points identified in the study are discussed.

The findings are discussed in three parts. Firstly, the innovation and development systems and role structures are discussed in light of existing innovation studies in the service context. This study suggests that organisations provide a more varied context for innovation and development activities than previously discussed and highlights some aspects that should be taken into account in these studies. Secondly, the flexibility of roles and role structures is discussed in terms of different forms of individuals' agency in relation to these role structures. These agency forms may be viewed as embedded in the role structures if the local nature of structures is acknowledged. Thirdly, the locality versus the universality of role structures is discussed. The dilemma is to understand what causes similarities in PSFs that conduct business in different industries, and how these similarities should be evaluated if individuals' agency is simultaneously acknowledged. Note that the ideas and interpretations in the latter two chapters are only tentative and should be examined in more detail in future research.

7.2.1   Multitude of systems and multiplicity of role structures

In each organisation, innovation and development activities formed many social systems with different participants and goals. As such, this finding is not surprising considering the broad range of novelties included in the study. Different organisational members developed these novelties depending on how the abilities required for the creation of a specific type of novelty were dispersed. These findings support previous studies that suggested that different organisational sub-groups developed different types of innovations. For example, Daft (1978) separated 'administrative' and 'technical' cores of an organisation from each other. The administrative core resembles what is termed in this study as the organisational domain, as well as administrative tools in the resources and practices domain. The technical core resembles the services domain and the tools used in service delivery. Daft suggested that administrators, i.e., managers and support functions, and technical core employees, i.e., professionals, are expected to play important but different roles in the innovation processes: each group is expected to initiate innovations related to their own organisation task (Daft, 1978).

The findings of this study support these ideas. However, in the studied PSFs, administrative and technical personnel were less easy to separate from one another. Excluding MarCo, the 'administrative' staff also had a professional background rather than an education in business and economics (Løwendahl, 2001). Therefore, the administrative staff was also involved in so-called technical innovations that fell into their area of professional expertise. For example, unit

managers had both 'administrative' and 'technological' roles with respect to the development of their own unit (see Ibarra, 1993, for similar results).

Daft (1978) also suggested that, for large administrative changes, the coupling between these two cores is strict, whereas in other cases the technical core acted more independently; that is, professionals have autonomy in innovating their own professional domains. The findings, especially concerning MarCo, support these notions. The rationalisation effort is viewed as a large administrative change that influenced the entire organisation. A comparison of interviewees' stories of typical practices before and during this effort showed that the change constrained the ability of professionals to autonomously develop the advertising substance; therefore, they resisted rationalisation to a certain extent.

The study also supports earlier findings that novelties related to (high) technology are developed separately from normal service delivery. For example, Sundbo (1996) suggested that high-tech companies typically organise innovation activities into expert systems that consist of R&D experts whose primary tasks are related to innovation, whereas in service organisations, innovation activities rely on service personnel. In the studied organisations, specific experts were assigned to develop IT tools and to unify work practices, whereas professional employees developed the substance of services. However, the professionals also played a major role in the development of tools and practices because of their practical knowledge; therefore, none of the innovation and development systems was completely isolated from service production.

These insights suggest that the multitude of innovation and development systems identified seems unsurprising considering the multitude of novelty types included in the study. Although the systems within an organisation did not necessarily support one another, *the co-existence of different systems seemed to be a normal and 'natural' condition in the studied organisation,* rather than a manifestation of conflicting goals among different organisational sub-groups. However, certain systems were born from either conflicting goals or the emergence of new goals not taken into account in the current activities. Change situations deriving from various sources created tensions in the existing innovation and development systems. These conflicts may have been merely temporary phenomena, as the organisation was adjusting to new ways to innovate; however, a longitudinal study is needed to explore this question.

Comparing the findings of this study to the aforementioned studies, the innovation and development systems in the PSF context seem to overlap to a large extent regarding the participants: *an individual organisational member may be simultaneously included in many innovation and development systems, having a different role in each*. Managers of these firms participate in both 'administrative' and 'technical' innovations and professional employees participate in service and tool development, and in administrative development.

An individual's roles in these different systems varied based on the abilities needed to create a specific type of novelty.

These results lead the discussion to one of the main contributions of this study; namely, the multiplicity of role structures in these systems. Although the present conceptualisation of a role structure was developed in this study, earlier PSF studies have identified similar structure types. Centralised and coordinated structures resemble a 'top intrapreneurship' mode (Sundbo, 1997), the corporate-driven form (Heusinkveld & Benders, 2003), or normal strategic planning processes, although in this study similar structures were identified not only at the top managerial level but also at lower organisational levels.

Empowered structure resembles a strategically driven empowerment system (Sundbo, 1996, 1997, 2001) in which employees carry out innovation activities but are controlled and supported by management. The collegial structure resembles the collective professional mode (Sundbo, 1997) and the professional-driven form (Heusinkveld & Benders, 2003) in which employees act and make decisions collectively. Moreover, a dispersed structure is seen as one variation of the professional-driven form. Taking into account that project-specific novelties were typically developed in these structures, the dispersed structure also resembles the typical understanding of innovative behaviour at the shop-floor level (e.g., Axtell et al., 2000).

Although these structures have been previously identified, *the coexistence of different structure types in a single organisation has not been previously discussed in detail.* Instead, is has been assumed that a firm applies one dominant mode in organising service innovation activities. In addition, role structures in different organisational domains and levels have not been compared, likely because of different levels of analysis: earlier studies aimed to identify patterns that separate firms from one another in service innovation activities. Therefore, this study contributes to current innovation studies by showing that multiple role structures exist within a single organisation, and by arguing that *the type and the locality of novelties are important factors to take into account.* In addition to the type of novelty, the contexts within an organisation differ from one another and cause differences in role structures. The diversity in roles should be taken into account in studies that explore employees' empowerment in innovation and development activities because one form does not necessarily fit all situations.

7.2.2 Individuals and groups as role players and job crafters

The findings emphasise the informal and negotiated character of the role structures in innovation and development activities. The research contributes to current studies on innovative behaviour by showing how such behaviour may be either expected or encouraged role behaviour, and that the expectation may

concern an individual employee or all occupants of a position. The study also shows how extra-role behaviours – that is, role-making and role-breaking behaviours – may result in either idiosyncratic tasks or cutting off individuals' tasks. As such, the study supports the theories on roles that acknowledge individuals' ability to purposefully shape their roles (e.g., Fondas & Stewart, 1994; Wrzesniewski & Dutton, 2001).

This study discussed these role concepts in relation to social structure: individuals' ability to shape roles and role structures were conceptualised as flexibility in role structures. The identified types of behaviour can be discussed in terms of individuals' agency in innovation and development systems. If agency is interpreted as individuals' possibilities for exercising power – that is, making a difference (e.g., Giddens, 1984) – three forms of agency can be identified. Firstly, the existing role expectations enabled and constrained individuals' *power to create beneficial novelties* in different ways. Role-occupants who were expected to participate in innovation and development activities were simultaneously entitled and obligated to engage in these behaviours. Role-occupants who were encouraged to participate were entitled but not obligated. Moreover, individuals who did not have a role in the given system were merely constrained (see also Tuominen, 2008).

Secondly, individuals exercised *power in changing (or attempting to change) their own roles* in innovation and development activities. These actions were labelled role-making and role-breaking behaviours. Individuals shaped their existing roles, attempted to play a role in existing role systems in which they were not yet involved and initiated altogether new roles. Thirdly, individuals *exercised power in changing (or attempting to change) the roles of others*. Some individuals were able to create new innovation and development systems and to shape the old ones. For example, by engaging an entire team in such activities, team leaders were able to shape the roles of their subordinates.

The question is whether the latter two forms of agency are seen as embedded in, shape/violate or act outside the structure. The present study assumed that if role-making or role-breaking behaviour became acknowledged and accepted in a specific context, it resulted in new role behaviour. These behaviours were considered to be emergent role elements (Ilgen & Hollenbeck, 1991) that were included in a role structure rather than remaining external to it.

Individuals' ability to shape roles and role structures was typical of the studied organisations; as a consequence, many local variations existed. In many situations, either expectations did not exist or only certain expectations existed before a role-occupant entered a system, and individuals were able to shape their roles. In the case of encouraged behaviour, individuals' ability to determine concrete forms of participation was most obvious. The flexibility of structures and the identification of encouraged behaviour as part of the structure suggests that

the structure itself could be viewed as containing slack, which is filled when individuals enter the system in a particular context (Goode, 1960). This is perhaps because the three recognised abilities only partially derived from organisation- and position-related characteristics, as also individual characteristics had an effect on them. These findings are in line with Ibarra's (1993) study, in which both personal and structural sources of power were identified as determining an individual's involvement in innovation activities. Hence, some type of an *expectation towards role-making may be embedded in the role structure itself*. Figure 13 suggests how this type of process could be modelled, where a priori expectations are modified through individuals' practices and negotiations, resulting in specified expectations.
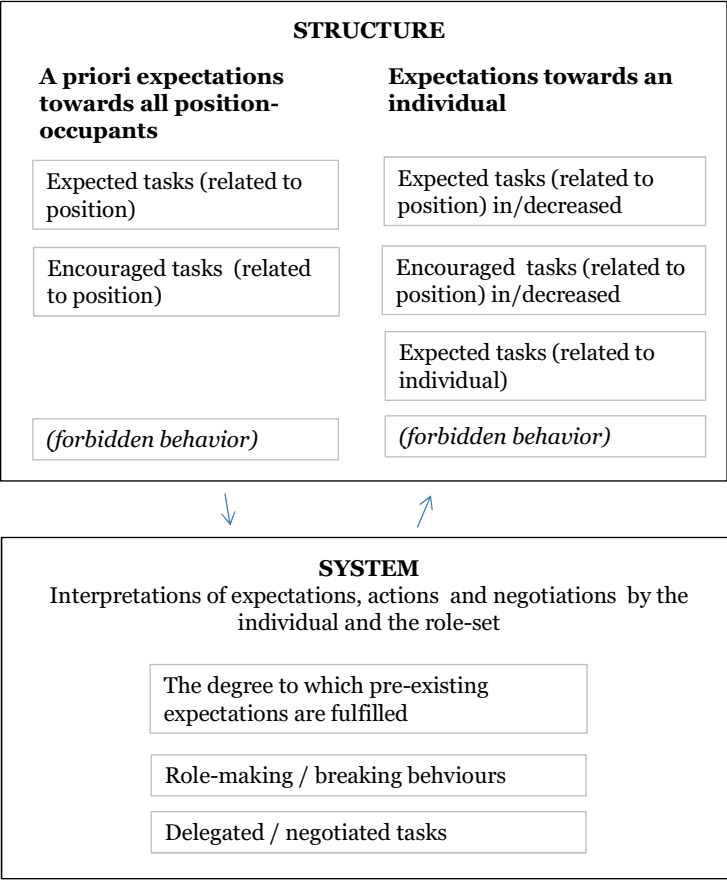
Figure 13. An individual's influence on role expectations

Role-making behaviour has not often been discussed in relation to social structure. Instead, structures are often considered to be broader, and not local, phenomena; this tendency is emphasised in an increasing number of studies that focus on institutional levels of analysis. Therefore, it is considered difficult for an

individual person to shape structures. It has also been claimed that change has taken place only if the new practice is dissociated from any particular individual (Barley & Tolbert, 1997; Jarzabkowski, 2008).

In contrast, this study emphasised the local nature of identified role structures. In addition, some roles and role structures were acknowledged or approved only by a local group, such as a team, and they could be incompatible with other structures in an organisational setting. The discussion by Wrzesniewski and Dutton (2001) on *job crafting* provides support for understanding these local processes. They defined job crafting as 'the physical and cognitive changes individuals make in the task or relational boundaries of their work' (p. 179). They suggested that, in addition to individuals shaping their own work, job crafting may be carried out by either managers (often addressed in work design approaches) or a group that collectively engages in job crafting. They characterised *collective and negotiated form of job crafting* as follows: 'where task boundaries are drawn around teams or collections of individuals, there may be more opportunities to revise, alter, and craft relational and task boundaries as part of collective improvisation on how work gets done' (Wrzesniewski & Dutton, 2001, p. 197).

In the organisations studied, the creation of local innovation and development systems can be seen, to some extent, as either managers' job crafting or collective job crafting, which is enabled by the autonomy of different units and teams. Therefore, the findings suggest that *paying attention to local structures is useful when employees' role-making – or job-crafting – behaviours are discussed in relation to social structure*. These local structures, such as a single team's development practices, would easily be viewed as random variations rather than as manifestations of social structure, if analysis was conducted at higher organisational or institutional levels.

7.2.3   Structural principles as binding time and space

The context of innovation and development activities in PSFs posed interesting challenges for an analysis of role structures. As discussed in Chapter 2, a structure is viewed as something that binds social practices *over time and space*; therefore, it explains repetition and patterns in social behaviour (Barley & Tolbert, 1997; Giddens, 1984). In the studied context, two challenges exist to explain and evaluate these structural qualities.

The first feature is the aforementioned notion that *individuals' agency seems high* in creating local innovation and development systems. As previously suggested, this type of agency is to some extent interpreted to be derived from 'slack' in the structure. The second feature is that as opposed to service delivery activities, *many innovation and development activities did not take place on a continuous basis*. Hence, no daily routines existed to produce and reproduce role

structures. The composition of participants involved in creating a novelty could also vary each time; for example, in IT-related innovation and development systems, the role of a development manager was permanent, whereas professional employees who participated in development processes varied.

These two features – individuals' ability to create local structures and the infrequent nature of innovation and development activities – make it challenging to estimate whether the identified activities really reflect more enduring role structures. However, comparisons between contexts showed that similar expectations seem to arise under certain conditions, suggesting that roles were not completely local and temporary. Critical realism suggests that these similarities show underlying structural principles linked to certain circumstances; that is, *some more general contingencies* shape innovation and development activities in professional service firms. Although organisations differed from one another to a certain extent, similarities were identified across organisations in similar settings. In particular, the role structures were strikingly similar for the development of the IT domain and professional expertise. Hence, these mechanisms could not be based entirely on organisational characteristics, such as formal rules, organisational culture or continuity of daily practices.

The findings suggest that *the structural principles are partly embedded in the characteristics of PSFs*, such as expertise and autonomy related to the professional positions. Also the 'slack' in the expectation may be embedded in more general characteristics of PSFs. Figure 14 suggests an interpretation of role structures and other mechanisms underlying innovation and development activities, based on the initial conceptualisation presented earlier (Figure 7). If structure is understood to represent rules and resources, these rules and resources may be seen to include goals (that is, what are considered beneficial novelties and whether these should be pursued), the norms concerning the means to achieve the goals and the norms concerning what are valued as resources in achieving the goals. The three abilities identified in this study are conceptualised as such resources. Although the abilities seem common principles that underlie role structures, contextual characteristics determine their dispersion and whether they are recognised and valued in the particular context. Therefore, individuals' actual roles are viewed as depending on the underlying structures and on their abilities, which derive from position-related and individual-related characteristics shaped by the context (see also Ibarra, 1993).

Underlying forces / mechanisms

Role structure:

- Goals (what are considered beneficial novelties and whether or not they should be created)
- Norms concerning means to achieve goals and what are valued as resources in achieving these goals

→ Rules and resources that determine the dispersion of role expectations:
- What is expected, encouraged and non-expected from each role-occupant
- How much 'slack' does the structure contain

Actual role expectations: a function of established structure and the position-occupant's perceived ability to explore and evaluate a novelty in question, and mobilise resources for its implementation

Context
- Organisational characteristics
- Nature of work
- Other members' characteristics
- Novelty type

Individual's innovativeness (willingness and abilities)
- Position-related and individual characteristics

May be realised in

Shape

Innovation and development activities

Produce

Innovations and other beneficial novelties

Observable phenomena

Figure 14. Conceptualisation of a role structure and other factors having an effect on roles

Because of the similarities across contexts, the suggested principles bind practices over time and space, not only within an organisation but also between organisations with similar characteristics. Acknowledging these more universal principles could be interpreted as placing less emphasis on individuals' agency; individuals have to choose how to act based on situational constraints rather than based on their own free will. However, these findings are in line with the theory of structuration because the underlying structures both enable and constrain individuals' actions; hence, the agency is still seen to arise from the structure (Giddens, 1984).

7.3 Practical implications

Based on these findings, it is useful to consider several issues when the aim is to improve innovativeness in professional service firms. Because the purpose of the study was not to evaluate the success of the identified role structures and because managerial perspectives were predominantly excluded from the analysis, the following issues should be considered only as tentative suggestions for practitioners. Experimentations of different role structures in specified contexts, as well as the evaluation of the success factors in each structure, are needed in order to provide more justified propositions.

The present study suggests that organisational practitioners should consider two controversial issues. The first concerns the autonomy of different organisational sub-groups to develop their own activities. The findings suggest that *autonomy is necessary to motivate employees and enable the development of useful and practical novelties.* However, autonomy can also lead to re-invention of the wheel and to conflicts between development goals. This indicates that organisations would benefit from systematic knowledge-sharing and coordination. The key question *is how to coordinate innovation and development activities*, while at the same time giving groups and individuals the freedom to develop their own activities.

Some suggestions can be made based on the findings. PSFs could benefit from *increasing the visibility of innovation and development activities.* Many of the identified novelties were local, which meant they were not visible to other organisational members. This invisibility occurred both in vertical and horizontal dimensions. For example, top management was not aware of the development of professional expertise, and grass-root professionals were not aware of strategic development projects. In addition, novelties developed in different teams were not necessarily visible to other teams, and ideas did not spread. *Acknowledging, highlighting and rewarding innovative efforts* would be likely to both motivate employees to engage in these behaviours and enable leveraging the ideas when appropriate. However, as the ability to evaluate many novelties was embedded in teams, the teams should not be forced to apply novelties mindlessly (Haas & Hansen, 2005). Persuasive champions are often recognised as being important for explicating the benefits of a novelty to their colleagues (Heusinkveld & Benders, 2005); employees may also be given some freedom to translate the idea to fit their own preferences (Heusinkveld & Benders, 2003).

The second controversial issue concerns the degree of formality in role expectations. Many of the identified innovation and development activities were informal in the sense that a few established and explicated role expectations exist. The question remains as to *whether explicating role expectations more clearly would motivate employees or suffocate innovation and development activities.* The findings from AdviCo suggest that clear expectations may improve

employees' abilities and motivation to participate. In some firms, employees faced unnecessary ambiguity as a result of the lack of clarity about whether innovation and development activities were encouraged.

However, some issues discourage formalisation. Firms should acknowledge that it is not always beneficial to increase innovativeness if there are no opportunities to innovate. If behaviour is explicitly expected or encouraged, employees should be given the resources they need to undertake the activities (namely, time, information and access to necessary forums). Expectations without such support can decrease the motivation to engage in innovative behaviour. In addition, because much seems to depend on individuals' own motivations, it may be counterproductive to force employees to innovate (e.g., Anderson & Gasteiger, 2007). One solution may be to at least *explicate those situations in which innovation and development activities are encouraged* in order to create the necessary space for individual organisational members to shape their roles based on their motivation and skills and to prioritise situations in which novelties are really needed. Firms could also benefit from *explicating more clearly when and to what extent autonomy is accepted*: units, teams and individuals may be given a clear vision and boundaries within which they can set goals and make decisions.

Organisations are also likely to benefit from *identifying the optimal role structures in the development of different novelty types,* even if they maintain some degree of informality and voluntariness. The findings suggest that an organisation should not force all of its innovation and development activities into a similar mode. In some cases, individual employees may be given free rein in the development of a novelty, whereas centrally controlling the activities may be more useful in other cases.

Optimal structures could be identified by exploring how the three abilities identified in this study are dispersed among organisational members. It seems that the ability to explore and evaluate a novelty depended to a large extent on domain-specific knowledge and skills (cf. Amabile, 1988). Therefore, firms could be advised to first identify individuals with necessary expertise and then encourage these individuals to innovate within the scope of possibilities, available resources and their own willingness. Thirdly, it is important to consider who should be able to mobilise resources for the development and implementation of novelties.

The findings of this study concur with others that have encouraged firms to increase participation in decision-making when possible (Ibarra, 1993; De Dreu & West, 2001; Kesting & Ulhøi, 2010). However, only in collective structures was everyone involved in decision-making. These structures were not common, and seemed best fitted to small groups that did not have a high power distance and valued individual expertise. In these cases, everyone's expertise was utilised and the participants seemed motivated and committed to develop and implement the

novelties. Similar benefits were identified in dispersed structures, where individuals and project groups were able and motivated to develop small-scale novelties autonomously. Although dispersed structures seemed to be important enablers of continuous service development, the challenge was to share and leverage the small-scale novelties within a system.

Empowered structures seemed to fit to situations that require everyone's expertise and/or commitment, but there are either too many participants to make collective decisions or decision-making requires knowledge that only a few individuals possess, such as knowledge of strategy and financial possibilities. Although these structures seemed common and useful, problems arose because not all individuals who were expected to apply a novelty were involved in the creation of it. With these notions in mind, it can be assumed that these problems escalate in centralised and coordinated structures. These structures seemed most useful if the needed expertise is centralised or does not yet exist. For example, the current organisational members did not possess the required expertise in the creation of new service areas. These structures may also be necessary in legitimising large-scale changes, such as strategic projects and administrative changes.

In summary, professional service firms are likely to benefit from becoming aware and explicating the main principles in role structures in the development of different kinds of novelties, while simultaneously nurturing autonomy and the freedom of individuals to shape their roles. Two common problems remain to be solved. Firstly, with autonomy comes the challenge of coordination and leveraging the ideas within the organisation. Secondly, more controlled modes lead to the problem of motivating individuals to utilise the novelties. The findings suggest that firms generally benefit from broad participation in innovation and development activities: therefore, collegial and empowerment structures, and dispersed structures supported by increased coordination, may be favoured, although coordinated and centralised structures seem justified in large-scale changes.

Finally, the findings suggest that the nature of innovation and development activities, and the employees' roles, change as services become mature and when activities are rationalised. The emphasis may shift from radical ideas towards improving work processes and customer-specific solutions. This shift should be taken into account when evaluating employees' motivation; when services are formalised, ambitious professionals may leave the team in search of a challenging and a more dynamically developing work environment.

7.4   Evaluation of the study

There is an on-going debate over how the quality of qualitative research should be evaluated. Qualitative research has its distinct features; therefore, measures of validity and reliability used in quantitative research are not applicable as such. In addition, different paradigms of qualitative research require different criteria (Creswell & Miller, 2000). Maxwell (1992) discussed the quality of critical realist studies. According to him, *validity concerns the fit between a researcher's account and the phenomena that the account is about.* However, in qualitative research, different and equally valid accounts of a phenomenon can coexist depending on the researcher's perspective. Theories are needed to model the underlying phenomena not accessible to the sense experience, and these theories are always socially constructed models themselves (Reed, 2005), showing one perspective to the studied phenomenon. Therefore, validity concerns generating evidence about the relationship between the account and its object (Maxwell, 1992).

Maxwell discusses five types of validity: descriptive validity, interpretive validity, theoretical validity, generalizability and evaluative validity. The last form concerns studies in which actions are evaluated (for example, legitimacy of action). Because no such judgments are made in this study, the discussion focuses on the first four types of validity, after which reliability and the key limitations are discussed.

7.4.1   Descriptive validity

Descriptive validity refers to the accuracy of the account and the data (Maxwell, 1992). In this study, selection of interviewees was planned carefully to ensure that different perspectives on the phenomenon were included. All interviews were recorded and transcribed word-by-word to ensure that the analysis was based on what interviewees' *said* and that it was not misheard or misremembered. The interview transcripts were read through carefully and tape recordings were used if important issues in a transcript were ambiguous.

The most important threat to descriptive validity in this study concerns the descriptions of collective activities because not all individuals that participated in a specific innovation and development activity were interviewed. Sometimes, description of a system relied only on one interview. To increase this validity, the interviews were evaluated against each other and against secondary data. Other tactics to improve the accuracy of descriptions are discussed later in relation to internal generalisability.

7.4.2 Interpretive validity

Interpretive validity refers to whether the events/deeds identified in the data are interpreted correctly in relation to the aims of the interviewees; that is, the accuracy of an emic perspective. Maxwell argues that 'participant's meanings are never a matter of direct access, but are always constructed by the researcher(s) on the basis of participants' accounts and other evidence' (1992, p. 290). This challenge was taken into account in the interviews by using interviewees' own language instead of theoretical terms, by asking them to describe concrete examples of events and behaviour and by approaching the same themes from many perspectives. The aim was to obtain as comprehensive a picture as possible of the interviewees' viewpoints.

During the analysis, a summary of each interviewee's perspective was formed first, and subsequent analysis was evaluated against this summary. The responses were also evaluated against other interviews and secondary data, where possible. In addition, workshops were held with the interviewees to present and discuss the initial findings. However, a danger always exists that the interviewees' motivation and the purpose of their deeds were misinterpreted. Conducting observations could have improved interpretive validity by getting to know the interviewees' work context and culture. However, certain additional insights into the context were acquired from a long-term research relationship with some of the studied organisations.

7.4.3 Theoretical validity

Theoretical validity refers to whether the accounts function as correct explanations of the phenomena; this statement concerns the validity of the concepts and their relationships, as theoretical explanations are considered. This consideration is essential in this study because the concepts used in capturing the empirical phenomena derived from theory rather than from the interviewees' world. Secondly, given the collective nature of role structures, these structures were not necessarily visible in their totality to an individual organisational member. Therefore, the researcher constructed the accounts through matching interviewees' descriptions to each other and to relevant theoretical constructs. Maxwell identified two validity types: construct validity and internal/causal validity.

Construct validity has been defined as either the legitimacy of applying given concepts to the established facts (Maxwell, 1992) or using correct operational measures for the concepts being studied (Yin, 1994). In this study, important constructs have been 'beneficial novelties', 'innovative behaviour', 'roles' (and their elements), 'innovation and development systems' and 'role structures'. All of these derive from theory rather than from emic perspectives. Identifying valid

concepts has been an iterative process between empirical evidence and theory (Dubois & Gadde, 2002). Some concepts used in the beginning of the study were rejected because they did not adequately explain or cover the empirical phenomena identified in the cases. The match between concepts was also carefully evaluated to enable an understanding of the different dimensions of the phenomenon.

The validity of two concepts deserves some attention. Firstly, the concept of role was used as a tool to understand and evaluate individuals' part in innovation and development activities. One can question whether role is the most fitting concept because it is often used to describe stable and functional expectations that remain somehow external to individuals occupying a role (see discussion in Mantere, 2005). However, role theories were most prominent for operationalising different tasks that individuals conducted and for understanding the dynamics between structural qualities (role expectations) and actions (role behaviour). However, the reader should keep in mind the way this concept was used: all behaviour related to innovation and development activities were discussed with role concepts, not only established expectations. Role identity was predominantly excluded from the analysis.

Based on in-depth coding and re-coding, the analysis showed strong evidence for the existence of task types, and such categories as expected, encouraged, role-making and role-breaking behaviour. However, these types could not be attached to all descriptions of individuals' roles, since some roles were only briefly mentioned by the interviewees. To make strict claims on each individual's roles would require a micro-level longitudinal study of roles. Because the focus of the study was on the collective level, the findings at the individual level were seen to be adequate for use as building blocks in forming the collective-level understanding.

Secondly, the validity of 'innovation and development system' and 'role structure' concepts is crucial for the study. These concepts were defined based on combining different theories to explain what was seen as important in the empirical data. The researcher's own judgment played an important role because previous theories did not provide advice on how to conduct a rigorous empirical analysis of social structure from the perspective of roles. In particular, identifying the boundaries between different innovation and development systems required numerous iterations between cases, as well as sharpening theoretical concepts during the analysis.

The validity of these concepts was checked through triangulation check, in which another researcher was given the concept and asked to determine whether it matched the empirical data and whether the data matched the account created in the study (see Appendix 4). Based on this check, the concept of a system was defined in more detail. Additionally, peer debriefing (Creswell & Miller, 2000)

was used in the sense that colleagues familiar with the studied organisations read through some of the case descriptions and commented on the findings.

Internal or causal validity concerns the validity of the relationship between concepts (Maxwell, 1992). One aspect of this validity is previously discussed, i.e., how the concepts used in the theoretical frame fit together. The second issue concerns the validity of the explanations provided in the study. Causal relationships were identified between structure types and individual and contextual factors. Two kinds of evidence were used: firstly, interviewees' own meaning given to certain actions (for example, descriptions of why certain individuals are involved in creating certain types of novelties) and, secondly, comparisons between situations in which different types of structures were identified. The validity of the former relates to interpretive validity, whereas evidence for the latter relationships was formed through methods such as making comparisons, clustering and pattern matching across role structures identified in different contexts (see Chapter 3.4.4.).

7.4.4 Generalisability

Generalisability refers to the extent to which results can be extended to other organisations, persons, times or settings. Maxwell (1992) discussed internal and external generalisability. *Internal generalizability* refers to generalising the findings within the community, group or institution studied to persons, events and settings that were not directly observed or interviewed (Maxwell, 1992). It is important to acknowledge that this is an issue in many interview studies. In the present study, the interview sample was also quite small, and interviewees may not have been able to describe their viewpoints fully during this short encounter. Internal generalizability was increased using purposeful/theoretical sampling in the form of in-depth interviews performed at all organisational levels and in different units. The sample could still be biased towards individuals who were active in innovation and development activities. Therefore, interviewees were also asked to describe the general atmosphere and attitudes towards these activities, as well as their colleagues' behaviour. However, an observation study or additional interviews could have increased the internal generalisability of the findings.

As to the findings, the descriptions of role elements and innovative behaviour were quite similar between informants and cases. Therefore, the identified role elements could probably be generalised to the studied organisational contexts. The five types of role structures were also identified in many contexts; hence, these types can quite credibly be generalised to the studied organisations. However, that this categorisation is exclusive cannot be argued because other innovation and development systems may have been identified if more individuals were interviewed. In addition, in some cases, the description of a

specific system relied on only one informant; therefore, the truthfulness of the account depends on his/her description.

External generalizability concerns generalising the findings to other organisations and collectivities. Because this study was qualitative and used a limited number of cases, no argument can be made that these results as such could be generalised outside the studied organisational contexts. However, these accounts may be used as examples of role structures likely found in similar organisational settings. The size, the organisational structure and the geographical location of the studied organisations were fairly similar; therefore, similar findings could likely be identified in such professional service firms. The description of the cases shows specific features of the studied organisations to help the reader evaluate external generalisability.

7.4.5 Reliability

Finally, *reliability* concerns the extent to which the findings would emerge if the study was repeated in *the same* context (Yin, 1994). Yin emphasised that reliability does not concern replicating the study in a fairly similar context because in a qualitative study, the specific nature of the context always influences the results. In addition, because each interview is different, the study cannot be repeated in an identical manner. To help readers evaluate reliability, efforts were made to describe the theoretical understanding, the research process and the results as deeply as possible. However, given the iterative nature of the process, including multiple experiments with the data before a suitable theoretical framework was formed, the description of the process provided in this report is streamlined to include only those steps that contributed to the creation of the final account.

7.4.6 Summary of the main limitations

As a summary, the main limitation concerns the nature of the qualitative data used in this study in relation to the research questions. The study draws predominantly on an interview sample, which causes some challenges. Firstly, because only a few organisational members were interviewed, the sample is subject to potential biases in terms of attitudes and perspectives, as well as the innovation and development activities identified. Secondly, the interview data have limitations concerning the discursive consciousness of interviewees, the truthfulness of interviewees and the interviewer's ability to handle the situation. As described in Chapters 3.3 and 3.4., these challenges were acknowledged in the research design and were handled using several tactics. Although these issues do not pose severe problems for the validity of the categories described in the

findings, internal generalizability is an issue. That no other types of innovation and development systems and role structures exist cannot be argued.

Secondly, certain aspects of the findings could be verified using a more intensive triangulation of the data. An observational study and a longitudinal research design would strengthen the validity of the findings (see, e.g., Leonard-Barton, 1990), particularly concerning the third research question: the flexibility of structures was operationalised to the extent that role structures are stable and enduring versus inclined to modifications made by organisational members. To evaluate this question, individual variations in roles were explored, and interviewees' stories about role-making and role-breaking behaviours were used to understand changes in roles and role structures.

A longitudinal study on the changes in role structures over time may support these findings. In addition, observational data may support an in-depth understanding of organisational activities. The use of interview data was justified by the fact that social structure consists of socially constructed rules and resources; hence, social structure can be studied by exploring interviewees' interpretations of the social world. However, observations of innovative behaviour could provide richness and strength to the findings.

7.5 Future perspectives and research areas

The study contributes primarily to organisational-level innovation studies. Suggestions for future research include two perspectives. Firstly, the framework developed in this study can be used in different contexts to explore modes of employee-driven innovation. Secondly, the framework and the findings can be verified and developed using different research perspectives and methods.

The framework developed in the study may be used to contribute to studies on employee-driven innovation (EDI). EDI is a relatively new discourse that emphasises employees' ability to explore new opportunities and to innovate based on competences created in their work (e.g., Kesting & Ulhøi, 2010; Høyrup, 2010). Although EDI can draw on various perspectives, including the studies of intrapreneurship, organisational creativity, innovative behaviour and process-level innovation studies, the exact forms of participation in different organisational contexts are not yet fully known.

Considering this knowledge gap, the broad lens used in this study may be applied to explore and define more deeply the phenomenon. The framework reveals the variety of novelties and diverse ways to participate at different organisational levels and may be used to enable insightful comparisons of EDI in different contexts. The framework may be used in studying various types of novelties, both informal and formal practices, and different organisational levels.

The findings of this study highlight the need to understand that the forms of participation differ depending on the contexts, even within a single organisation. Employees may be expected to participate intensively in some innovation activities, whereas in other, they are not expected to be involved at all. In addition, employees' roles differ as sometimes participation refers only to suggesting ideas, whereas in other cases employees create beneficial novelties without management being aware of these processes. These different modes are likely to require, for example, different abilities from employees and support from management. Future research is needed to describe the exact nature of these abilities and how to develop them.

The framework may be used to compare role structures between different organisation types. These comparisons could be deepened both among PSFs and between PSFs and other organisation types. Firstly, although similarities were identified between the case firms, paying more attention to the institutional contexts of PSFs may deepen the insights of the study. Second, the five types of role structures identified in this study may also exist in other firms. However, because the studied firms primarily rely on their ordinary employees in innovation and development activities, PSFs are likely at the forefront of employee-driven innovation. Innovation and development activities in PSFs are presumably conducted more autonomously than in other contexts given the autonomy of employees and the intangibility of many of the beneficial novelties. More formalised and controlled structures may be useful for firms with more standardised products/services and technologies. Further research is needed to understand the differences between contexts and to verify the extent to which the findings of this study are limited only to the PSF context.

The findings of the study can be understood as initial propositions of individual and collective-level elements of role structures that can be verified using different methods. The framework built in the study may be combined with a broader mix of methods and research perspectives. Even quantitative methods and survey methods, such as social network analysis, may be used to verify the findings using a larger sample of employees within an organisation. A longitudinal perspective and observation methods could provide in-depth insights into the dynamics and changes in role structures. A longitudinal study may be used at several levels of analysis to provide additional insights into specific issues.

Firstly, a longitudinal study may be used to understand changes in individual roles. The study suggests that the boundaries between expected and encouraged behaviour, as well as role-making and role-breaking behaviour, are blurred, and behaviour can gradually shift from role-making behaviour into expected behaviour. However, individual-level observations about how roles change over time could provide more insights into these dynamics. A similar perspective may be used at the level of role structures to understand how these structures evolve

over time and the factors that influence these changes. The findings suggest that some sort of collective job crafting (Wrzesniewski & Dutton, 2001) take place within these firms; however, an in-depth understanding of these processes requires a longitudinal perspective. A longitudinal study may also be used to add another level of analysis; that is, a study of individual innovation processes. Although interviewees were asked to describe exemplary processes, more detailed process-centric analysis could provide rich descriptions of the dynamics within – and between – innovation and development systems.

Finally, the study also provided some insights into how forms of organisational control in innovation and development activities may be conceptualised. However, these issues were only touched on in terms of autonomy of activities and individuals' ability to shape their roles and role structures. The study did not explore leadership practices related to different role structure types. Future studies concerning direct and indirect ways to enable and constrain behaviours are encouraged. Leadership styles and organisational control related to each type of role structure may be explored in-depth in light of the current discussions of control in PSFs (e.g., Courpasson, 2000; Kärreman & Alvesson, 2004; Robertson & Swan, 2004).

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Appendixes

Appendix 1. Interview guide

Below is an example of an interview guide used at CoCo. It shows exemplary interview questions: the exact form and sequence of questions was modified to fit with the interviewee's viewpoints and the interview situation. For example, at managerial levels the focus was typically on broad changes, whereas grass-root employees focused on the development of individual services and on changes they perceived in their own work environment. This example is tailored to interviews at unit level or below.

1. Services offered in the unit and the interviewee's work

- What kinds of services are offered in this unit?
- How long have you been at CoCo? How has your career evolved? What is your own professional background?
- What kinds of work tasks do you have?
- How is your work community (unit/group/…) organised? What kinds of people are employed? What kinds of roles do they have?
- What kinds of customer accounts are there in the unit? Long-term or one-off? Who is responsible for the accounts? Who interacts with the customers?
- What are typical customer projects like? How long are they? What kinds of phases do the projects have? Who are involved? Do you collaborate with external parties?

2. Development activities at CoCo

- What kinds of novelties/innovations have been created in the organisation?
  - *Additional questions concerning new services, improvements in services, improved work practices, etc. if necessary*
- How have you been involved in the development of these novelties?
- How did the ideas emerge in the above-mentioned examples?
- How do new ideas typically emerge? Who generates ideas?
  - Focused questions concerning services, tools, strategy, etc.
- What kinds of factors at CoCo enable idea generation?
- How do ideas proceed in the organisation? Who makes decisions? What influences the decision making practices?
- How did development processes proceed in the above-mentioned examples?
- Who is typically responsible for development activities in different kinds of processes? Who does what?
- What kinds of factors at CoCo enable or constrain these activities?

- How were the novelties implemented? How are they marketed?
- Who is responsible for implementing novelties in the organisation? What kinds of tasks are conducted?
- What kinds of factors at Coco enable and constrain implementation and utilisation of novelties?

3. Leadership in development activities

To the manager (of a team/unit/firm):

- How independent is your unit?
- How are the goals set? What kinds of goals derive from above? How do you participate in goal setting?
- How are your unit's business controlled?
- What kinds of development decisions are made in the unit? What kinds of decisions need to be presented to your boss etc?
- Do you feel you have enough autonomy in developing your business?
- How do you communicate your objectives to your subordinates? How do you ensure that the objectives are being followed?
- In what kinds of development activities are you involved/aware of in your unit? How?
- How do you guide development activities in your unit? What kinds of concrete actions you do?

To everyone:
Tactics to stimulate development activities
- Do you feel that you personally or the work community is encouraged to take an active role in development activities?
- What kinds of activities are expected or encouraged? (e.g. challenging the current situation, presenting new ideas, participating in development, learning new things, selling ideas to customers, etc)
- Who encourages you? In which kinds of situations? How?
- Do you encourage your subordinates? How? What do you do concretely? *(those in supervisory positions)*
- Do you feel you have an influence on your colleagues? What about partners?

Tactics to control development activities
- How do you know what kinds of ideas are beneficial for the firm?
- What do you know about your firm's strategy? How is strategy created in the organisation? How do you know about the strategy?
- Does the strategy guide development activities? If not, what guides?

- Do you feel that your boss or someone else aim at channelling idea generation in the work community? How?
- How are decisions about development activities made?
- How are development processes coordinated? Who controls the processes?
- How are implementation processes coordinated? Who controls these processes?

Finally:

- What do you feel are the most important challenges in your work community regarding development activities?

Appendix 2. Overview of the research process

YEAR	2005	2006	2007	2008	2009	2010	2011	2012
Literature studies	Defining the concepts and exploring empirical studies: (service) innovation, KIBS, innovativeness, creativity		innovative behaviour, organization studies	PSF theories organisation theories	Creativity vs. routines	Organisation theories, role theories, social system theories		
Data collection		C 1 C 2 C 3 C 4	C 5					
Data analysis		Preliminary analyses of the cases 1-5	analyses in cases 1-3	Analyses in cases 2, 3, 5	Analyses in cases 2, 5	Final analysis of cases 1-5 / Cross-case analysis / Role structures in innovation and development systems		
Main findings		types of innovation and development activities; Factors that enhance/constrain innovativeness; Innovation management mechanisms	- Innovative behaviour types - IB as expected, encouraged, non-expected behaviour	Differences between expectations and motivation of employees	Novelty vs. everyday work output in creative business			
Outputs		Reports for practitioners	Conference paper and an article (Tuominen & Toivonen 2007, 2011)	Conference paper (Tuominen 2008); Theoretical frame for the dissertation	Conference paper (Lempiälä & Tuominen 2009)		Formulating the contributions	

Note: work carried out part-time alongside other research projects except from a few periods with full funding

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Appendix 3: Example of the coding procedure

This appendix presents an example of how the data was coded and used in the analysis phases 1-3, based on analysis of one interview quotation. Firstly, Table 1 shows how individuals' roles were identified, categorised and summarised from interview transcripts in analysis phase 1 (data reduction). Table 2 shows the explanations of the codes. Secondly, Table 3 shows how the summaries were placed into position-ordered matrixes in analysis phase 2 (within-case analysis). Thirdly, Table 4 shows part of a system-specific memo that describes these and other roles related to a specific innovation and development system. The interviewee was a senior manager in AdviCo. In the quotation below, he discussed idea generation related to service development:

> *'Actually, we don't have any specific limitations like "you are an idea generator and you are not". It comes quite naturally. We have some people who are more active in idea generation and some who are less active; the latter may be better at other tasks. And I guess I participate very actively in discussions concerning new opportunities. And, of course, since I am a senior manager, I have responsibilities for launching certain new offerings that are developed in international markets to Finnish context. I need to evaluate how the service ideas could be applied in Finland, and whether we could develop something new for our customers here.' (Senior manager, AdviCo)*

This quotation includes a variety of aspects to consider, including descriptions of expectations, typical practices, and the interviewee's behaviour that contributes to service development activities. The quotation contains several aspects of roles: idea generation in general was encouraged in this work community, and in the interviewee's position, idea generation related to specific offerings was expected. The example also shows that it was difficult to make exact interpretations of roles if the quote was distinguished from its context; verification of the interpretation required this quote to be compared to other quotes in the interview and to other interviewees' viewpoints. Table 1 shows how this quotation was summarised and what kinds of codes were used. Table 2 provides explanations for the codes.

Table 1. Example of the coding procedure

Text, codes and summary	Explanation for coding
'Actually, we don't have any specific limitations like "you are an idea generator and you are not". It comes quite naturally. We have some people who are more active in idea generation and some who are less active; the latter may be better at other tasks.' ➔ EN * ID (= idea generation was encouraged) everyone has possibilities	This quote was used when interpreting other quotations of expected and encouraged behaviour in the case organisation. The quotation was contradictory to other interviewees' statements that senior managers need to be able to generate ideas. An interpretation made from other quotes was that ID is encouraged from everyone, but expected from senior managers.

for idea generation: no restrictions ➔ *This quotation was also used in supporting the following summary from another interview:* EX/EN * ID (=idea generation expected/encouraged) concerns autonomous action in exploring opportunities in marketplace and changes in legislature. Expectations increase with seniority, since competences and knowledge are required. Younger professionals encouraged.	Based on this quotation, it seemed that personal characteristics influenced these expectations, and no-one was forced to generate ideas.
'And I guess I participate very actively in discussions concerning new opportunities.' ➔ EX/EN * ID: participates in idea generation actively (considers idea generation to be encouraged behaviour; notes that other colleagues may be good at other tasks).	Describes interviewee's own behaviour and seem to illustrate the ability to modify own role. However, since ID was seen in other quotes as something expected from senior professionals, it was not certain whether ID was actually expected or encouraged. However, the interviewee could have been even more active than expected.
'And, of course, since I am a senior manager, I have responsibilities for launching certain new offerings that are developed in international markets to Finnish context. I need to evaluate how the service ideas could be applied in Finland, and whether we could develop something new for our customers here.' ➔ EX * ID&De&Ap&DM senior managers in principle responsible for launching new products to markets	These responsibilities were clearly articulated; hence, this is seen as expected behaviour. Since senior managers conducted these activities independently, all innovative behaviour types were assumed to be included. This interpretation was supported by other quotes from this interview and from other interviews, in which senior managers' responsibilities were discussed, as well as by descriptions of how new products were developed.

Table 2. Explanations for the codes

Role behaviour in relation to expectations	Task types included in a role
EX = Expected (position) ST = Expected (individual) EN = Encouraged ME = Role-making BE = Role-breaking	ID = Idea generation DE = Development AP = Application DM = Decision making

Next, position-ordered matrixes were created in within-case analysis (see Figure 9 in chapter 3.4.3), and the summaries of the coded quotations were placed on an 'analysis cells' that included all data concerning the roles of specific position-occupants in a specific domain. The analysis cell concerning senior managers' activities linked to the development of a service domain in unit A is shown in Table 3. The summaries that derived from Table 1 above are marked with grey.

Table 3. Example of an analysis cell

Summaries of data concerning expectations/behaviour of senior professionals in the service domain in unit A in AdviCo	
Leaders' actions and control mechanisms that aim to influence the position-occupants' innovative behaviour (STI = stimulation of behaviour, CHA = channelling of behaviour)	
Manage-ment's / supervisor's mentions	CHA * ID&DE: unit manager defines the unit's vision and participates in goal setting related to the service areas: some areas more independent than others. STI * De: allocates development time to some team leaders (e.g., 30%). STI * ID&De: more juniors recruited to conduct routine tasks in order to allocate more development time to senior professionals. STI * ID: innovative persons recruited to develop new services. STI * ID: unit-specific and group-specific idea generation meetings.
Position-occupant's mentions	STI * ID: unit manager sets sales goals that stimulate/force idea generation. CHA * ID: encouragement to develop large projects. STI * ID&DE: goals for growth stimulate collaboration between units: novel service ideas explored. CHA * ID: does not feel goals related to service substance derive from above (the unit level): autonomy of goal setting.
Expectations towards innovative behaviour of position-occupants *See Table 2 above for explanation of the codes.*	
Manage-ment's/ supervisor's mentions	ST * ID&DE: experienced new recruits expected to develop new, profitable services. EX/ST * ID&De&DM: independence of team leaders depend on personality type: in other teams, ID&DM done by unit manager, team leader expected to develop and apply the novelty. EX * ID&De&Ap: innovativeness expected from almost everyone, earlier only small group was active. ST * ID&Dev&appl: service development tasks delegated to senior professionals EX * ID participation in unit-wide idea sharing meetings.
Position-occupants' mentions	EX * ID&De&Ap&DM: senior managers are, in principle, responsible for launching new products to markets. ST: interviewee was responsible for guiding juniors in service development. EX * DM: independent decision making possible at managerial levels. EX/EN * ID&DE&Ap: service development within teams. EX/EN * ID: autonomous action in exploring opportunities in marketplace and changes in legislature. Expectation for idea generation increases with seniority, since competences and knowledge required. Younger professionals are encouraged. EX * ID: expectation is to bring money to the firm: requires exploring new service opportunities. EX/EN * ID: open-mindedness and idea generation across unit boundaries. EN * ID: everyone has possibilities for idea generation: no restrictions.
Sub-ordinates' mentions	EX * DM: partners responsible for decision making related to development projects that require resources. EX * ID: participation in knowledge-sharing meetings. ST * ID: Brainstorming sessions with international counterparts. EN * ID&De: everyone encouraged to challenge status quo and to develop services: however, this requires understanding of current routines and legal procedures. EX * ID&De: expectations increase at higher positions.

Behaviour of position-occupants	
Typical behaviour in the position (everyone's mentions)	EN * ID: idea generation enhanced by writing publications and analysing the impact of different solutions, spontaneous idea generation during lunch meetings, autonomous scanning of opportunities in the environment ('no-one needs to be forced to do that'). EN * ID&Dev&App: proactive search for new customer problems, suggestion of ideas, experimentations with a single or a few customer cases. Courses and info-sessions to attract customers.
Mention of own behaviour	EX/EN * ID: participates in idea generation actively (considers ID to be encouraged behaviour; notes that other colleagues may be better at other tasks). Has developed a new service concept for specific customer types.

Next, different innovation and development systems were identified and described by comparing the analysis cells within a case organisation and by using other data displays. Table 4 below shows an excerpt from one of the system-specific memos in which the above-described data is used. This example concerns a system labelled as the development of individual services (within a team). The above-quoted senior professional was one of several individuals involved in this system.

Table 4. An excerpt from a system-specific memo

Development of individual services : a memo of an innovation and development system	
Goals in innovation and development activities	In this firm, innovation and development activities are intertwined. All activities pursue growth and independence of the services in question through service development. At the team level, the goal is to grow through the creation of new services. Examples of novelties are the development of proactive planning services (instead of problem-solving services) and new solutions to customer problems that emerge due to changes in legislation.
Goal setting	General goals (growth and independence) are set at the organisational level, but team-specific goals are set quite autonomously in teams. The managers' skills and motivation impact the extent to which the unit manager and the service area manager participate in goal setting at the team level.
Idea generation	The team leader and other senior professionals are responsible for developing the service area (goal setting and idea generation). Juniors are encouraged.
Development	Within the team, senior members (and juniors) may all be involved. If separate projects are established (when considerable resources are needed), decision making is done at the partner level. In other cases, development work is conducted in those customer assignments where opportunities were identified. In some cases, development groups are established for development work.
Application	Within teams in relevant customer projects.
Decision making	Team leader makes decisions concerning small assignments. If extra resources are needed, partners are involved. (In reality, however, decisions are prepared at the team level, since the members of the team have the best expertise to evaluate ideas – partners make formal decisions).

Compatibility between expectations and behaviour	No conflicts identified.
Compatibility with external expectations	The only peculiar feature is that, at every level, the interviewees consider themselves to be the main idea generators; perhaps interviewees discussed different kinds of ideas.
Management/ autonomy of the system	The autonomy of action depends on a team. The interviewed teams were very independent, but interviewees mentioned that the unit manager is more involved in other teams. All teams had quite similar practices in innovation and development processes.

Appendix 4. Triangulation checks

Two small triangulation checks were done in the data analysis process, as described in Chapter 3. The processes and the findings concerning the triangulation checks are discussed here.

1) Triangulation check related to analysis tasks 2 and 3 (categories of roles)

In this triangulation check, a second researcher (referred to here as Coder 1) was asked to code two interviews in order to verify that the author did not 'make up' the categories identified in the data.

- Coder 1 was asked to read through a summary of the research approach and the research questions. She was also given a memo of the case firm (ArcCo) to help her understand the units and the services that the interviewees discussed. She then received the categories of roles and the corresponding codes, and two interviews. These materials were discussed in a meeting prior to the exercise to ensure that Coder 1 understood the codes and was familiar with the case.
- Coder 1 was asked to code all mentions about innovation and development activities in the interviews as follows:
    - She was asked to describe the development domain that was discussed and the position-occupant/individual whose activities were discussed.
    - If role expectations/behaviours were identified, she was asked to code the task element(s) included (idea generation, development, application, decision making).
    - She was also asked to code whether the expectation/behaviour mentioned by the interviewee was expected (related to position), encouraged (related to position), expected (related to individual), or whether a behaviour was considered as role-making or role-breaking behaviour.
    - Coder 1 was also asked to mention if there were activities that did not fit into these categories.
- Coder 1 sent the results of her exercise to the author of the dissertation and the findings were discussed in a meeting.

The exercise showed that the two coders (Coder 1 and the author) agreed to a large extent, which means that the analysis can be considered to be quite reliable. The differences were as follows:

- *Coder 1 had coded 31 quotations from the interviews with the above-mentioned codes, whereas the author of the dissertation had coded 34*

quotations. Twenty-five of these coded quotations were the same for both coders. Differences between the quotations chosen were caused by two main reasons:

- o The coders disagreed about whether a certain creative process that an interviewee mentioned concerned innovation and development activities or business as usual.
- o The coders disagreed about whether role categories could be reliably attached to the quotation (both coders had coded some quotations that the other had not).

These differences were not considered to be very alarming, since the coders assumed that greater agreement between the coders would have been reached if both had been equally informed about the firm, especially the names of the services, the people, and the development activities going on in the firm.

- *The codes matched in 22 out of the 25 quotations that were chosen by both coders*. Only slight differences were recognised among the matching quotations. These differences concerned the exactness of coding, if the same quotation concerned the roles of many different actors. Disagreements in the three quotations concerned the following:
  - o Whether a task was included in a role (that is, whether a role included autonomous decision making).
  - o The actor whose activities were being discussed (this concerned a case in which an interviewee discussed typical development practices, using the term 'we').
  - o Whether expectations were broken (in this case, a unit manager said that there was a lack of ideas from the unit members; one coder understood idea generation as encouraged behaviour, whereas the other understood it as expected behaviour).

These differences were also partly caused by differences in the amount of data that the coders had.

- *Coder 1 found no activities that would have not fitted into these categories.*
  - o She proposed a more detailed categorisation based on whether an expectation was fulfilled well, only partially, or not at all. The categorisation was not used here, since the data was not detailed enough. However, this point was considered in the analysis.

This exercise confirmed the usefulness of the identified categories and suggested that the analysis can be considered as quite reliable. The disagreements mainly concerned whether the categories could be attached to certain actors or activities mentioned in the interviews. It seemed that background information, such as other interviews and secondary data, played a major role in the coding process, as

described in Chapter 3. Coder 1 formed an understanding of the role categories in a certain quotation with the help of the whole interview text. The author of the dissertation was also able to use other interviews and secondary data for this task. Coder 1 also mentioned that, in some cases, it was difficult to identify whether an interviewee had discussed expectations or actualised behaviour, and in other cases it was difficult to identify whether an expectation was fulfilled. These notions led the author to consider carefully what can be argued based on the data and what cannot.

2) Triangulation check related to analysis task 3 (identification of innovation and development systems)

A fellow researcher (herein named as Coder 2) was asked to identify innovation and development systems from data to check that the concept was usable and that the author had not made up the identified systems. This task was challenging, since the author of the dissertation had identified the innovation and development systems based on the whole interview data, and on the outputs of the earlier analysis steps (for example, the position-ordered matrix). Due to limitations in time, Coder 2 was only given three interviews. However, he was somewhat familiar with the case organisation (ArcCo), which meant he already had some background information about the case. He was given the following background materials:

- The research questions and summary of the research approach
- The codes used in categorising roles
- A description of the principles used to identify different systems in the data
- A memo of the case firm

Coder 2 had two tasks. The tasks were discussed through before the exercise and the results were again discussed through after the exercise. Both tasks are discussed below in turn.

The first task concerned the actual analysis. Coder 2 was given a template for system-specific memos (see Appendix 3, Table 4, for an example) and three interviews and was asked to describe the system types that he identified in the data using the memo template. Coder 2 came up with *two alternative ways of classifying the identified innovation and development activities into systems.* In the first, he used the novelty type as the primary classification principle and came up with eight system types. However, he recognised that the substance overrode development practices in this classification, and sketched another classification, in which six system types were identified. He suggested that the second classification was grounded in the data more deeply than the first one. Since this resembled the analysis process used by the author, the findings concerning the latter categorisation are discussed.

- o In this categorisation, four actualised system types were identified. Coder 2 also came up with two other system types that the interviewees mentioned but that Coder 2 assumed did not necessarily exist in reality (that is, some interviewees assumed that certain activities take place, even though no-one really seemed to fulfil these expectations).
- o Of the four systems, *two systems seemed to match closely the system types identified by the author of the dissertation:* the boundaries of the system, their goals, and the activities identified in the system were similar. In this dissertation, the systems are referred to as 'collective service development' and 'centralised service development'. The author and Coder 2 also agreed on the dispersion of roles within these systems, apart from one disagreement concerning the level of decision making in the other system.
- o *The two other system types were identified by both coders in some format, but* although the coders agreed on the identified roles and the breadth of these systems, *the activities mentioned by the interviewees were divided into these two systems in different ways*. The systems discussed here were 'the development of business models' and the two systems concerning IT development. Differences in categorisations seemed to be caused by *different principles used in the categorisation:* Coder 2 had emphasised the impact of the novelty on the organisation, while the author had emphasised the involvement of the IT manager.

In the second task, Coder 2 was asked to read through the preliminary version of the case description and check whether the case description was consistent with the interviews. He *felt that the description was consistent and agreed on the system types described. However, the case description was sharpened* based on Coder 2's comments concerning the nature of some systems and the linkages between the novelties.

This triangulation check pointed out two things that are important to consider when evaluating reliability. Firstly, it showed that the amount of data had an impact on the findings. It has been argued that reliability can be best evaluated when the coders have the same data and use same methods (Yin, 1994). In this check, Coder 2 had to form an understanding of the systems based on only three interviews. The author of the dissertation was able to use other interviews as well (in total 13 interviews), which provided additional perspectives to the nature of the novelties, the individuals involved, and the dispersion of roles between the individuals. *As the coders had different amounts of data to analyse, this triangulation check was challenging to plan and evaluate.* It is likely, but not certain, that giving Coder 2 additional interviews would have increased inter-coder agreement.

However, this exercise did show that *the analysis is very theory-laden* (that is, an innovation and development system was a theoretical concept that was used in

interpreting the data). In addition to differences in the available data, *the loose definition of the concept of a system for Coder 2 was probably somewhat responsible for the disagreement*. This was manifested, for example, in Coder 2's ability to come up with two alternative categories of innovation and development systems from the same data, neither of which exactly matched the author's categorisation. The differences between the coders' results also highlight the complexity of empirical data: each system type included a variety of novelties and development practices, so – like all models – bundling these activities together based on their differences and similarities provides a simplified picture of reality. The organisation-wide innovation and development activities in ArcCo were quite similar and closely interlinked, as the top managers' ideas were implemented in almost all of them. Since there was not much information available on the actors and roles related to some of the novelties mentioned by the interviewees, there were possibilities for several interpretations. Therefore, it was noted that the researcher's judgement plays an important role in the analysis process, and the concepts and the principles used by the author in identifying the systems were clarified and described in more detail in Chapters 2 and 3.

Appendix 5. Comparison of roles at different organisational levels

To support comparison of roles between positions discussed in Chapter 6.1.1., this appendix summarises the typical roles identified at each organisational level case-by-case in the following tables.

Summaries of top management's roles in innovation and development activities

Firm	Summary of the roles	Additional remarks
ArcCo	The top managers acted as the primus motors in organisation-wide activities: goal setting, idea generation, decision making, and coordination of development activities. Focused especially in service domain. Decision making and coordination in IT domains. Tried to give more autonomy to units, but were still involved in many processes. Were involved in some customer-specific novelties because of personal customer contacts.	*Top managers were the owners and establishers of the firm; were entrepreneurial and very innovative in the professional and business domain – the firm has been growing, so the managers aimed to involve others in innovation activities.*
MarCo	Set goals in many innovation and development activities and made decisions when money was needed. CEO a goal-setter and idea generator in strategic-level service development. Initiator, goal-setter and main developer in rationalising the organisation. Participated in the project-level novel activities when needed/possible, but the CEO was not an expert in the professional domain. Goal setting related to the improvement of advertising skills.	*A challenging change situation was going on at the time of the interviews. The CEO was hired from outside and was expert in marketing. Aimed to enhance efficiency based on earlier experiences outside the industry. The other interviewees would have liked top management to pay greater attention to the development of the service domain.*
AdviCo	Goal setting and decision making in large development issues.	*The CEO, who was not interviewed, had a background in accountancy. Unit managers (who were also partners) were active in the interviewed advisory units. International collaboration seemed to be more important than top management's control.*
EngiCo	Idea generation, decision making and coordination in strategic projects (decisions about corporate projects made at corporate level). Decision making in organisation-wide structural development. Goal setting, decision making and idea generation in organisation-wide tools and practices domains. Not greatly involved in unit-specific development efforts: depended on expertise, though.	*Only the vice-CEO was interviewed. Top management's role between the firm and the corporate management: important linkage. Strict monetary control from corporation set limits on the CEO's activities.*
CoCo	Goal setting, idea generation, decision making, and coordination in strategy work and in the development of the organisational structure. Decision making in organisation-wide IT/quality development and in large development projects. Involved in substance development only in the traditional service area.	*Note differences between the CEO's. The old CEO employed a laissez-faire style of leadership, but the role was now changing. The old CEO's professional expertise was in the traditional domain, where few possibilities existed to develop new services; new units were driven by innovative unit managers.*

Summaries of the roles linked to managerial positions in support functions

Firm	Summary of the roles	Additional remarks
ArcCo	IT manager: idea generation, coordination of the development and application in IT development, decision making regarding small novelties, launch. HR manager: role not realised yet.	*IT manager's role depended on novelty type: if architectural competences were needed in tool development, development was coordinated by architects or by the top management.*
MarCo	Managers participated in strategic-level activities (both in the field of service development and rationalisation): goal setting, idea generation, decision making, and coordination of development. Strategic manager involved in the professional domain (new business activities and coordination tasks related to improvement of skills). CFO coordinated the development of managerial tools.	
AdviCo	*Roles not mentioned in the interviews*	*Perhaps international collaboration in IT development instead of own IT manager.*
EngiCo	IT and quality manager: idea generation/collection, development, coordination of development, participation in decision making, and launch related to IT and quality development.	*Role of the manager focused on engineering design units.*
CoCo	IT and quality manager: goal setting, idea generation/collection, development. coordination of development, participation in decision making, and launch related to IT and quality development.	*Role of the manager focused on traditional units. Considered herself as too autonomous: wanted the CEO to set goals and to make decisions.*

Summaries of the unit managers' typical roles in innovation and development activities

Firm	Summary of the roles	Additional remarks
ArcCo	Participated in organisation-wide development: participated in idea generation and conducted specified tasks. Were expected to launch novelties in their own units. Were encouraged to develop ideas regarding IT development. Were important drivers in unit-wide service development. Participated in the development of some project-specific novelties.	*Positions were quite new; were expected to develop strategic skills. The role allocation between the top management and the unit managers depended on their own skills and personality.* *Roles in unit-wide development depended on the nature of the service and the skills and motivation of the unit manager.*
MarCo	Were expected to participate in organisation-wide development efforts (concerning both services and tools/practices) by generating ideas and conducting development work. Coordinated implementation in their units. Were encouraged to suggest new business ideas/customer-specific ideas. Some of them were very active in developing the unit.	*The CEO acted as one unit manager. There was no clear picture of the role expectations due to the newness of the structure and new recruits. Roles seemed to depend partly on individual skills and motivation.*

AdviCo	Expected to set goals for the unit's development based on the firm's general goals. In unit-wide development, the unit manager was the main goal-setter, idea generator and developer. Participated in other service-related developments only if development work was carried on in their own professional area/depending on activeness of service area leader. Did not coordinate all service or tool development within unit.	*In many cases, the unit managers relied on expertise of the leaders of service areas. Some understood themselves as the main idea generators of the unit, although individuals in lower positions did not recognise this role; most likely they were active in the development of different service areas and developed novelties with different scope.*
EngiCo	Participated in the strategic development activities as a part of the top management team; goal setting, idea generation, decision making, and coordination of the implementation of strategic projects in units. Unit managers were the main drivers of the development of organisational structure (expected/role-making behaviour). They participated in goal setting, idea generation and decision making related to IT/quality development, as well. Acted in different roles in service development based on their own contacts and ideas (in consultancy unit). In engineering design units, they aimed to coordinate all development activities excluding project-specific developments.	*Unit managers were the representatives of the firm in relation to the unit. Consultancy department was interesting; although the unit manager was very entrepreneurial, he gave autonomy to the teams. The unit managers felt they were restricted in terms of the lack of development resources. They had to bear the risks themselves.*
CoCo	Participated in recent strategy work as idea generators and developers, and coordinated the development activities within units. Participated as implementers in the development of organisational structure. New units were established through role-making behaviours of external persons. Were the main drivers in many unit-wide development efforts (goal setting, idea generation, decision making, coordination). Role in service development varied between units. Coordinated some IT/quality developments.	*Seemed to be very independent in developing their units. Wanted to focus on the unit's development instead of strategic development. New service areas more independent than the old ones due to the CEO's experience in the old area.*

Summaries of the team leaders' typical roles in innovation and development activities

Firm	description	remarks
ArcCo	The position did not exist	
MarCo	<u>Project directors:</u> Were encouraged to suggest ideas related to service strategy, had the main responsibility of new business activities (goal setting, decision making, idea generation – especially related to their existing customers). Developed customer-specific novelties and work practices (goal setting, decision making, idea generation), participated in tool development, were encouraged to suggest rationalisation ideas, and expected to develop and apply novelties.	*Project directors were involved in almost everything. Were responsible for specific long-term customer accounts so were therefore important. Attitudes towards rationalisation were diverse but they were expected to implement rationalisation in their own teams.*
AdviCo	<u>Service area leaders:</u> participated in unit-wide idea generation and development; were quite independent in developing their own service areas (goal setting, idea generation, decision making, development); participated in knowledge improvement issues; not necessarily involved in developments within individual services. <u>Team leaders:</u> depending on seniority, had similar responsibilities to service area leaders. Participated in the development of the unit and service areas. Were expected to participate in knowledge-sharing. Were expected to develop individual services quite independently (with the team). Expected to drive and coordinate the development of service-specific tools.	*Service areas/teams very independent, if the leader was a partner. The professional hierarchy (that is, seniority) was more important than the managerial hierarchy. Due to seniority, team leaders were involved in many activities. Autonomy depended on their expertise vis-a-vis the unit manager's expertise.*
EngiCo	<u>Team leaders:</u> Participated in strategic projects through conducting specific tasks in the development and application of novelties. Were expected to implement the change in the organisational structure (by accepting their new positions). Were encouraged to generate ideas related to tool & quality development; some specific positions were established for team leaders. Some of them engaged in role-making related to autonomous tool development and NSD. In the consultancy unit, team leaders were important for goal setting, decision making, idea generation, etc. Goal setting and decision making related to engineering design solutions.	*Similarities with project managers and professionals, but with greater power to establish new role structures in their own teams. In some units they have a lot of autonomy, since they are experienced members of the firm.*
CoCo	<u>Leaders of local teams:</u> Some local units were very autonomous in their development of services: autonomous goal setting, idea generation, service development and application. Decision making in radical novelties done by the CEO. In other respects, roles similar to the roles of project managers.	*No interviews at this level*

Summaries of the project managers' typical roles in innovation and development activities

Firm	Description	Remarks
ArcCo	A few individuals were expected to conduct development tasks related to organisation-wide novelties; they sometimes suggested ideas (role-making) and were expected to apply novelties. Encouraged to present ideas related to tools. Some of them carried out specific development tasks, and everyone was expected to apply novelties. Roles in service development depended on the unit; some were involved in all activities (collective structures), while others conducted development work in customer projects and suggested ideas through role-creation (centralised structures). Conducted the development of architectural skills and project-specific novelties independently.	*Similar to the roles of architects, although perhaps with greater emphasis on the development of project-specific work practices. Not expected to generate strategic ideas due to limited viewpoints and typically minor interest in 'business' issues. Some felt suffocated and some created their own roles. Roles focused on project-specific novelties and work practices: they were easy to implement due to autonomy.*
MarCo	Expected to apply strategic service ideas. Encouraged to present new business ideas and expected to develop and apply them in specific projects. Encouraged to present and develop work practices. Expected to set goals, generate and develop ideas related to customer-specific novelties. Expected to apply rationalisation-novelties.	*Project managers handled practical and operational issues – they did not have much power. Project managers were not interviewed, data suggests that their roles are similar to those of other project members. More emphasis on project-specific work practices.*
AdviCo	Expectations depended on seniority: seniors were (more or less) expected to participate in unit-wide development activities (participation in idea generation and/or carrying out specific tasks). Expected to participate in developing the service area. Expected to generate ideas, make decisions and develop individual services. Expected to participate in knowledge-sharing and in tool development.	*No specific roles attached to project manager position – roles depended on seniority and experience. Typically, participation in development was an expectation at managerial level; however, individuals could also do other things that benefit the firm as a whole (such as marketing).*
EngiCo	Some were expected to carry out specific tasks related to strategic projects. Some teams were active in strategic development themselves (role-making). Expected to apply new organisational structures, encouraged to generate IT-related ideas, and to conduct specific tasks and apply novelties. Some were expected to participate in unit/team-specific tool development (encouraged to generate ideas, conduct specific tasks and apply novelties). In the consultancy unit, they were expected to develop services in coordinated/collective manner (goal setting, decision making, idea generation, development). In engineering design units, they were expected to develop individual solutions independently (however, this was not greatly encouraged due to deadlines).	*Expectations related to service development were different in different units (consultancy vs. engineering design), based on the nature of the service.*
CoCo	Expected to carry out specific tasks related to the strategic project (including idea generation and development). Expected to act according to the new organisational structure. Encouraged to	*Roles quite similar to those of professionals. Although many expectations were identified, the roles were rarely realised in the traditional*

| | generate ideas related to IT and quality, conduct specific tasks, and apply new tools and practices. Encouraged to generate ideas related to unit-specific strategy (coordinated by unit manager), conduct specific tasks and apply novelties. Expected to help develop the unit's structure. In some units, expected to participate in developing unit-specific tools. Encouraged to develop new services, especially in the new units, and to carry out independently customer-specific novelties in others. | *unit due to limited development possibilities and resources.* |

Summaries of the professionals' typical roles in innovation and development activities

Firm	Summary of the roles	Additional remarks
ArcCo	Some conducted specific development tasks related to organisation-wide novelties and were required to apply the novelties. Some suggested strategic ideas (role-making). All were encouraged to present ideas related to tools and practices, some conducted specific development tasks. All were expected to use new tools/practices. In centralised service development, were expected to implement and develop ideas in customer projects, some individuals suggested ideas (role-making?). In collective service development, participated in every activity. Conducted development of architectural skills and project-specific novelties independently.	*Not expected to generate strategic ideas; limited viewpoints on organisation-wide issues. Some felt suffocated, some created their own roles.*
MarCo	Were expected to apply strategic development ideas; some presented ideas as well (role-making). Expected to apply rationalisation-novelties. Encouraged to present new business ideas and expected to develop and apply them in specific projects. Encouraged to present and develop ideas related to project's work practices. Expected to set goals, and generate and develop novel ideas related to customer work. Encouraged to develop their own expertise and to utilise new creative tools. One new employee engaged in role-making in the development of tools.	*Role expectations related to organisation-wide issues were not very clear due to changes: individuals interpreted them in different ways. Attitudes towards rationalisation were diverse. Creative people's development efforts focused on novel advertising ideas related to new business or existing customers.*
AdviCo	Participation in development was encouraged or expected depending on seniority: 'juniors' were encouraged to participate in idea generation and development of service areas and individual services, and were expected to participate in knowledge-sharing (specific tasks), expected to participate in tool development (idea generation, development, application). (*See senior professionals in the 'project managers' table.*)	*Service development was seen to require expertise. Juniors were expected to develop their own skills to be able to participate in service development later on. Participation in tool development was considered easier; in addition, juniors had the latest theoretical knowledge.*

EngiCo	Some individuals were expected to conduct specific tasks related to strategic projects. Expected to act according to new organisational structure. Encouraged to generate ideas related to IT/quality, conduct specific tasks and apply novelties. In autonomous development of tools, some individuals were encouraged to generate ideas, conduct specific tasks and apply novelties. In consultancy unit, expected to develop services (goal setting, decision making, idea generation, development). In engineering design units, expected/encouraged to develop individual solutions independently (in reality, however, not greatly encouraged due to time limitations).	*Similar to project managers' roles. Expectations related to service development different in different units (consultancy vs. design), based on the nature of the service.*
CoCo	Some individuals were expected to carry out specific tasks related to strategic project (idea generation and development). Expected to act according to the new organisational structure. Encouraged to generate ideas related to IT/quality, carry out specific tasks, and apply novelties. Encouraged to generate ideas related to unit-wide development (coordinated by unit managers) and conduct specific tasks and apply novelties. Expected to help develop the unit's structure. Expected to participate in developing unit-specific tools (in some units). Encouraged to develop new services especially in the new units. Expected to develop customer-specific novelties in other units.	*Similar to project managers' roles.*

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