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## **EXPERTISE AS BUSINESS**

**Long-term development and future prospects  
of knowledge-intensive business services (KIBS)**

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## **ABSTRACT**

Knowledge-intensive business services (KIBS) are expert companies that provide services to other companies and organisations. IT services, R&D services, technical consultancy, legal, financial and management consultancy, and marketing communications are typical KIBS industries. KIBS have aroused broad interest, several studies having indicated that they are active innovators, as well as facilitators and carriers of innovations of other companies. A futures perspective is essential from the viewpoint of innovation, and the study in hand intends to link this perspective to KIBS research. The study applies the so-called foresight approach, which, instead of predicting, focuses on creating views of alternative futures. In this study, the significance of historical analysis as a basis for foresight is stressed: the study starts with an examination of the long-term development of KIBS.

The study has mapped the future of KIBS both generally and particularly from the innovation perspective. The general examination consists of analysis of driving forces, strong prospective trends and weak signals. Driving forces refer to those phenomena at the level of the entire economy that constitute the framework for the future of KIBS. Strong prospective trends and weak signals outline the internal development of KIBS: the main lines of development and unexpected outturns. In the analysis of innovation activities, promising new innovation opportunities, the generality of innovation activities, and new spheres of skills were explored. Both literature and empirical material were used as information sources; the empirical material was collected in the Finnish KIBS sector through face-to-face interviews.

The main trends in the KIBS sector according to this study can be summarised as follows: The long-established growth trend of KIBS can be expected to continue. A central reason for growing service demand is the versatile and up-to-date expertise of KIBS, which derives from abundant client contact. Clients' purchasing know-how is, however, decisive for the success of the service. Besides the quantitative growth, the role of KIBS can be anticipated to strengthen as their services link ever more tightly to clients' strategies. The service content is also changing in KIBS: client-specific know-how becomes stressed and the service content broadens to include packages and comprehensive solutions. The way of providing services is more and more often consultative. This induces KIBS from other sectors to penetrate the field of management consultancy. Convergence among KIBS - as well as between KIBS and neighbouring sectors - is progressing in many other ways, too; the development of ICTs is an important factor accelerating this development. Along with the emergence of big multisectoral KIBS, increasing concentration in the sector can be found. The significance of internationalisation is growing and the forms of international activities are diversifying. As regards KIBS' innovation activities, an important finding was that promising fields for innovation also exist in the non-technological KIBS, which earlier have only been studied to a small extent. In the area of skills, KIBS face a challenge to reconcile very different, partly opposite, requirements, e.g. combining expertise and entrepreneurship.

Keywords: knowledge-intensive business services (KIBS), the role of services in innovation, knowledge economy, foresight, trend analysis

## **FOREWORD AND ACKNOWLEDGEMENTS**

This study originated in a practical context. The Employment and Economic Development Centre for Uusimaa - which together with its predecessor the Labour District for Uusimaa is the organisation where I have worked as a researcher most of my career - started industry-based foresight activities in 1998. The first industry selected as the target of anticipatory study was business services. There were two reasons for this solution. Firstly, in Finland business services are concentrated in the operational area of the Centre, which covers the Helsinki metropolitan region and its surroundings. Secondly, even though the rapid growth of business services had continuously been reported both in national and regional surveys since the 1980s, the development of the sector had not been profoundly analysed in Finland.

It fell to my lot to take the responsibility for the foresight activities in the EEDC for Uusimaa and particularly for the study of business services. Soon I found that both the foresight methodology and the topic of business services - more exactly the topic of KIBS - were targets of growing interest and lively discussion internationally. The literature which I went through in preparation for the interviews of the study was very inspiring. During my career I have had the opportunity to approach issues of industrial and occupational change, issues of skills development as well as issues of forecasting and planning from many different angles. Research and discussions starting from foresight thinking as well as research and discussions in the KIBS framework provided a refreshing - and at the same time incisive - new standpoint. Thus my work divided into two parts: practically oriented anticipatory study trying to answer the needs of my organisation, and more theoretically oriented research which became my personal academic effort.

During the years which have passed since the beginning of this research, the awareness of the significance of KIBS has considerably grown in Finland. There have been other studies besides my own, and policy measures have been taken to develop the sector. KIBS nowadays occupy an important position in the technology strategy of National Technology Agency Tekes. Together with the Ministry of Trade and Industry Tekes has actively participated in a policy study on knowledge-intensive services organised by the OECD. KIBS are also included in the Sectoral Service of the Ministry of Trade and Industry, through which the development of key Finnish industries are continuously monitored and surveyed. At the regional level, Employment and Economic Development Centres in Uusimaa and in some other regions have applied the results of KIBS studies in their activities linked with business advice and further training of the labour force. In Uusimaa, more systematic and detailed means for improving the know-how related to buying expert services are being planned. This development work, in which regional actors cooperate, also includes safeguarding the supply of KIBS, i.e. their general availability, diversity and quality. I hope that my thesis will contribute some ideas for these practical activities besides providing material for further discussion among researchers.

I want to thank my supervisor Eero Eloranta and my instructor Osmo Kuusi for the guidance and good advice I have received from them. I also thank my reviewers

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In this study I have used the results of many researchers in the KIBS field. Besides the literature, I have had the opportunity to participate in several seminars where the researchers themselves have presented their ideas and findings. Especially the thoughts of Faiz Gallouj, Jeremy Howells, Ian Miles, Joanne Roberts and Jon Sundbo have influenced my work in an important way. On the other hand, I acknowledge the assistance of practitioners in the Finnish KIBS field: during the work I interviewed nearly one hundred representatives of enterprises and professional associations. I extend my warmest thanks to all the interviewees for the time and interest they devoted to my study despite being busy with their own work.

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Helsinki, September 2004

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## **PART I INTRODUCTION**

### **1 INTRODUCTION: THE NEED FOR FORESIGHT IN THE FIELD OF KNOWLEDGE-INTENSIVE BUSINESS SERVICES (KIBS)**

The significance of innovation activities for economic growth has become more and more pronounced during the past few decades. Innovativeness increases competitiveness, and it has been argued that growth strategy based on innovation makes it possible to foster employment and welfare on a larger scale. Besides macroeconomic measures aiming to increase demand, actions supporting innovations have therefore been increasingly emphasised. At the same time, the conception of the nature of innovation activities has changed: the focus of attention is no more on radical inventions only, but innovations are understood to refer to the creative side of economic development as a whole. Knowledge is seen to be the key resource in modern economy, and even more important is the capability to produce new knowledge, i.e. learning, which is closely linked to innovation. These ideas are crystallised in the concepts of "knowledge economy" and "learning economy". (Boden and Miles 2000, 259; Lundvall 1999a, 19-21 and 30-31; Schienstock 1999, 14 and 17).

The service sectors have for long occupied a secondary position in innovation policy compared to the manufacturing sectors. Traditionally they have mainly been examined as users of innovations produced in technology-based sectors, not as sources of innovations. Along with the development of innovation research, this way of thinking has proved far too simple. It has been shown that many significant service sectors are highly innovative. (Howells 2000, 6; Metcalfe and Miles 2000, 2-3) In addition, a more detailed analysis of innovation processes has revealed that these processes invariably include many kinds of service functions. It has been considered important to study both "innovation in services" and "services in innovation". (Hauknes 1996 and 1998). To be successful, an innovation process requires the bringing together of various actors and different kinds of information sources. Innovation services that themselves act as knowledge sources and also coordinate knowledge flows and facilitate the interaction between different stakeholders form an increasingly important part of an innovation system. The need to study the emerging economy of innovation services as a subsystem of a service economy has been stressed. (Hales 2001, 1 and 66).

When studying services related to innovation activities, the main focus of interest has been on those services that are targeted to firms or organisations, i.e. on business services (also called "producer services"). Business services have already long been assumed to be important as intermediate inputs in production, thereby supporting competitiveness. According to Martinelli (1991a, 21-22), "these services are increasingly recognised as a crucial element in economic development, as a factor that significantly influences the dynamics of growth, innovation diffusion, productivity increases and competitiveness across

firms, sectors and regions...They must therefore be considered production inputs in the same way as other intermediate goods." Inside the business services expert services have attracted special attention. Gibbons et al. (1994, 21) describe their role as follows: "The role of specialist knowledge is particularly evident in the development of producer services which many believe will become the prime source of sustained high value-added to sectors as different as high fashion and motor-cars. In each case the producer services sector uses specialist knowledge to provide solutions which give products, even mass-produced ones, their specific market edge."

Since the mid-1990s, business services based on expertise have been referred to with the term "knowledge-intensive business services (KIBS)". The term "intensive" in this context emphasises that the knowledge functions concerned involve more than mere transfer of existing information (Miles et al. 1995, 16). The core of the activities of KIBS has been seen to be just that kind of fostering of knowledge development through learning, which according to current understanding is essential in innovation activities. On this basis a number of studies have been carried out on the innovation activities of KIBS. These studies have dealt with KIBS both as sources, carriers and facilitators of innovation. Especially those sub-sectors of KIBS that are connected with technological development have been found to be very innovative. All kinds of KIBS have been perceived to function as carriers and facilitators of innovations. While "shuttling" between various firms, KIBS provide their clients consultative services based on the knowledge and experience gained from other clients. (Howells 2000, 9; Miles 1999a, 92-94).

In recent years the significance of futures thinking has been emphasised in innovation research and in innovation policy. In order to be able to develop and support innovation activities, information will be needed on the future views of different sectors, especially on promising new possibilities. As society and economy are nowadays developing in increasingly faster cycles, comprising a number of uncertainty factors, the conventional forecasting methods have proved insufficient for acquiring futures intelligence. The approach in which the primary object is not to identify the most probable state of affairs in the future, but to understand the new processes initiated has gained more and more ground. The central ideas of this approach called "foresight" are preparedness for many different futures and "making the future".

Irvine and Martin (1989, 5) describe the difference between foresight and forecasting as follows: "...whereas forecasting techniques can be - and indeed often are - treated as a 'black box' for translating input assumptions into outputs taking the form of predictions about the future, foresight is much more concerned with creating an improved *understanding* of possible developments and the forces likely to shape them...Central in most foresight, therefore, is the deployment of monitoring mechanisms to provide an early-warning of emerging trends and opportunities...Whereas predictive forecasting implies a rather

passive attitude towards the future, foresight and *la prospective*<sup>1</sup> involve a much more active stance - reflecting a belief that the future is there to be created through the actions we choose to take today.”

The starting point emphasising activeness is reflected in practical foresight projects in the efforts to combine future intelligence gathering with network building and joint actions. Also in methods with which anticipatory information is gathered interaction and participation play a key role. Methods based on expert knowledge are typical foresight methods, although mathematical forecasting models have also been fitted into the foresight frame of reference. The Delphi method and expert panels are the most common methods based on expert knowledge. The Delphi method is founded on the anonymous interaction of experts: it includes several survey rounds, between which respondents obtain feedback from the results of the previous rounds. In the panel method expert groups in specific areas and issues are collected; each of these "panels" produces future intelligence from their own thematic field using various network-based working methods. (Hjelt et al. 2001, 22-23)

Researchers and developers of foresight have underlined that the rationale for foresight lies especially in the wiring-up of the innovation systems (Martin and Johnston 1999, 38). The connection between innovation activities and foresight has, however, mainly involved technology-intensive sectors; the service sectors have clearly had minor representation in foresight projects<sup>2</sup>. From the historical viewpoint, this is understandable because the focus of foresight exercises in their early stages was on technological issues. More recently, as the importance of the development of the entire innovation system has been realised, the emphasis on technology has, however, diminished. (Hjelt et al. 2001, 11; Miles 1999b, 5). Moreover, some foresight projects have also come to include themes from outside the innovation system; for example, culture-related issues or issues involving societal problems like crime (see e.g. FOREN 2001, 63 and 95). However, these changes have increased the share of the service sectors in foresight projects to a surprisingly limited extent.

Inside the service sector KIBS would be an especially important and interesting object in terms of foresight due to their linkages to innovation activities. Nevertheless, the future prospects of KIBS have not been systematically mapped out, and they have not been represented in foresight projects any more than the other service sectors. Many studies on KIBS naturally comprise some reflections on the future development trends of these services. The reflections are, however, dispersed: starting from the innovation perspective KIBS research has in recent years branched off to many different fields of science in which it

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<sup>1</sup> "La prospective" is the French counterpart to the Anglo-Saxon notion of foresight. Its leading developer Godet stresses, like the foresight approach, that the future is not written, but remains to be carried out (Godet 1986, 136). Also the idea of multiple futures occupies a central role in the thinking of French futurists; the concept of "futuribles" referring to this idea originates from one of the most significant pioneers of futures research, de Jouvenel (1967, 18-19).

<sup>2</sup> An important exception is the foresight project implemented in the UK during 1993 - 1998. Incorporating service sectors into foresight was emphasised in the project and explicit efforts were made to fulfil this aim. (cf. Miles 1999b, 9-11)

has received emphases characteristic of these fields. The branches of science where KIBS research has been conducted include, besides innovation research, the sociology of knowledge and science, management and organisation studies, economic theories, regional geography as well as interdisciplinary research of the new networking economy and informational society. (cf. Miles 2003, 7; Windrum and Tomlinson 1999, 391-392).

In addition to the innovation perspective, the research into the future prospects of KIBS is important in terms of their central position in knowledge markets. When speaking about today's economy as "knowledge-based", reference has also been made to this change of the markets, to continuously increasing knowledge-related transactions. According to Gallouj, "KIBS firms are organisations that are particularly representative of this economy, since knowledge constitutes both their main input and output... the activity of KIBS providers can be said to consist of the production of knowledge from knowledge." (Gallouj 2002, 256 and 261; see also Djellal 2000, 648) Many of the sub-sectors of KIBS are closely connected with the new information technology and are forerunners in using and in developing this technology. Howells argues that the role of Internet- and web-based services and the growth in some other high technology services (e.g. environmental services) indicate that certain types of KIBS are even taking a proactive, lead role in the economy (Howells 2000, 5). The observations concerning the quantitative development of production and employment in KIBS support the conclusion of the increasing significance of these sectors: KIBS, like business services in general, have grown clearly faster than the average level of economic growth in most of the Western countries.

The purpose of this study is a systematic and coordinating analysis of the development of KIBS. The study applies foresight thinking, i.e. the primary aim is to understand the new processes initiated by using both theoretical and empirical material. On the other hand, this study deviates from the mainstream of foresight studies in that it heavily stresses a long-term historical analysis as a basis for foresight - very often the starting point in foresight studies has been the present-day situation. The rather comprehensive historical part of the study can also be used as such for information needs concerning the development of KIBS already realised. The framing of the research, the formulation of the central questions and the methodology used will be described in the following chapter.

## 2 RESEARCH DESIGN

### 2.1 The scope and theoretical framework of the study

The study in hand examines the past and future development of knowledge-intensive business services (KIBS). The aim is to discover the central characteristics of this development, with particular focus on changes in trends and on new phenomena. The study analyses both the development of the role and significance of KIBS, the development of the contents of these services and the development of the ways to provide the service. The study is based on three main approaches:

- the analysis of the long-term development of KIBS,
- the utilisation of theories striving for explanations of the earlier development, as well as of theories on the present role of KIBS and on the factors influencing their future development,
- the examination of the views of experts about the future prospects of KIBS.

The last approach consists of interviews made in the Finnish KIBS sector. The target area of the study is the entire KIBS sector. However, the various sub-branches are discussed in the light of examples both in literature analysis and in the analysis of the empirical material. The sub-branches belonging to the KIBS sector will be defined in Chapter 3.

The theoretical basis of the study is the innovation and knowledge economy perspective which was briefly described in the previous chapter and which makes KIBS an interesting and important object of research. This perspective, which will be examined in more detail in Chapters 6 and 7, does not form one coherent theory, but rather a model of thinking that combines many research findings. It provides conceptual tools that help to indicate those novel features of advanced industrial societies that are important from the viewpoint of KIBS' development (cf. Miles and Boden 2000, 262). The core of these novel features is the essentially accelerated circulation of information and knowledge. This model of thinking does not imply that the importance of information, knowledge, learning and innovation would be a new phenomenon or characteristic of only the present day. All in all, the concept of "knowledge economy" - and the related concepts of "learning economy", "information economy" etc. - are used in this context more as pragmatic tools of analysis than as labels of a paradigmatic societal change.

Besides being a central motivating factor for the whole study, the arguments that the innovation and knowledge economy perspective comprises also serve as the foundation for some themes and issues in the empirical part of the study. This part examines - in addition to the main directions of the future development of KIBS - the nature of the service innovations produced by KIBS and the new promising innovation activities that seem to be developing in the sector. The linkages between innovation activities and learning are also an issue to be studied in the empirical part. It will be mapped out how widespread are innovativeness and the new development features detected in various KIBS

sectors, and what kinds of new skills requirements the development imposes on KIBS. Here, the innovation activities of those KIBS that are not immediately linked with the development of technology are particularly interesting, because of the scarcity of research in this area. The examination of innovation activities in the empirical part of the study is focused on the company level, whereas in the discussion based on literature the level of innovation systems is also included.

## 2.2 The "type" of foresight applied

In foresight studies, a large number of different approaches have been applied and have been categorised in various ways. For this study, the important ones are the divisions into quantitative vs. qualitative and exploratory vs. normative approaches (Gordon 1992, 27; see also FOREN 2001, 15-16; Hynynen et al. 1979, 12 and Loveridge 2000, 76-82):

- Quantitative methods rely on the numerical presentation of future developments; they often include forecasts and use modelling techniques. Qualitative approaches vary from methods focusing on the encouragement of creative thinking to the use of systematic qualitative techniques. Combinations and intermediate forms of quantitative and qualitative approaches are also common.
- Exploratory methods start from the present and examine what kinds of alternative futures development can lead to. These methods often ask questions about the implications of possible developments or events that lie outside the familiar trends (the "what if" questions). In normative methods a preliminary view of a possible (often desirable) future or set of futures that are of particular interest is first created. After that follows an analysis of how these futures might or might not grow out of the present - how they might be achieved, or avoided (the "how" questions).

This study is qualitative when mapping out future prospects; the quantitative approach is only used in the statistical descriptions of the past development of KIBS. In the exploratory - normative dimension the study represents the former approach. Its focus is on the analysis of the important characteristics and processes discernible at present in KIBS and of the ensuing various possible development tracks. However, the starting point in this study is not only the present, but it is considered important to extend the analysis to history as well. The study follows the footsteps of those futures researchers who emphasise the rich interconnections between the past, present and future (Slaughter 1996, 99-100)<sup>3</sup> and the significance of retrospective thought for prospective studies (Godet 1994, 49). A solid basis for an evaluation of the future prospects of KIBS

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<sup>3</sup> According to Slaughter, the boundaries between the past, present and future are also fluid and open. He uses the concept of "extended present" to describe the fact that the present includes ingredients of both the past and the future. (Slaughter 1996, 100) In fact, it is just the "presence" of the ingredients of the future in the present that makes futures studies possible.



is pursued through analysis of development in this sector in the long term, and by linking this development with its societal background. The study examines which factors in the role and functioning of KIBS have already been discernible much earlier, how and why these factors have changed and which phenomena can be interpreted as being mainly new.

In the analysis of the future development of KIBS, three concepts generally applied in futures studies are used: driving forces, trends and weak signals. These concepts can be defined as follows:

- *Driving forces* are the most central phenomena which prevail in society at a certain point of time and form the basis for decision-making and important choices (Rubin 2002, 891-892).
- *A trend* is the general direction found in the long-term development of the phenomenon studied (Rubin 2002, 904). In this study the concept of *strong prospective trend* is introduced.
- *A weak signal* is the first indication of change; it is a phenomenon or a group of phenomena that have no history or trend. When occurring, a weak signal does not necessarily seem important, nor is it extensive, but it may have a decisive impact on the formation of the future. (Mannermaa 1999, 87; Rubin 2002, 894).

The concept of driving forces is used in this study for the analysis of those phenomena at the level of the entire economy that constitute the essential framework for the future development of KIBS. The concepts of trends and weak signals are used to outline the internal development of KIBS. With the help of the former the main lines of future development in the sector are mapped out. By means of the latter the issues and development phases where unexpected outturns can be expected are identified.

The concept of driving forces is sometimes used in futures studies nearly as synonymous with the concept of trend - the term is then often modified into the form "driver" (Kuusi and Kamppinen 2002, 148). It cannot be denied that at least some phenomena can be analysed both as a driving force and as a trend. However, the objective of the analysis and the focus of the examination are different in these two cases. If the phenomenon is studied as a trend, attention is paid especially to the direction of its own development in the long-term. If the phenomenon is studied as a driving force, the focus is on the current situation and on the direction that the phenomenon seems to push other phenomena. In addition, some driving forces are such that they do not, at least so far, have a clear direction, like trends. In other words, despite having important effects on other phenomena, a driving force may be more unstructured than a trend, and neither will it necessarily develop into a trend in the future (Rubin 2002, 892). Due to these reasons, it would be preferable to keep the concepts of driving forces and trends apart in the terminology of futures research. In this study, it is especially important to make a clear difference between the concepts, because they are explicitly used on different levels: the former refers to the societal level, the latter to the KIBS branches. The definitions presented above justify this kind of application: it is most natural to examine driving forces as phenomena having

influences on a wide level, mostly on the level of society as a whole. Instead, trends can be identified in phenomena of many different levels. (Mannermaa 1999, 87; Rubin 2002, 891)

Also the use of the concept of trend in this study calls for a specification, because the concept is used in two different ways in futures research. Firstly, it is used in studies aiming at quantitative forecasting, in the so-called trend extrapolation, where trends strongly rely on the regularities detected in the past development. In their simplest form trends are presented as linear exponential curves projected forward on the basis of historical data. These kinds of extrapolated trends are mainly used in short-term forecasts. In longer term analyses the development realised is studied for more complex data patterns (e.g. s-shaped logistic curves), and ceilings and turning points in the future development are taken into account. However, the object in these analyses, too, like in short-term forecasts, are the extent and the rate of change; understanding the underlying driving forces and considering the qualitative changes in trends are not the focus (FOREN 2001, 112-113).

Instead, the latter issues form the core of the other trend approach of futures studies, called "*qualitative trend analysis*" (Coates 1996, 63-64). The study in hand belongs to this research tradition<sup>4</sup>, and - as stated above - to that branch of this tradition that considers reviewing past development essential in outlining future potential. Actually, linkage with history is inherent in the concept of trend. Even when future trends are analysed in qualitative terms, a longer or shorter historical period must be included in order to see that the development has taken or is taking a specific course. It is also characteristic to trends that, once emerged, they show continuity, sometimes even persistence. If the analysis is started from the present, some earlier trends that are still effective and relevant to the topic may come to be neglected. On the other hand, according to foresight thinking, on which this study is based, the future cannot be examined as a direct continuum to past development. First, knowledge about the future clearly differs in its nature from knowledge about the past or present - an issue that will be discussed later. Secondly, important changes in meanings and practices can happen even when the phenomenon appears to remain the same. Furthermore, breaking and turning of trends are not only possible but are important factors leading to alternative futures. (cf. FOREN 2001, 113; Kuusi and Kamppinen 2002, 149) In order to make clear the meaning of the concept of trend, as it is used in this study, it is specified into the form "*prospective trend*".

Trends differ from one another in terms of their significance: some of them are even incidental, like trends in fashion, while some others may be quite permanent (Kuusi and Kamppinen 2002, 149). As the purpose of this study is to obtain with a trend analysis a picture of the main lines of the future development in KIBS, the study focuses on the most important and probable development

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<sup>4</sup> The study also includes some rough estimates as to when a new kind of a service or process will replace the previous one in the KIBS sector. In this narrow sense the study also comprises "forecasting", although this is not the prime goal.

features. These can be called "strong trends" (cf. Godet 1994, 58). In Finland the term "megatrend" is often used in this context. Many international futures researchers, however, avoid the use of the term "megatrend". The term originates from Naisbitt (1984, 1), who used it of ten major transformations taking place in society. The concept of megatrend is still often associated with Naisbitt's list and the criticism of this list has also characterised the concept itself (Slaughter 1996, 263-264). Due to these problems and to the fact that the concept of megatrend is generally used to refer to phenomena on the broad level of society, this study prefers the concept of "*strong prospective trend*" in the analysis of the future of KIBS.

Even though the term "megatrend" is not applied in this study, the definitions given by Finnish futures researchers to this concept can be used to throw some more light on what kinds of phenomena are looked at. According to these definitions, megatrends refer to such phenomena that, based on development already realised, can be seen to have an identifiable direction and that are expected to go to the same direction in the future as well. Megatrends refer to regularities that combine several minor and smaller trends. Thus the main characteristics of a megatrend are significance and the high probability of its continuance for a time. (Kamppinen et al. 2002, 33; Kuusi and Kamppinen 2002, 149; Mannermaa 1999, 84-85) In the identification of strong prospective trends, this study also applies the so-called top ten -procedure, which is often linked with megatrend analyses. This procedure aims to list and analyse a restricted number of the most important development features connected with the future of the phenomenon studied. Despite the name of the method, the number of the factors studied may also well be eight, fifteen, etc. (Mannermaa 1999, 81; Mäkelä 2000, 97; Rubin 2002, 904)

The concept of weak signals originates from Ansoff, who defined the concept as "imprecise early indications of impending impactful events" (Ansoff 1984, 22; see also Ansoff 1975)<sup>5</sup>. The concepts of a "wild card" (Mannermaa 1999, 87-92), a "germ" (Godet 1994, 58) and an "early warning" (Nikander 2002, 22) have been used as synonyms or as near synonyms with a weak signal<sup>6</sup>. Weak signals may play an important role in breaking trends, but they do not necessarily have anything to do with the prevailing trends. The strengthening of a weak signal or the uniting of a number of weak signals may bring wholly new dimensions to the development and be as such a factor that leads to an unpredictable future. Applying the concept of weak signals is another way - besides the analysis of discontinuities of trends - in which multiple futures can

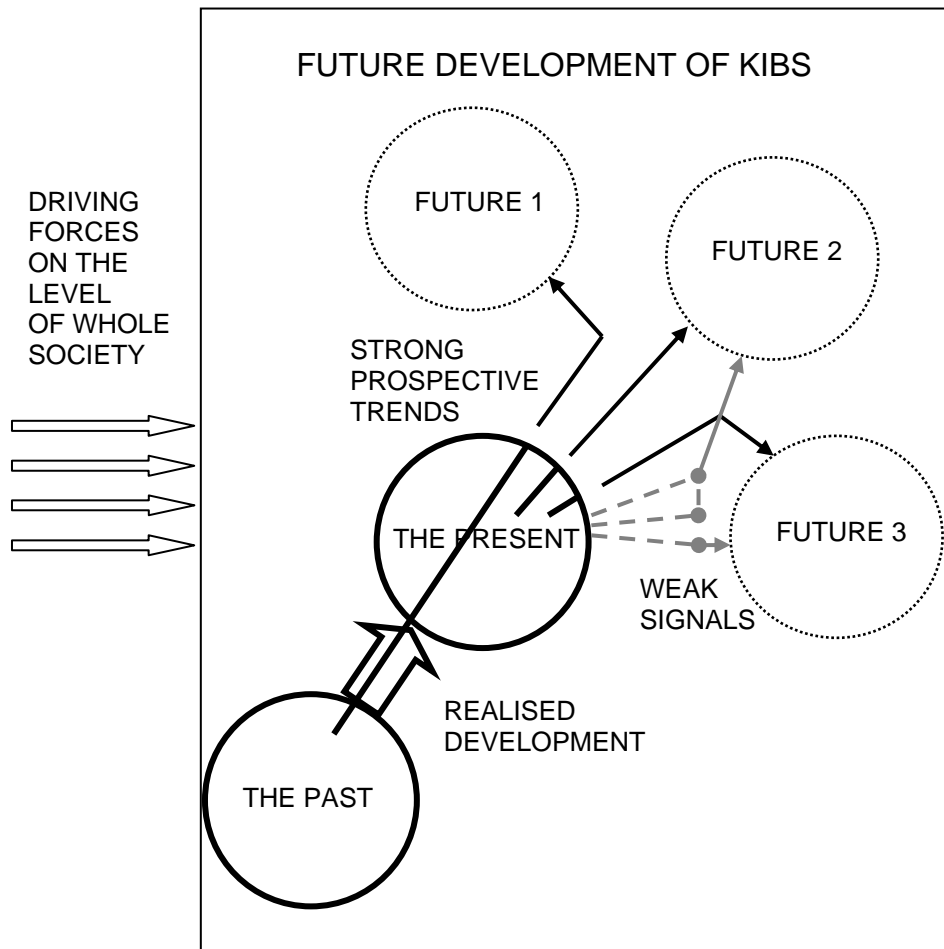
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<sup>5</sup> In fact, even though Ansoff is the central developer of the concept of a weak signal, he was not the first who paid attention to this kind of a phenomenon. Already in 1965, Massé had brought up the importance of signs which are slight in terms of their present dimensions but huge in terms of their virtual consequences (Massé 1965, 33-34; cf. Godet 1994, 58).

<sup>6</sup> In some studies, the concept of a weak signal - especially when it has been used in the sense of an early warning - has been interpreted more broadly as an indication of future developments in general, i.e. the criterium of important and extensive impacts included in the original definitions have not been emphasised. As an example of such an application, Nikander's study on early warnings in project work can be mentioned. Nikander defines an early warning as "an observation, a signal, a message or some other item that is or can be seen as an expression, an indication, a proof or a sign of the existence of some future or incipient positive or negative issue" (Nikander 2002, 49).

be taken into account, according to the basic ideas of foresight. The foresight approach and the foresight concepts applied in this study are shown in a simplified form in Figure 1.

Figure 1: A simplified model of the foresight approach and the foresight concepts applied in this study



In the Figure the realised development that has led from the past to the present is marked with one broad arrow. Strong prospective trends, which may lead to different kinds of futures, are marked with thin black arrows (in practice several trends lead to each future). The Figure shows that prospective trends can relate to phenomena that have a long history or they can be phenomena in which a certain direction of development has been detected only lately. To emphasise the different nature of foresight knowledge and history-derived knowledge, a break is marked between prospective trends and their previous development stages. Prospective trends can continue in the future along their current direction or the trend may break off and lead to a different kind of future than it could be deduced from today's development. Weak signals, whose current appearances are marked with grey dashed lines, may be the reason for the discontinuance of the trend. Weak signals may with time become stronger, turn out to be significant phenomena (grey dots) and develop to become even strong trends (grey solid line). A strong trend can also emerge when several weak signals combine with one another.

As already stated above, futures research includes features that differ from research into existing or past reality. As the results cannot be verified in the course of the study (cf. Bell 1997, 148-149), an important criterion is the relevance of the results for the future. Tacit knowledge and intuition are often decisive in view of this. Real visionary ideas are often found through elicitation of tacit knowledge and by using intuition, and therefore these forms of intelligence gathering cannot be ignored despite the deficiencies related to the validity and objectivity of the information. Values, beliefs, and the like are included in all scientific research, but futures arguments are still much more a combination of factual, tested information and untested subjective opinions. (cf. Kuusi 1999a, 5; Loveridge 2000, 12-14). Due to the different nature of knowledge, it is sensible to keep the analysis of development that has already taken place or is happening apart from the surveys on the future. Thus in this study they are discussed as unities of their own, in separate parts of the book.

### 2.3 Research questions

Based on the grounds mentioned above, this study has two major parts: firstly, analysis of the long-term development and the present state of KIBS - called here "the historical part" - and secondly, the part mapping out the future prospects of KIBS - labelled as "the anticipatory part". The main interest of the study lies in the anticipatory part, but the examination of history and the present day forms an important basis for it. With this examination it is intended to increase understanding of the main characteristics of KIBS' development and of the role of these services in the economy. The theoretical framework of the study - the linkage of KIBS to innovation activities - functions as the starting point in analysis of the current state of the sector. The study seeks to connect this rather new research tradition with previous studies targeted to issues close to the KIBS topic. In this way the theoretical basis of the study is extended to involve also development in the longer term. There are two main research questions examined in the historical part of the study:

*Q1: How have KIBS developed quantitatively and qualitatively, i.e. in terms of their nature and role, in the long-term and with which kinds of general developmental phenomena in the economy and society has their development been associated?*

*Q2: What is KIBS' role today in the economy and society especially in view of innovation activities?*

An answer to the first question is sought by examining the quantitative development of KIBS in the light of statistics and the development of their nature and role on the basis of research findings and theories. Theories and studies also form the material for the analysis of those more general societal phenomena that are important background factors in the development of the

sector. Besides the search for an overall picture of the development, a special aim is to study what phenomena that are significant for the present role of KIBS have already been discernible in the earlier stages of KIBS' development and what kind of a form these phenomena have then taken.

The second question lies at the core of recent thinking about KIBS. It is examined by looking into the actual KIBS research carried out since the mid-1990s. The central theoretical arguments forming the starting point for the study in hand are presented and evaluated at this point. To connect this discussion with earlier development, it will be analysed what kinds of broader societal changes have been associated with the rise of KIBS to the fore and what kinds of theoretical ideas have been the preconditions for identifying these changes. Here the changes connected with the growing significance of innovativeness are especially important. From the theoretical viewpoint, the new insights concerning the nature of innovation are particularly relevant, the discovery of the innovativeness of the service sectors being one of those insights.

The anticipatory part of the study is structured on the basis of three research questions. First, the driving forces of today's economy that can be expected to shape the futures of KIBS in the most essential ways will be studied based on theories and research findings. Secondly, an analysis of strong prospective trends and weak signals is carried out to examine the main features of the future development of KIBS, and the phenomena that may change the development in an unexpected manner. Thirdly, the future development of KIBS will be analysed in terms of innovations and challenges to know-how. The two latter research questions are examined mainly on the basis of the empirical material of the study, i.e. interviews in the Finnish KIBS sector. The research questions in the anticipatory part of the study are:

*Q3: What are those driving forces in today's economy that can be expected to be the most crucial for shaping the futures of KIBS, and what kinds of starting points do these driving forces offer for the future development of KIBS?*

*Q4: What kinds of strong prospective trends and weak signals can be found in the development of KIBS?*

*Q5: What types of new innovation activities are emerging in the KIBS sector, how widespread is innovativeness in the sector and what kinds of new know-how and learning requirements does the development impose on KIBS?*

In the mapping of the driving forces, theories and models of thinking will be utilised that describe the development taking place at the whole society level. Information on the directions to which these driving forces are taking the development of KIBS is sought in those KIBS studies that include the future dimension, although it has not usually been mentioned explicitly. The ideas about the knowledge and learning economy closely related to the new conception of innovation constitute the perspective coordinating the analysis.

The analysis of strong prospective trends and weak signals aims to map out the futures of KIBS from two different angles: By means of strong prospective trends those development features are specified which are central today and whose continuance is probable. These form a general picture of the future development of KIBS as we see it today. The analysis of weak signals complements the picture by bringing up possible points of emergence of new phenomena that may be important as such or even change the direction of the development. Previous studies have shown that the service contents and the ways of providing services are hard to separate in the service sectors. Thus it is reasonable to examine these factors as well as the changes in the role of KIBS as intertwined issues in the analysis of strong prospective trends and weak signals.

The view that KIBS have close connections to innovation is the main thread through the whole study. The fifth and last research question links the analysis of the future prospects of KIBS tightly to this theoretical basis of the study. In this context the first aim is to identify new promising innovation possibilities in the KIBS sector as a whole. Secondly, the generality of innovation activities in this sector are examined. The study will especially map out to what extent the new development features and innovation activities, which are analysed in the previous points, can also be identified in KIBS other than those closely linked with high and new technologies. As innovativeness is closely connected with learning, the on-going and future development will also be studied as a challenge to know-how in all kinds of KIBS; the most important new spheres of skills will be explored.

## **2.4 Methods and research strategy**

The method to be applied in the historical part of the study will comprise a literature analysis and an analysis of statistical data. The main method in the anticipatory part will be face-to-face interviewing. The analysis of driving forces will, however, be based on literature; in addition, theories and previous studies will be utilised as reference material when analysing the empirical results. Table 1 on the next page summarises the different materials and methods used in the study for the analysis of the research questions put forth in the previous sub-chapter.

When analysing the long-term development of KIBS, one has to rely mainly on material in which knowledge-intensive services have not yet been separated from the other business services or in which they belong to an even wider set of services, i.e. to producer services. The way in which the concepts of business services and producer services differ from the KIBS concept will be examined in detail in connection with the definition of KIBS in Chapter 3. As stated above, one of the targets of the historical part is to link KIBS research with earlier studies. Besides providing a longer time horizon, the results of research into

producer services can be used as complementary to the findings of KIBS studies. The need for a synthesis is great because studies on both producer services and on KIBS are distributed among several branches of science and because there are few surveys unifying results across the scientific borders.

Table 1: Research strategy

<b>Focus (research question)</b>	<b>Method</b>	<b>Research material</b>
The long-term development of KIBS and its association to broader societal and economic development (Q1).	Review of literature and statistics.	Theoretical analyses and empirical study results concerning producer and business services and the early professional services; statistical sources.
The present role of KIBS, especially their role in innovation (Q2).	Literature survey.	Innovation theories; theories and study results on KIBS.
Driving forces of today's economy shaping the future of KIBS (Q3).	Literature survey.	Theories of knowledge and learning economy; the study results on KIBS having the futures perspective.
Strong prospective trends and weak signals in the development of KIBS (Q4).	Interviews in the Finnish KIBS sector. Application of the analysis of strong trends and weak signals.	Interview material connected with the findings discovered in the literature analyses.
Promising innovation activities in KIBS, generality of new features in the sector, challenges to know-how and skills (Q5).	Interviews in the Finnish KIBS sector.	Interview material connected with the findings discovered especially in the literature analysis of KIBS' innovation activities.

In the anticipatory part of the study, the use of experts as information sources occupies a central position. Representatives of the Finnish KIBS sector are used as informants; the sample is collected from the companies at the leading edge in the sector. A precursor analysis of this type is one of the approaches commonly used in futures studies (Coates 1996, 70). However, the use of precursors - as the use of experts in general - as informants is challenging. Deciding who is an expert is a complex issue and many aspects requiring methodological carefulness and critical assessment are connected with the elicitation and interpretation of expert knowledge. The use of human judgement always involves inaccuracies and the possibility of bias. (cf. Loveridge 2000, 39-48) The use of expert knowledge as a tool for foresight and the solutions made in this study will be discussed in more detail in Chapter 8.2.1.

Semi-structured face-to-face interviews, i.e. interviews based on broad themes, have been chosen as the method for collecting futures information. The justification for choosing this rather free-formed method was that there was very



little earlier information available on the KIBS sector in Finland. A method that could bring up new material as freely as possible was called for. It was evaluated that with the use of more structured foresight methods important issues might in this case remain unattained. On the other hand, it was thought that free-formed working in workshops alone would easily remain at too general and superficial a level. In the KIBS sector, as in service sectors in general, very little foresight work has been carried out and the conceptual tools of analysing development are therefore not very well developed. International foresight studies have indicated that the most common foresight methods - expert panels and Delphi - have been more difficult to apply in the service sectors than in the manufacturing sectors (Miles 1999b, 13-14). The advantages of the interviewing method and the related challenges will be dealt with in more detail in the discussion about the central methodological solutions of the study (Chapter 8.2.1).

The interview material has been collected from 87 KIBS companies. Before the company interviews 10 professional associations engaged in the KIBS sectors were interviewed. The professional associations assisted in selecting the interviewed companies and the sample was supplemented with the so-called snowball sampling method during the study process. The interviews mainly operated on the level of the KIBS sector represented by the interviewee. The basic data on the companies were collected from the websites and only supplemented in the interview, if needed. The themes of the interviews, the sample and implementation of the interviews will be described in detail in Chapters 8.2.2 - 8.2.3. In addition, these chapters describe how strong prospective trends and weak signals have been identified on the basis of research findings; the evaluation of the results in terms of their reliability and validity is also included.

## **2.5 Structure of the book**

The study is structured as follows: Part I comprises, besides the introductory chapter above and this research plan, Chapter 3, in which the different interpretations given to the KIBS concept will be described and evaluated and a modified new definition will be provided. The discussion will begin with an analysis of the broader concepts of producer services and business services, after which the interpretations and operationalisations of the concept of knowledge-intensity and KIBS will be dealt with. The end of the chapter will present a summary of the definitions and the definition to be used in this study.

Part II covers the historical part of the study: it includes an analysis of the long-term-development and of the present role of KIBS and comprises Chapters 4 - 6. The quantitative development of producer and business services and KIBS will be described in Chapter 4. First there will be a brief account of the initial phases of different kinds of expert services as professions and as industries. A

description will follow thereafter of the growth of producer services and business services up to the end of the 1980s based on country-specific exemplary data obtained from various research sources. The end of the chapter will handle the more coherent statistical material on the output and employment of business services, which has been available for over the last ten years. The most recent developments will also be separately described in terms of KIBS, but information on this is available for a few countries only.

Chapters 5 and 6 will analyse the development of the role and nature of KIBS and the current situation of these services based on literature. In this connection, the link of KIBS' development to more general phenomena in society will also be dealt with. Chapter 5, which will discuss long-term development, is based on studies of producer services and business services. This chapter will describe the explanations given for the growth of these services and the analyses of the role of these services in the economy. Chapter 6 will go through the actual KIBS research, whose most important theme is the role of KIBS in innovation - as innovators, on the one hand, and as supporters of innovation activities, on the other. This chapter will also discuss the more general views of the nature of innovations activities, of innovation systems and of service innovations, which have had a strong impact on KIBS research. Both Chapter 5 and Chapter 6 end up with a summary; these summaries aim to crystallise how the present understanding of KIBS has gradually developed and how this development has been linked with broader phenomena in society and with analyses at that level.

Part III will move over to the actual foresight part of this study, to examination of the future prospects of KIBS. Based on theories and studies, Chapter 7 will discuss those driving forces in the present economy that constitute the framework for the future development of KIBS. Chapters 8 to 10 comprise the empirical part of the study. Chapter 8 will first briefly describe the Finnish KIBS sector on the basis of statistics as a background to the interviews. Then a more detailed discussion of methodological issues related to the interviews will follow. Chapters 9 and 10 will present the results of the interviews. Chapter 9 will discuss the development of KIBS by means of an analysis of strong prospective trends and weak signals. Each of the strong trends identified is first examined in its own sub-chapter, after that a summarising analysis of trends is presented. Weak signals are brought up as a topic of their own. In Chapter 10 the future prospects of KIBS will be examined especially in terms of the arguments that the theoretical basis of the study sets, i.e. from the viewpoint of the contribution and linkages of KIBS to innovation. Furthermore, this chapter will examine the future trends mapped as a challenge to KIBS. It will analyse how widely the new features are visible in KIBS of various types and what kinds of know-how and skills requirements the development imposes on KIBS. Finally, Chapter 11 will contain a summary and conclusions of the whole study.

### 3 DEFINING KNOWLEDGE-INTENSIVE BUSINESS SERVICES (KIBS)

The term “knowledge-intensive business services (KIBS)” was first used in 1995 by Miles et al. Nowadays the term is commonly applied in the studies of service branches, but a uniform definition is still lacking. KIBS are business services and they are knowledge-intensive services; difficulties in finding a common understanding are connected with both of these aspects. On one hand, difficulties arise from the indefinite character of the whole service sector and of the business services sub-category. On the other hand, the concept of knowledge-intensity admits several interpretations both in the theoretical sense and in practical applications. Operationalisation of the concept is especially hard to achieve due to the growing significance of knowledge in practically all branches today (cf. Miles et al. 1995, 16-17). In the following, the more general issues connected with the definitions of services and of the sub-category of business services will first be discussed. After that interpretations of the concept of knowledge-intensity and specific definitions provided for KIBS will be treated. On the basis of these analyses the definition for this study is formulated.

#### 3.1 Taxonomies of services and the concepts of producer services and business services

The main purpose of this chapter is to explore the concept of business services as a more general framework for KIBS. However, especially in earlier studies the concept of producer services was used instead of business services; thus, both concepts are included in the analysis. The concepts are studied first on the basis of the main dimensions used in service taxonomies: demand, supply and function of a service. This is followed by a description of industrial and occupational sub-groups counted among producer and business services in the conceptual sense as well as in practical applications and statistics.

##### 3.1.1 Main dimensions of service taxonomies

The term “services” has several meanings; it can be used to refer both to the service work and to the results of this work, i.e. to service *activities* and to the *products* of these activities. It can also be used to mean service *industries* on one hand, and service *occupations* on the other. (cf. Gershuny and Miles 1983, 17 and 20; Illeris 1989a, 8-9) Even though the main share of service occupations is located in service industries, corresponding activities can be found inside manufacturing companies, too. As regards business services, including services of KIBS-type, there are activities in independent service firms

and in client (manufacturing) companies that are not only similar, but also highly interactive, as we will see in later chapters.

Irrespective of the basis on which services have been considered, there have been great difficulties in finding an adequate definition for this part of the economy. The most common approaches have been either to define services as a residual category not belonging to agriculture and manufacturing, or to describe features that typify services. (Gershuny and Miles 1983, 11; Marshall et al. 1988, 12; Ochel and Wegner 1987, 9-10) According to the former definition, service activities are those that do not produce or modify physical goods (Illeris 1989a, 10). When characteristics of services have been used as a definitional basis, the immaterial nature and the simultaneity of production and consumption have usually been brought up; the latter has also been formulated by saying that services cannot be stored or shipped (Martinelli 1991a, 17).

There are, however, several notable exceptions to these definitions; some services clearly involve material transformation, like food preparation in restaurants, and contain material products that are transferable, such as consulting reports (Martinelli 1991a, 17; Sayer and Walker 1992, 61 and 63). In addition, already in the early 1980s researchers remarked that many features interpreted as characteristic to services reflect historically specific circumstances of service production (Gershuny and Miles 1983, 12). This perception is all the more topical today as the development of technology has essentially changed the production of many services resulting among others in important new ways of combining services with goods (see e.g. Howells 2000, 28-29). In spite of deficiencies, there is fairly general agreement about the classification of specific industries as services or as manufacturing on the basis of the above definitions.<sup>7</sup> Several researchers have also emphasised the extremely diversified and heterogeneous nature of services, which brings the analysis of different types of services to the fore instead of seeking one uniform definition applicable to all (Illeris 1989a, 19; Marshall et al. 1988, 12; Ochel and Wegner 1987, 11). On this basis numerous subdivisions and taxonomies of services have been developed. In the following those taxonomies contributing especially to the definition of business services and KIBS are described.

Taxonomies of services can be divided into three groups (cf. Martinelli 1991a, 17; Riddle 1986, 14):

- taxonomies based on the type of demand
- taxonomies based on the form of supply
- taxonomies based on the nature of the service process or on the content and function of services

The groups are overlapping in the respect that demand- and supply-based taxonomies also contain some features describing the nature of a service as well as aspects concerning service functions. The main idea of the first group is,

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<sup>7</sup> On the level of main industries, the categorisation of construction, transport and public utilities (water and energy supply) has most often given rise to discussion. On a more specific level, repair activities as well as leasing and letting activities, among others, have been found difficult to put into the class of manufacturing or services, because they have characteristics of both. (Illeris 1989a, 16-17)

however, in categorisations by service user and of the second group by service provider.

Taxonomies based on the type of demand focus on the characteristics of the consumption of services. On this basis services are divided into two main groups: intermediate services and services targeted to end-use. (cf. Gershuny and Miles 1983, 12) In 1966 Greenfield introduced the concepts of *producer services* and *consumer services* to refer to these two groups<sup>8</sup>. From the viewpoint of the study in hand the category of producer services is in the focus. According to Greenfield producer services are “those services which business firms, non-profit institutions, and governments provide and usually sell to the producer rather than to the consumer” (Greenfield 1966,1). In later analyses, the difference between producer and consumer services has often been expressed by saying that the former category of services is targeted to corporate consumers, whereas the latter category is targeted to individuals and households (Gershuny and Miles 1983, 12; Martinelli 1991a, 18).

In fact, the division between producer and consumer services contains two related dichotomies: first, the difference between the ways in which services are used (intermediate vs. end-use) and secondly, the difference between service users (firms/organisations vs. households/individuals). In the early studies of services, corporate users were considered mainly to be manufacturing firms; along with the development of research, other service firms as well as the public sector were included in the target group of producer services (see Chapter 5.4 in this study). In more recent studies, the term *business services* is commonly used to refer to all or to the main part of producer services. The relationship between the concepts of producer and business services is discussed in detail in the next sub-chapter.

Even though the original definition of producer services by Greenfield focuses on the demand side of services, different suppliers of services have been included in the definition, too. The definition is broad in this respect, covering business firms, non-profit institutions and governments. In fact, these three types of agents are combinations of two dichotomies linked with the supply of services: *public - private* and *profit (marketed) - non-profit (non-marketed)* dichotomies. In more recent studies, it has been emphasised that all combinations of these dichotomies are relevant; also government-owned services divide into marketed and non-marketed services (Illeris 1989a, 24). Concerning the private sector, some researchers divide it not only into marketed and non-marketed part, but consider self-employed workers as a third group, because of differences in behaviour and strategies. (Martinelli 1991a, 18). The line between public and private services is not always clear-cut; for a number of

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<sup>8</sup> The concepts of producer services and consumer services are an extension of a taxonomic scheme of producer goods and consumer goods to service sector industries. The original division of manufactured commodities into producer goods and consumer goods was developed by Kuznets (1938 vol. I, 6; cf. Greenfield 1966, 7-8). It should also be mentioned that even though Greenfield was the first who used the concepts of producer and consumer services and analysed them in more detail, the difference between services targeted to business community and consumers had been noticed earlier (Stigler (1956, 138; in an even more preliminary form Clark 1940, reprinted 1960, 491-492).

services the ownership is mixed and the privatisation tendency is blurring the distinction still further. Thus, the content of public and private services varies to some extent from time to time and from country to country. (Howells and Green 1986, 98; Illeris 1989a, 24; Marshall 1985, 354)

Classifications based on the nature of the service process or on the content and function of services are numerous, but only a few of them are relevant from the viewpoint of this study. The relevant classifications can be divided into two groups: first, classifications that regard producer services as a separate category on the functional basis; secondly, classifications that contain a special category for information and knowledge services or that use the relationship of services to science, technology and innovation as a categorisation criterion. The latter group forms an important background for the definitions of KIBS and will be discussed in Chapter 3.2 together with these definitions. Concerning the former group, the intermediate nature of producer services has in some studies been interpreted to describe their *economic function* (cf. Gershuny and Miles 1983, 13). One of the best known classifications including this idea is that of Browning and Singelmann (1978, 484 and 487-491) who divide services into four categories: distributive services, producer services, social services and personal services. The specification of the producer services' category in this classification is presented in the next sub-chapter.

### **3.1.2 Sub-categories of producer and business services**

As was mentioned above, especially more recent studies have adopted the term "business services" instead of the term "producer services" or in addition to it. The relationship between these two concepts varies in different studies and is not always made explicit. Some researchers use the terms synonymously (Gershuny and Miles 1983, 13; Gillespie and Green 1987, 400); others consider business services to be a broader or narrower subgroup of producer services (Illeris 1989a, 23; Martinelli 1991a, 18). Irrespective of which of the concepts is applied, the categories of services included vary significantly. As services in general, also producer and business services can be treated either as industries or as occupations. The industrial categories counted among producer and business services by various researchers are presented in Table 2. The Table begins with the narrowest interpretations of business services, moves to broader ones and ends with studies that have not defined business services as distinct from producer services, or have used only the latter concept.

The Table shows that different kinds of expert and consulting services form the core of business and producer services in all studies examined (cf. Marshall et al. 1988, 18-19). In some studies the concept of business services covers only these industries. Expert services correspond closely to categories later defined as KIBS; their content is discussed in more detail in the following chapters.

Table 2: Interpretations of the concepts of producer and business services: industries included in different studies

	<b>Industries included in producer services</b>	<b>Industries included in business services</b>
Illeris 1989a, 22-23	finance, insurance, business services	qualified information and consulting services
Perry 1990, 198	wholesale, road haulage, storage and warehousing, shipping, labour and professional organisations, office cleaning, business services (listed in the adjoining column)	legal, accountancy, data processing, architecture, engineering and technical services, advertising, business services n.e.c.
O'Farrell 1995, 523	not defined	market research, advertising, consultancy, computer software, graphic design etc.
Stanback 1979, 17	wholesaling, finance, insurance and real estate, business services (listed in the adjoining column)	advertising, legal, engineering, auditing, consulting and a variety of lesser services such as telephone answering, janitorial work and provision of temporary office help
Martinelli 1991a, 19	banking, real estate, transportation and related services, (tele)communications, wholesale trade and commercial intermediation, business services (listed in the adjoining column)	R&D, insurance, non-banking financial services, legal services, accounting and fiscal consulting, technical and professional services, advertising and public relations, marketing services, organisational consulting, electronic data processing and related services, typing, photocopying and other paper processing services, rental of production equipment, other business services (cleaning, security etc.)
Gillespie and Green 1987, 400	insurance, banking and financial services, advertising, accountancy, legal services and property services	the concept of business services is synonymous to producer services
Browning and Singelmann 1978, 487 Goe 1990, 329	communication, banking, credit and other financial services, insurance, real estate, engineering and architectural services, accounting and book-keeping, miscellaneous business services, legal services	not defined
Tschetter 1987, 31	advertising, computer and data processing services, personnel supply services, management and business consulting services, protective and detective services, services to dwellings and other buildings, legal services, accounting and auditing services, engineering and architectural services	not defined

In addition to expert services, the following types of services can be found included among business or producer services or both: auxiliary office services, cleaning and security services, renting services, real estate services, banking and insurance, transportation and communication, wholesale trade and storage. In some studies there is also a group of "other" or "miscellaneous" business services that has not been specified.

The theoretically clear distinction between producer and consumer services has turned out to be problematic in practice (Gillespie and Green 1987, 403; Goe 1990, 329). The problem is the greater the more industrial classes are counted among producer services. If banking and insurance or transportation and communication are included, the share of services targeted to individuals and households is already considerable (cf. Marshall et al. 1988, 18). Some researchers have adopted the concept of distributive services to refer to the above-mentioned industries or to a part of them. The relationship between distributive and producer services varies; there are researchers who regard distributive services as a separate group in addition to producer services, others include distributive services as a specific group inside producer services.<sup>9</sup>

The intermediate nature of producer services has often been considered the decisive factor on the basis of which these services can be differentiated. Even though this is probably the best possible criterion available, it is not self-evident how the term "intermediate" should be interpreted. For example Browning and Singelmann (1978, 489-490) argue that services targeted to consumers but having the function of facilitating purchases of commodities should be included in producer services. If this kind of interpretation is applied today, when various services are more and more often connected with sales of goods, the scope of producer services broadens notably.<sup>10</sup>

When the concept of business services is used to mean a subcategory of producer services, a more precise specification of the target of services has usually been strived for. The aim has been to restrict the investigation to the organisational level and to leave consumers out as far as possible. As regards organisations, both firms and public organisations are included in service receivers. The specification of the service provider according to the public - private and marketed - non-marketed dichotomies varies no less than in the applications of the concept of producer services. In this respect the introduction of the term "business", which usually refers to the private sector of the

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<sup>9</sup> In the classification of Browning and Singelmann "distributive services" include transportation, storage, wholesale trade and retail trade; these services are not counted among producer services (Browning and Singelmann 1978, 487-488). Martinelli includes in her concept of "distributive infrastructure services" not only the above mentioned industries but also banking and real estate services. She counts distributive infrastructure services among producer services where they form one of two main parts; the other part consists of business services. (Martinelli 1991a, 18-19)

<sup>10</sup> The idea of Gershuny and Miles on the "intermediate" character of some consumer services touches upon the same problematics from a slightly different viewpoint. According to Gershuny and Miles, these are services acquired by consumers as inputs, together with material goods, into their own informal production of final services (Gershuny and Miles 1983, 43). In some studies the clarification of the special nature of producer services has been pursued by using the term "indirect production activities" (Gillespie and Green 1987, 399).



economy, has not brought with it a more exact definition: public and non-profit service providers are included to a greater or lesser extent. Thus, even though the term “business services” is sometimes interpreted as “services provided by businesses to businesses” (B to B), it is also interpreted more broadly as “all services targeted to businesses and organisations”.

Official statistics occupy an important position, when conceptual classifications are applied in practice. There are, however, additional problems in the use of statistics. From a theoretical viewpoint, the problem is that the relationship of the statistical categories to the conceptual distinctions described above is difficult to trace exactly (cf. Goe 1990, 329; Marshall et al. 1988, 16; Riddle 1986, 13). The internationally effective industrial classification ISIC<sup>11</sup> categorises economic activities according to three criteria: first, the character of the goods and services produced; secondly, the uses to which the goods and services are put; thirdly, the inputs, the process and the technology of production (UN 1990, 7 and 12). These criteria contain similar elements to the conceptual taxonomies. The aspects linked with the form of service supply are not, however, included (cf. *ibid.*, 8) and the way in which the different criteria have influenced the final categorisation is not discussed. Concerning the practical procedure, business services can be discerned in ISIC Rev. 3.1 (UN 2002), the version now in use, but one unambiguous category for them does not exist. The main category including business services is the category of real estate, renting and business activities.<sup>12</sup> This main category contains five divisions, and as both real estate and renting activities form their own divisions, the other three can be interpreted as business services. They are: computer and related activities, research and development, and other business activities. The last category includes various expert services like legal, financial and management consulting, technical services and advertising, but also security activities and office/factory cleaning.

In the ISIC classification, activities are grouped together into industries on the basis of the principal activity of economic entities, such as enterprises, establishments or government units (UN 1990, 8). Due to this, business services as an industrial category contain firms and organisations that are specialised in these services. As was mentioned above, services can, however, be considered from another angle, as occupations. In the occupational approach, the units to be classified are jobs. From this it follows that also business services provided ancillary to the main activity in manufacturing firms, in other service firms and in public institutions, are included. To some degree,

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<sup>11</sup> International Standard Industrial Classification of all Economic Activities (ISIC) is provided by the United Nations since 1948 (UN 1990, 2); the newest version 3.1 was introduced in 2002 (UN 2002). The classification contains four levels, from which the first two are valid worldwide. In Europe, Statistical Classification of Economic Activities in the European Community (NACE) Rev. 1.1 is in use; in this classification the three and four digit levels are modified to reflect European circumstances. There are also national variations; in order to take into account national needs the fifth level can be included. In Finland, the present-day version of the classification construed in this way is Toimialaluokitus TOL 2002. (Eurostat 2002; Statistics Finland 2002, 5-7)

<sup>12</sup> Compared to the earlier versions of ISIC, the main category is, however, more restricted. In ISIC Rev. 2, the main category containing business services also covered financing and insurance (UN 1990, 159-161). The term “producer services” is not used in statistics.

industrial categories based on functions of services may be applied to jobs, and there are some occupational classifications using, at least partially, the same breakdowns as industrial classifications (cf. Illeris 1989a, 26-27). The most common way to group occupations is, however, to organise them hierarchically according to educational level, remuneration and esteem (Browning and Singelmann 1978, 483); of the same type is the differentiation between routine and non-routine work (cf. Illeris 1989a, 28). The statistical classification of occupations ISCO-88, that is in force internationally, is construed hierarchically. It categorises jobs according to the kind of work performed together with skill level and skill specialisation. Due to the use of the concept of skill, ISCO is closely connected with educational categories and levels. (ILO 1990, 2)<sup>13</sup>

For the specification of producer and business services, occupational data alone are not sufficient, because it is not possible to differentiate between intermediate and final use on this basis. Combining occupational and industrial data essentially improves the situation.<sup>14</sup> For example, expert activities in business services have been studied by using detailed categories of scientific and technological professions: mathematicians, physicists, chemists, biologists, life scientists, engineers, architects, designers, psychologists, sociologists, economists etc. The distribution of the representatives of these professions between producer service industries, other service industries and manufacturing has been examined. (see e.g. MacPherson 1988, 954 and 971) The international classification of occupations ISCO-88 suits especially well the investigation of expert professions, containing as its main categories professionals and associate professionals (ILO 1990, 5-6).

However, even at best, statistical methods can provide only an approximate definition of business services. If detailed information of the services directed to intermediate use is desired, the activities inside firms and organisations have to be specified either as theoretical constructs or in empirical studies. This again tends to broaden considerably the spectrum of producer and business services: inside organisations and units one finds many individual activities that are at least partially targeted to intermediate use. For example, Illeris points out that education, health and recreation are necessary for producers due to their role in the reproduction of the labour force and the formation of human capital (Illeris 1989a, 44). Marshall includes in his definition of producer services welfare services as well as travel and accommodation. He considers especially important discussion about the nature of governmental services, because many of them contribute to production. His conclusion is that even though the role of public services as supporters of the private sector economy should be emphasised, there are also political and economic reasons that speak in favour of handling these services separately. (Marshall et al. 1988, 14-18)

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<sup>13</sup> The corresponding classification in Europe is ISCO-88 (COM) and the national classification in Finland Ammattiluokitus 2001. Like the industrial classification ISIC, ISCO is divided into four levels; in national versions fifth level is added when needed. (Eurostat 1992; ILO 1990, 2; Statistics Finland 2001, 5-6)

<sup>14</sup> In addition to industrial and occupational data, some researchers have used input-output statistics in order to examine the shares of services sold to consumers and to producers. For example, Greenfield used this method in his pioneering study (1966, 22-23).

### **3.2 The concept of knowledge-intensity and various definitions of KIBS**

The discussion thus far has dealt with definitions and classifications on the basis of which business services can be discerned from other services. In view of defining KIBS, the producer and the user of services have already been specified in quite some detail in this discussion; a summary will be given when the definition used in this study will be formulated in Chapter 3.3. However, regarding the contents, function and nature of services the discussion up to now has stated only that business services are intermediate services. When defining the distinctive characteristics of KIBS inside business services, this point has to be specified further: one must consider what kinds of intermediate services are provided particularly in this sub-group. The interpretation of the concept of knowledge-intensity is here under the spotlight.

In the preceding discussion expert branches inside business services were stated to correspond largely to the categories nowadays defined as KIBS. They were shown to form the core of business services, and, in fact, attention had already been paid to this sub-group in the early studies on producer services. At the first stage, this group of services was referred to by the term “advanced corporate services” (Stanback 1979, 18). Later on the concepts of “advanced producer services” (Moulaert and Daniels 1991) and “professional business services” were adopted (Aharoni 1993; Löwendahl 1993). The latter concept is still today in use besides the KIBS concept (Hermelin 2001) as well as the concept of “strategic business services” (OECD 1999). These last two concepts indicate that depiction of the special nature of KIBS has been tackled by starting from two main perspectives: by emphasising the high proportion of skilled labour in KIBS on the one hand, and by emphasising the role and significance of KIBS, on the other. These two approaches have also been the ones on the basis of which operationalisation of the KIBS concept has been attempted in practice. Before going into these approaches in more detail, the concept of knowledge-intensity will first be analysed on a more general level. The service taxonomies that include a specific category for information and knowledge services, or that use knowledge or concepts closely related to it as a categorisation criterion, will be examined.

#### **3.2.1 Knowledge-related categorisations of services**

Classifications where knowledge-related industries have been regarded as a separate category, or knowledge-related factors even as a categorisation criterion, can be traced back to the 1970s. Along with the rise of the discussion on “the information economy”, studies and definitions of information activities were undertaken. In his widely quoted report, Porat defined information and information activities as follows: “Information is data that have been organised and communicated. The information activity includes all the resources

consumed in the producing, processing and distributing information goods and services.” According to Porat, an economy can be separated into two domains: the first transforms matter from one form to another, the second transforms information from one pattern to another. The information domain can be further divided into the primary and secondary information sectors. The former includes firms that supply a bundle of information goods and services exchanged in a market context, while the latter includes public and private bureaucracies. (Porat 1977, 2 and 4) The primary information sector comprises such industries as R&D, computer manufacturing, telecommunications, printing, mass media, advertising, accounting, and education. As it can be seen in the list, Porat counts among information activities also information manufacturing besides information services. (ibid., 15 and 23)

The analysis of Porat has been one central starting point for discussions in which activities are categorised on the basis of “what is being handled”. In the studies targeted specifically to the service sector, goods, persons and information have commonly been regarded as the basic groups that may be handled. (Illeris 1989a, 29) This tri-partition was also one of the categorisations that Miles et al. used when they specified the concept of KIBS for the first time. They interpreted the classification as a description of the different types of production processes in services, and specified the groups as follows (Miles et al. 1995, 23-24):

- physical services (domestic services, catering, retail trade, post, laundries, hotels, repairs, wholesale trade, physical distribution, storage)
- person-centred services (welfare, hospitals, health, medical education, barbers etc.)
- information services (general administration, broadcasting, entertainment, real estate, telecommunications, banking, insurance, legal services, engineering and architectural services, accountancy, miscellaneous professional services).

Porat already used in his analyses the concepts of knowledge and learning in addition to the concept of information (Porat 1977, 22)<sup>15</sup>. However, he did not make a clear distinction between information and knowledge. This distinction became stressed in the 1980s, interest in “knowledge companies” and their management (e.g. Sveiby and Risling 1986, 10-13 and 23-24) being a significant contributor to the specification of the nature of knowledge apart from that of information. Starbuck was one of the first who specified the central characteristics of knowledge-intensity and the knowledge-intensive firm (KIF). According to him (Starbuck 1992, 716-719):

- Knowledge is a stock of expertise, not a flow of information. Some activities draw on extensive knowledge without processing large amounts of current information (e.g. management consulting).
- Knowledge-intensity refers to esoteric - exceptional and valuable - expertise instead of widely shared knowledge.

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<sup>15</sup> According to Porat (1977, 22): “The end product of all information service markets is knowledge. An information market enables the consumer to know something that was not known beforehand... to learn or relearn something...”

- An expert may not be a professional and a knowledge-intensive firm may not be a professional firm.
- Knowledge may not be in individual persons, but can also be found in capital and in equipment, firms' routines and cultures, and in professional cultures.

The analysis by Starbuck covered all kinds of knowledge-intensive companies, i.e. various 'service KIFs' and 'product KIFs' (ibid, 727), not particularly business services. Therefore it differs from the definition of KIBS especially regarding the significance of professionalisation (see footnote 16 in the following sub-chapter). The difference between information and knowledge is, however, an element that Miles et al., too, considered essential for understanding the role of KIBS. According to them, KIBS are a part of information services, but they differ from those services that merely store or transport information. Knowledge is not just organised information, but it involves the ability to organise information, as well as the results of applying that ability. Knowledge is a matter of learning, and knowledge transfer typically requires more interaction than information transfer. Thus the attribute of knowledge-intensity involves the fostering of knowledge development through learning in networking. (Miles et al. 1995, 15-16 and 25)

According to Miles et al., knowledge-intensification in the sense described above is a trend of the whole economy; all economic sectors are becoming more knowledge-intensive in their production processes. This is demonstrated by such phenomena as the growing dependence of economic activity on high-level skills and training, research and development and marketing activities. A heightened pace of innovation is one consequence of these phenomena. Services that are fundamentally concerned with technology and innovation are key elements of the trend of knowledge-intensification. Correspondingly, institutions that promote the generation, diffusion and accumulation of knowledge within economic systems are essential for innovation and growth. KIBS are such institutions; they are both a manifestation and a reinforcing factor of the knowledge-intensive economy. Thus knowledge-intensive services were interpreted by Miles et al. to be primarily business services. However, they pointed out that, in the future, consumption might also feature as an arena for knowledge-intensive services. The definition of particularly knowledge-intensive sectors is a relative affair: they will simply be those sectors that are more knowledge-intensive at a given moment. (Miles et al 1995, 10-11 and 17)

An important service taxonomy from the viewpoint of KIBS is that presented by Soete and Miozzo in 1989. This taxonomy separates services linked with science, technology and innovation as a category of its own. Behind the taxonomy of Soete and Miozzo lies Pavitt's earlier analysis; this analysis included both services and manufacturing and was targeted to describe innovation characteristics in different branches. Pavitt distinguished three types of companies: supplier-dominated, production-intensive and science-based companies (Pavitt 1984, 354). As a manufacturing-centred innovation concept was prominent in Pavitt's analysis, he classified the whole service industry as

supplier-dominated. However, Soete and Miozzo demonstrated that services could be found in all three categories. They presented the following taxonomy applied to the service sectors (Soete and Miozzo 1989, 15-19):

- supplier-dominated services:  
public services (education, health care etc.), personal services (hotels, restaurants, domestic services etc.), some distributive services (retail trade)
- production-intensive/scale-intensive services and network services:  
scale-intensive service production (client service, information processing etc.), services dependent on physical networks (transport, wholesale) or on information networks (finance, insurance, communications)
- science-based services and specialised technology suppliers:  
firms which have innovation activities of their own, using and developing new technologies (software, specialised business services).

Especially researchers who emphasise the linkages of KIBS to innovation have often referred to the categorisation described above and used its last category as the basis for defining KIBS (see e.g. Hipp 2000, 153; Howells 2000, 9).

For the definition of KIBS, the contribution of the general service taxonomies described in this sub-chapter is the clarification and to some extent operationalisation of the concepts of knowledge and knowledge-intensity. However, because the knowledge-related categories are in these taxonomies only a class among other classes, they are described on quite a general level. The distinction between business and consumer services is not explicitly included, either. Thus these taxonomies are not as such sufficient for the definition of KIBS. In the more detailed definitions, the special nature of KIBS has been handled from two main angles: by stressing the high proportion of expert labour in KIBS, or by bringing out the contribution of KIBS to the knowledge formation and innovation processes. In practice these two definition methods are intertwined and many researchers have used elements of these both in their own KIBS definitions.

### **3.2.2 Expert labour and contribution to knowledge processes as defining criteria of KIBS**

In the first actual definition of KIBS Miles et al. (1995, 28) stated that they understand KIBS as services that:

- rely heavily upon professional knowledge. Thus their employment structures are heavily weighted towards scientists, engineers, and experts of all types<sup>16</sup>.

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<sup>16</sup> In addition to the high level of expertise, a high grade of professionalisation - manifested in memberships of professional associations and in the active role of these associations - is characteristic of many of the KIBS branches. Among common activities of professional associations are e.g. training and awarding professional qualifications and accreditation. In some branches they act as entry barriers and may also run other self-regulatory systems, like price setting and recruitment networks (Miles et al. 1995, 28; see also Miles and Boden 2000, 171).

- either supply products which are themselves primarily sources of information and knowledge to their users (e.g. measurements, reports, training, consultancy), or use their knowledge to produce services which are intermediate inputs to their client's own knowledge-generating and information-processing activities (e.g. communication and computer services).
- have as their main clients other businesses (including public services and the self-employed).

The connection of KIBS to emerging technologies and to information technology in particular played a central role with Miles et al. and, based on this, they divided KIBS into two main groups (ibid, 28-30):

- traditional professional services, liable to be intensive users of new technology (KIBS I) and
- new technology -based KIBS (KIBS II).

In this categorisation the distinction between the first and the second groups lies mainly inside the KIBS branches: in many branches some services are linked with new technology, while some are not (see Table 3). In later studies a somewhat simpler and slightly differently focused division into technology-based KIBS (T-KIBS) and into non-technological KIBS has become common. It has been applied especially in studies where the linkages of KIBS to innovation have been emphasised. The high propensity of T-KIBS to undertake innovations has been highlighted in these contexts (den Hertog and Bilderbeek 2000, 229; Howells 2000, 9; Miles 2001, 13). Non-technological KIBS are less well known; this group is sometimes called "managerial/business-based KIBS" (Werner 2001, 50).

Unlike the division into KIBS I and KIBS II, that between T-KIBS and non-technological KIBS allows examination according to branches of industry (see e.g. Werner 2001, 51). All in all, most of the studies in which the aim has been to list KIBS more specifically have been based on an industry-based analysis. The great advantage of this approach is that it lends itself to a relatively easy operationalisation of the KIBS concept and to utilisation of statistical categorisations and databases. In industry-based studies the defining criteria of KIBS are the first and third item in the definition by Miles et al.: the high degree of expert labour, and businesses as clients. In the practical procedure, all statistical classes of business services form the starting point. From this basic group are then selected "knowledge-intensive" sub-groups. The selection can be done systematically by using occupational or educational indicators to describe the proportion of experts in the employment structure of different industries; in some studies the level of wages has also been used<sup>17</sup>. However, it is more often the researcher's own discretion rather than systematic criteria that has been used as the basis for a solution. Table 3 gives examples of which

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<sup>17</sup> The level of wages is not very often used in empirical outlining of KIBS branches. However, many researchers have pointed out that labour costs and wages are high in most KIBS due to the scarce occurrence of the skills needed (e.g. Miles 2001, 19). The study of Kasanko and Tiilikka (1999, see pp. 54-55 and 63 in particular) can be cited as an example of a study in which the criterion of the level of wages has been applied. In this, the object of study was not, however, merely KIBS, but all knowledge-intensive services.

branches have been counted among KIBS in various studies. The classification of Miles et al. into KIBS I and KIBS II is also included in the Table, although it is not an actual categorisation according to industry.

Table 3: Industries and services included in KIBS by different studies

	<b>Industries and services included in KIBS</b>
Miles et al. 1995, 28-30	<p><i>KIBS I</i>: marketing/advertising; some financial services (e.g. securities and stock market -related activities); accounting and bookkeeping; legal services</p> <p><i>KIBS II</i>: computer networks/telematics (e.g. VANs, on-line databases); some telecommunications (especially new business services); software; other computer-related services (e.g. facilities management); technical engineering; R&amp;D consultancy and 'high-tech boutiques'.</p> <p>The following services belong to KIBS II if they involve new technologies and KIBS I if they do not: training; design; office services (excluding 'physical' services like cleaning); building services (e.g. architecture, surveying, civil engineering); management consultancy; environmental services (excluding services based on old technology, e.g. elementary waste disposal)</p>
Hermelin 1997, 9	Law firms; firms of accountants and auditors; computer consultancy and computer service companies; architect's offices; construction and other engineering consultancy companies; companies for technical testing and analysis; advertising and marketing companies; market research firms; business and management consultancy companies
Kautonen et al. 1998, 37	Legal, financial and management consultancy; computer and related services; technical services and technical testing; R&D services, industrial design and patent services; education in the private sector
OECD 1999, 2	Computer software and information processing services (hardware consultancy, software consultancy and supply, data processing, database services); R&D and technical testing and analysis; marketing services (market research and public opinion polls, advertising); business organisation services (management consultancy and labour recruitment); human resources development services (adult and other vocational education, job training and vocational rehabilitation)
Strambach 2001, 54	data processing, software development, hardware consultancy; management consultancy, tax consultancy, auditing; technical consultancy, technical services, engineering services; advertising, marketing, communication services
Werner 2001, 51	<p><i>technological KIBS</i>: R&amp;D on medical sciences; R&amp;D on other natural sciences; R&amp;D on engineering and technology; civil engineering activities; structural engineering activities; heating, plumbing and air-conditioning design; electrical engineering design; mechanical and process engineering design; other architectural and engineering activities and related technical consultancy; technical testing and analysis</p> <p><i>KIBS for computing and software</i>: hardware consultancy; software consultancy and supply; data processing; database activities</p> <p><i>non-technological KIBS</i>: legal advisory activities; legal representation activities; advisory activities concerning patents; other legal activities; auditing activities; market research and public opinion polling; business and management consultancy activities; town and city planning; advertising agency activities; translation and interpretation activities; industrial design</p>



Table 3 shows that the services belonging to KIBS have been defined according to very different accuracy levels. Some researchers have used the most accurate statistical classification possible (ISIC 5-digit level) and picked up those individual sub-sectors from the business service categories that they have regarded as knowledge-intensive. Others have applied the broadest possible classification that can still mainly discern KIBS from other business services (ISIC 3-digit level). Many studies have combined broader and more specific classifications; in addition, most researchers have made groupings of their own from statistical categories. Despite these differences, there is a fairly wide consensus on the inclusion of the following broader categories of business services in KIBS: computer and related activities; R&D services; legal, financial and management consultancy; advertising and marketing services; and technical services. In most studies, such “routine business services” like renting, security, industrial cleaning, maintenance and repair are excluded (cf. Strambach 2001, 53-54).

Besides this practical agreement and other advantages mentioned earlier, it is important still to consider the problems that are related to an industry-based approach and to the often-related statistical way of looking at KIBS. The first problem concerns the level of analysis: many KIBS can be discerned only by using the most detailed original material, not published statistics. Secondly, at those detailed levels that are often needed for KIBS studies there are national variations in the classifications (cf. footnote 11 in Chapter 3.1.2) Thirdly, some KIBS branches, e.g. legal services, also comprise a great number of consumer services. Fourthly, there are obviously KIBS activities in other statistical categories outside the categories of business services. Some of them can be relatively easily added to business service categories. For example, training in the private sector, which belongs to the main category of education, has in some studies been linked with KIBS (see Table 3). Many important activities are, however, impossible to discern in statistical analyses. The growing consulting activities of investment and commercial banks serve as an example (cf. Sayer and Walker 1992, 79).

The second point in the definition by Miles et al. - the contribution of KIBS to information and knowledge processes - has been stressed and advanced particularly in studies that have focused on the innovation connection of KIBS. In recent years this point of view has formed the core of KIBS research, and its results will be dealt with in detail in Chapter 6. In this context, only the most central definitions applied will be brought up. Hipp (2000, 154) defines the feature of “knowledge-intensity” in KIBS as “the capability to integrate different sources of information and knowledge in the intra-firm’s innovation process”. According to her, “KIBS are characterised by the ability to receive information from outside the company and to transform this information together with firm-specific knowledge into useful services for their customers”. Gallouj (2002, 264) states the same thing in a slightly different way: “...the activity of KIBS providers consists of placing at the disposition of clients capabilities for processing information and knowledge.” Gallouj emphasises that although KIBS are closely connected with innovation activity, they should not be identified with innovation

services. KIBS are innovation services when there is a clearly recognisable innovation process to which the services relate (ibid., 276 and 279; cf. Chapter 6.5 for more details on this).

Based on her definition, Hipp (2000, 154-155) has presented an industry-independent way of operationalising KIBS. She criticises industrial classifications and qualification indicators due to the statistical problems presented above. Based on the classification by Soete and Miozzo, Hipp considers a central criterion for the knowledge-intensiveness of a firm its linkage to the science base. She counts among KIBS the firms whose customers come either from manufacturing or services, and who use universities or other research institutes as important or very important knowledge sources. The linkages of KIBS to scientific institutions are verified with empirical studies, e.g. with an enquiry. (ibid., 167) As a result of this method, the KIBS identified are mainly technology-oriented companies. Hipp herself admits that the definition does not adequately capture low technology-intensive business services, although these can also be knowledge-intensive. Low technology-intensive companies are usually only loosely linked to scientific institutions due to the scarcity of research programmes targeted to them. (ibid., 163-164; see also Chapter 6.5 in this study)

Regardless of the emphases of definition, the starting point of most researchers has been that KIBS are *firms* or *companies* (e.g. Gallouj 2002, 256; Hermelin 1997, 9; den Hertog and Bilderbeek 2000, 227; Hipp 2000, 167; Miles 2001, 4). Recently this approach, too, has given rise to debate. The trigger to this debate is the fact that activities largely similar to those of KIBS companies can be found in some public organisations, and ancillary to the main activity in other firms. In the public sector there are functions of the KIBS-type especially in organisations that seek to support and promote innovation activities. These are usually called *research and technology organisations (RTOs)*. (Hales 2001, 1). Moreover, as already stated in Chapter 3.1.2, business services are provided also by other firms and organisations than those specialised in them. This applies to knowledge-intensive services as well: activities of the KIBS-type are carried out *inside client firms*. These intra-firm activities are in close interaction with KIBS companies in two ways: firstly, KIBS provide their services most often in close cooperation with the client whose internal services function as the recipient organisation of the services provided by KIBS. Secondly, KIBS have only partly been set up as originally independent firms; their establishment also results from the outsourcing of intra-firm knowledge-intensive activities. (See the later chapters of this study, especially Chapters 5.3 and 6.5.)

In recent years more and more interim forms of both public and private, as well as of internal and external services, have emerged. Traditionally, RTOs have referred to “organisations with significant core government funding (25% or greater) which supply services to firms individually or collectively in support of scientific and technological innovation and which devote much of their capability (50% or more of their labour) to remaining integrated with the science base” (Hales 2001, 4). In some countries public funding and government involvement

in RTOs have, however, been cut down to such extent that they have become "semi-public" or "private-non-profit" (ibid., 4). Even in the private sector, KIBS are not the only providers of knowledge-intensive services. Besides the fact that the client companies produce certain services in-house for themselves, they offer these services to other companies, too. This type of service provision is becoming more and more common along with the continuously increasing network relationships between firms. In networks, information and knowledge are provided both on a profit and a non-profit basis; e.g. Lundvall and Johnson have paid attention to the latter - "information as a gift" (1994, 29)<sup>18</sup>.

Due to the development described above, some researchers have proposed that, instead of an identification of service-suppliers at the *institutional* level, the *functions* furnished by these services need to be mapped out. Hales, who is a prominent advocator of this perspective, has examined especially the relationships between the public and private knowledge-intensive services. He regards the terminology in use as outdated in the case of RTOs, and as imprecise in the case of KIBS. According to him, RTOs and KIBS are differently governed institutions, whose service content is to a substantial degree the same and still becoming more similar. Under the pressure of reduced public funding, RTOs increasingly operate as KIBS firms, or market-oriented activities developing in RTOs are delegated to spin-offs in the form of KIBS firms. (Hales 2001, 1-2, 16 and 55) According to Hales, the commercialisation of RTOs is one example of the "KIBSification" of the economy. Another example is the change in governmental funding increasingly away from institutional funding towards funding on the functional basis, i.e. towards targeted contracts and programmes that can be implemented by public, private or hybrid organisations. The third phenomenon reflecting KIBSification is that KIBS compete in areas where RTOs traditionally have had a privileged status: e.g. in service contracts for government departments. (ibid., 30)

The strength of the functional approach is its dynamic nature: it has highlighted important on-going change processes in the field of knowledge-intensive services. The analyses made on the basis of this approach have clarified the framing of questions and correspond to observations in practical life. On the other hand, empirical studies carried out on the basis of the functional approach can primarily be conducted as case studies only. Studying the quantitative development of services of the KIBS-type as well as other issues requiring wider comparisons is very difficult if the institutional perspective is wholly excluded. Especially in the case of statistical material, this leads to occupation-based surveys that are only indicative because business services cannot be discerned from other expert services in them (cf. Chapter 3.1.2). Furthermore, various kinds of institutions providing knowledge-intensive services possess important characteristics of their own that should also be studied.

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<sup>18</sup> MacPherson (1997, 61) found in a survey that more than 60% of the respondent industrial companies had frequently obtained knowledge-based inputs from the technical units of other manufacturing companies, almost always on an informal or a non-market basis.

In fact, there is no need to juxtapose the functional and institutional approach: knowledge-intensive activities and functions can be studied both as a whole and in more detail in so far as they are provided in certain institutional frameworks. A project running until the year 2005, launched by OECD and examining both KIBS, RTOs and in-house services under a joint name "Knowledge-intensive Service Activities KISA", is largely based on this kind of thinking. The project analyses the interaction of differently produced services and the ways of ensuring the best possible support for the innovation activities of the client companies. (OECD 2002a, 3-4 and 9) KISA are defined as "service activities provided either internally or externally to a firm, in manufacturing or service sectors, in combination with manufactured outputs or as stand-alone services...The activities will be analysed as mixes of services provided by public and private providers...Some providers will be hybrid public-private." (ibid., 3; see also Miles 2003, 17)

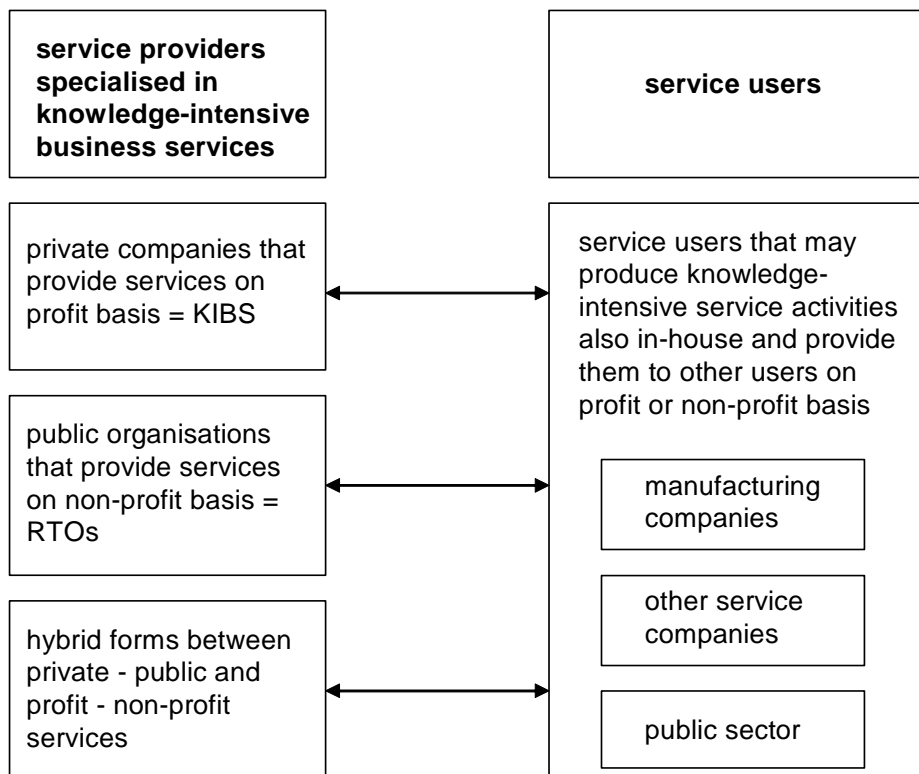
### **3.3 Summary of definitions and the definition used in this study**

Knowledge-intensive business services (KIBS) are part of a larger group of services, business services. The business services can be defined as services that firms or organisations provide to other companies or organisations and that are intermediate by nature, i.e. they are not targeted to end-use but are inputs in the manufacturing processes or in the production of other services. Earlier these services have also been referred to as producer services. However, usually the term "producer services" has been used to refer to a somewhat larger group of services: various distributive services like transportation, storage and trade, which rarely have been regarded as business services, have been included in producer services.

The service content and function differentiate KIBS from other business services. KIBS offer information and knowledge to their clients, but it is essential that they do not merely store or transfer information, but foster the development of knowledge through learning in networking. The concept of knowledge-intensity refers to the latter in particular. KIBS have been defined and operationalised in more detail in two main ways: Firstly, the high proportion of expert labour has been used as the defining criterion of KIBS. On this basis there is fairly wide consensus on the inclusion of the following categories of business services in KIBS: computer and related activities; R&D services; legal, financial and management consultancy; advertising and marketing services; and technical services. The other main defining criterion has been the contributing role of KIBS in the knowledge formation of their clients. This definition has been used above all in the theoretical analyses of the nature and functioning of KIBS, especially in studies focused on the linkages of KIBS to innovation.

Knowledge-intensive business services, like business services in general, can be examined as institutions - as firms and organisations - or as activities and functions. In the majority of studies, the concept of KIBS has been used to refer to companies. KIBS have been limited to denote firms that are specialised in the provision of knowledge-intensive services and sell these services on the market. In practice the studies have most often been based on industries. Still, the studies have paid attention to the fact that services similar in their content and function to those provided by KIBS companies are also provided by certain public organisations (in research and technology organisations RTOs), as well as ancillary to the main activity in manufacturing firms, other service firms and in the public sector. In addition, more and more intermediate forms of the services provided in different ways have emerged in recent years. The position of KIBS in the whole of knowledge-intensive business service activities is shown in Figure 2, which presents in a simplified form the providers and users of these services.

Figure 2: Providers and users of knowledge-intensive business services



In this study, too, KIBS are defined on an institutional basis as companies and industries. The background of this solution is not only reliance on the general practice prevailing in the studies of this sector, but above all the following reasons related to the framing of questions and material used in this study:

- the special object of the study are the development prospects of knowledge-intensive services provided in the framework of private entrepreneurial activity
- literature on the long-term development of business services and KIBS occupies a central position in the study as the basis for anticipation; this literature mainly relies upon the institutional approach
- the study also utilises statistics in which business services can be differentiated on an industry basis only.

All in all, the original KIBS definition by Miles et al. constitutes a very good basis for this study. It can still be specified by applying the definitions of the functions of KIBS formulated in innovation studies and by restricting more clearly the provider and user of services. Thus KIBS are defined in this study as follows: *KIBS are business service companies, i.e. private service companies which sell their services on markets and direct their service activities to other companies or to the public sector. They are specialised in knowledge-intensive services, which means that the core of their service is contribution to the knowledge processes of their clients, and which is reflected in the exceptionally high proportion of experts from different scientific branches in their personnel.*

In operationalisation of KIBS as well, this study relies on previous research tradition; the starting point for the operationalisation are the earlier listed standard industrial classes in which researchers have mainly been unanimous. A statistical operationalisation on the level of the main KIBS categories is shown at the end of Chapter 4, where the past development of KIBS has been presented on an international level. In the empirical part of the study, KIBS have been operationalised both in the statistical description of the Finnish KIBS (Chapter 8.1) and when selecting the companies to be interviewed (Chapter 8.2). In this connection, it has been possible to use the most accurate level of industrial classification, on the basis of which the main KIBS categories have been divided into smaller categories and to some extent regrouped. In addition to the most common KIBS branches, labour recruitment services and some individual branches, such as industrial design from the category of other business services, have been included. Moreover, of the main category of education, the categories that concern training in the private sector have been included (cf. Table 3 and the related discussion). The whole categorisation used is shown in Appendix 1.<sup>19</sup>

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<sup>19</sup> The categorisation is based on the standard industrial classification preceding the present one (TOL 95, based on ISIC Rev. 1 and NACE Rev. 3), which was in force upon start-up of this study.

## **PART II LONG-TERM DEVELOPMENT OF KIBS AND THEIR ROLE TODAY**

### **4 GROWTH OF PRODUCER SERVICES, BUSINESS SERVICES AND KIBS**

This chapter together with Chapter 5 aims to answer the first research question: to analyse the development of KIBS in the long term. The chapter in hand focuses on description of the birth and growth of KIBS, the following chapter on explanations given for the growth. As stated earlier, the estimates of the quantitative growth of KIBS have to be made mainly on the basis of statistics that concern the broader categories of producer and business services. Even this statistical material is scattered until the 1990s. From the last ten years more systematic data exist, and from recent years data are available also separately on KIBS in a few countries. Besides statistics, information describing KIBS can be found in the historical surveys that analyse the emergence and early stages of these services as occupations and industries. We begin with these surveys and after them move to statistical considerations.

#### **4.1 Emergence of KIBS as occupations and as industries**

Many KIBS professions date back hundreds of years. Legal services and engineering have existed in some form for thousands of years. However, the history of KIBS as systematic entrepreneurship and as industries is clearly shorter: its early stages can be dated back to the end of the 18<sup>th</sup> and the beginning of the 19<sup>th</sup> centuries. The emergence of many KIBS industries is linked with the history of the Industrial Revolution that began towards the end of the 18<sup>th</sup> century. Information on the early development of KIBS is sector-specific. There are no historical surveys dealing jointly with these sectors, and it is not possible to carry out a comprehensive survey within the framework of this study, either. The following will present a brief exemplary description of the birth and early stages of some central KIBS sectors - advertising agencies, accountancy, management consultancy, research and development, engineering offices and information technology services. The description also aims to give a picture of the kinds of larger societal phenomena that have been in the background of the emergence and early growth of these sectors.

When considering the oldest business service industry, advertising is generally cited; its origins can be traced back to the 1820s. It was not, however, until the 1880s that advertising agencies really came into their own and became recognised as a specialised economic activity. At this stage, advertising had become more common and more complex to the extent that advertisers, who had previously retained the activity within their own organisations, increasingly

turned to specialised agencies. The important factors behind the establishment of advertising agencies were the growth of mass consumption goods, the development of brand names, and the establishment of popular newspapers, which gained much of their revenue from advertising. By the turn of the century advertising had become well established as an industry, and many of today's international agencies were founded between the 1910s and 1930s. The increases in the production of consumer goods as well as the development of communication media have later, too, been significant contributors to the growth of the advertising market. One of the strongest growth phases of advertising was after the Second World War in the years 1946 to 1960. The industry grew in line with the rising levels of concentration and competition in consumer goods markets and with the advancement of radio and television. (Bearse 1978, 563; Fraser 1981, 138 and 146; Roberts 1998, 106; Sinclair 1987, 6-8 and 109-110)

Accountancy is one of those KIBS professions whose evolution has a long pre-history: crude accounts have been kept since antiquity and book-keeping was practised in chanceries and merchant houses throughout medieval Europe. Along with the growth in both size and complexity of commercial activity, brought about by the Industrial Revolution, necessary accountancy performed by the entrepreneur or merchant with the assistance of his own clerks was no longer sufficient. As businesses expanded, the need for outside investment increased and with it the need for more sophisticated book-keeping. Auditing developed when the sale of shares to the public was initiated to finance large investments, and supervision was called for in order to prevent fraudulent use of shareholders' money. Especially from the 1840s onwards the growth of railways and the related investments boosted the development of both book-keeping and auditing. Compulsory auditing spread from the railroads to the banks, and as early as the turn of the 20<sup>th</sup> century the activity was made obligatory in some countries (e.g. in Great Britain) in the case of all public companies. (Jones 1981, 19, 24 and 28-32; Roberts 1998, 120-121)

The history of management consultancy is closely interwoven with the development of management itself, an institution that emerged when the management function was separated from that of ownership. The foundations of modern consultancy practices have two main trunks: work measurement and accountancy. The former trunk is the older of these two: it can be traced back to the turn of the 20<sup>th</sup> century when Frederick W. Taylor and some other pioneers began their time and motion studies. The early practitioners did not yet describe themselves as consultants but were usually known as industrial engineers. They concentrated mainly on the productive organisation of people rather than on machines and finance. The first consultancy subsidiaries formed by accountancy firms were established in the 1920s. During the 1920s and 1930s other major international consultancy firms also were founded; some of these are still operating. By the beginning of the Second World War, the principles of management consultancy were well established. In the 1950s consultants were given more and more comprehensive assignments in plant layout, work study and production control; consultants also joined the marketing arena. Towards the end of the decade personnel recruitment became an important activity, and



big international consultants began to focus on high-level strategic and organisational issues. The 1960s were a time of remarkable expansion in consultancy. The growth suffered a temporary decline along with the economic crises in the 1970s, but took an upturn again in the 1980s. (Rassam and Oates 1991, 2-6; Tisdall 1982, 9, 14, 31 and 41-43)

Besides having a decisive effect on the non-technological KIBS sectors described above, the Industrial Revolution also gave an impetus to the development of technology-based KIBS sectors. The specialisation and professionalisation of research and development (R&D) was the first important phenomenon to show this. The contact between science and industry, as well as innovative activities within firms, existed from the earliest days of modern capitalism. However, due to the small size of companies, scientific activities were unsystematic in the early stages and dependent on individual enthusiasts. As technology became more complex, public sector activities gained more importance and firms grew larger. University research expanded, both governmental laboratories and independent contract research institutes were set up, and in-house R&D activities within firms became more common. Initially, the usual way of carrying out industrial R&D was to contract it out. In the 1870s the first in-house R&D laboratories were developed in the German chemical industry. The model turned out to be very successful, and during and after the Second World War the specialised R&D department became a characteristic institution in most branches of manufacturing in the leading countries. (Freeman 1992, 169-170, and 175; Freeman 1995, 8-9; Howells 1999a, 19-20; Teece 1988, 257-258) Since the 1970s a partial reversion towards the earlier model has been visible: there has been significant growth in the amount of contracted-out research in advanced economies. Due to the close connection of R&D with the core competences of a firm, outsourcing of activities in this field is, nevertheless, a particularly sensitive issue and it has stimulated a great deal of discussion. The use of external services is easiest in those parts of research processes that technological progress has made possible to automatise and standardise, such as testing. (Howells 1999a, 22-23)

Engineering consultancy services as a specialised field of activity emerged during a later phase of industrial development, when a need for innovative solutions and improved design for construction projects and plant layout became apparent. The concept of engineering consultancy was applied for the first time in the years 1919 - 1920, when the first industrial design organisations were established in Germany and the US. These organisations aimed at gathering various professionals dealing with aesthetic concerns and industrial materials and techniques. The markets for engineering consultancy are closely linked with the development of the manufacturing industries and construction, and business in this KIBS sector tends to fluctuate with the cycles of growth and stagnation in manufacturing in major markets. Expansion and decline of public spending on infrastructure such as transportation or environmental facilities are also important for generating demand for engineering services. Still after the Second World War the majority of engineering firms were small. The concentration of the sector began during the 1970s; the backbone of US firms,

which continue to dominate the industry, dates back to these times. The extent to which engineering design is purchased from specialised firms or is integrated in public organisations and private firms as engineering units is a matter of national tradition. Independent consulting engineering firms have a long tradition e.g. in the US and the UK. Similarly, the contents of engineering professions - e.g. the relationship between design and implementation or between engineering and architectural design - vary from nation to nation. Furthermore, specialisation in certain sub-branches varies: In the US the biggest sector of engineering consultancy is industrial and process design, which contains, among others, the internationally most prominent engineering services to the oil and petroleum industry. In large European countries design for the transport sector is the most important sub-branch of engineering services. (Baark 1999, 61-63; Pillal 1998, 95-96)

The growth of information technology (IT) services is crucially dependent on the advancement of the computer. As such, the sector has a shorter history than the other KIBS sectors, from the beginning of the 1960s. The development of the computer and the rapidly rising importance of information and communication technologies (ICTs) have brought about the need for various services to facilitate the optimum use and operation of such technologies. Due to the expensiveness of the first computers, computer facilities and additional services were offered mainly by specialised bureaux at the early stages of development. The biggest companies also had internal computer departments, which could sell their services to other firms as well. Eventually, some of these departments were externalised to become separate computer service firms. The actual computer service markets emerged at the turn of the 1960s and 1970s, when software, which had up to then been offered as a sales support for hardware, started to be sold separately. After this, independent software vendors developed rapidly into important suppliers of computer services. However, many hardware manufacturers still play a central role in the service markets. IT consulting firms, the most important of which are multisectoral consultants that have developed on the foundations provided by traditional accountancy, emerged as the third group of service providers at the beginning of the 1980s. (Roberts 1998, 132-133; OECD 2002b, 117-120)

## **4.2 Quantitative data describing the growth**

Although many KIBS industries had come into existence already in the 19<sup>th</sup> century, their development was still so embryonic that they could not be separately identified in the earliest statistical surveys of the various industries. Even the wider category of producer services did not feature in the first reviews, which e.g. in the US were collected from the period 1870 to 1920 and which concerned labour development in the different industries. The surveys themselves were at a very broad level at that stage. Since 1920 there are data on the share of producer services in the labour force in the most important

industrialised countries (US, Canada, England, Germany, France, Italy and Japan). In 1920 the share varied in these countries between one and four per cent and did not considerably increase before the 1950s. (Browning and Singelmann 1978, 491-492 and 507)

The large-scale visibility of producer services has been manifested since the 1950s in the United States, and by the 1960s in the majority of the West-European countries (Moulaert and Daniels 1991, 1). During the 1950s, producer services were already found to have grown in the United States faster than the average level of economy (Greenfield 1966, 30). By the beginning of the 1970s, these services had achieved the highest rate of employment growth among all sectors of advanced economies (Coffey and Bailly 1991). At that stage, the share of producer services of the total labour force amounted to 9.3% in the US, and in the West-European countries and in Japan to a little over 5% (Browning and Singelmann 1978, 507).

Since the 1950s several statistical surveys on the development of producer services have been conducted. In these the figures presented vary to some extent, depending on the source and the definition of producer services, but they all show an exceptionally dynamic growth. According to Greenfield (1966, 22), in the US the overall growth of employment during the period 1950 to 1960 was 21.3% in the producer service sector, compared with 15.2% in all industries. The study by Tschetter (1987, 31-32) of the following decades - likewise in the US - indicates growth figures exceeding the average level of the economy both in employment and in production:

Table 4: Growth of employment and output in producer services compared with all industries in the US during selected periods 1959 -1986 (Tschetter 1987)

Industry	Average annual growth of employment			Average annual growth of output		
	1959-72	1972-82	1982-86	1959-72	1972-82	1982-86
Producer services	6.2%	6.2%	8.5%	..	4.9%	7.2%
All manufacturing and service industries	2.5%	2.0%	2.7%	..	2.0%	4.1%

In some statistical surveys made in the US, certain KIBS sectors have been presented as categories of their own since the 1950s. In 1970 these categories - engineering, accounting and legal services - formed each around 0.4% - 0.5% of the US total employment. In the aggregate of producer services the other sectors, such as the banking, insurance and real estate services, were clearly more important (Browning and Singelmann 1978, 493) Yet the relative growth in the KIBS sectors was already noteworthy in the 1950s: from 1950 to 1960 the overall increase in engineering and architectural services in the US was as

much as 138.6%, that in the accounting, auditing and book-keeping 53.8%, in legal services 21.7% and in advertising 17.4% (Greenfield 1966, 22). In the 1970s, and especially in the 1980s, personnel supply services, management and public relations services, as well as computer and data processing services began to grow dynamically. Employment in these industries increased even faster than the average rate of the producer services, as shown by the Table below (Tschetter 1987, 32).

Table 5: Employment growth in some KIBS industries in the US during selected periods 1972 - 1986 (Tschetter 1987)

Industry	Average annual growth of employment	
	1972-82	1982-86
Advertising	2.8%	5.8%
Personnel supply services	9.6%	16.3%
Computer and data processing services	13.1%	12.8%
R&D laboratories	..	3.0%
Management and public relations	..	10.7%
Legal services	7.6%	7.2%
Engineering and architectural services	5.4%	4.3%
Accounting, auditing and book-keeping	5.6%	5.3%
All producer services	6.2%	8.5%

Results that showed the growth of producer services and individual KIBS sectors to be faster than the economy in general were also obtained in other industrialised countries; the growth figures were, however, usually somewhat lower than in the US. For instance, in the UK the annual growth rate of employment was from 1971 to 1981 2.9% in producer services, compared with 1.3% in all services. At the beginning of the 1970s, public services were still increasing more than producer services in the UK. After the mid-1970s, the growth of producer services accelerated and exceeded, relatively speaking, the growth rate of public services. During the period 1976 to 1981 alone, computer services increased in the UK by 42.6%, other professional/technical services by 40.1% and other business services by 39.2%. (Howells and Green 1986, 93-95 and 102)

Time series data more extensively comparable between various countries can be found from the end of the 1980s onwards. The most coherent information is available in a statistical survey by the OECD, which describes the development of employment and Gross Value Added (GVA) in the service sectors during the period 1989 to 1999 on the basis of the member countries' national accounts (OECD 2001). Data are shown on the most disaggregated level available, which in the case of the sectors concerned means that the sum figures describing the whole business services category have been obtained in most countries, but figures describing KIBS subgroups in only a few. Information for some countries

is available on the main category level only, where the real estate services have been summed with business services. In its survey, the OECD counts among business services those sub-branches that on the basis of the ISIC classification described above have generally been counted among this category: computer and related activities; research and development; legal, financial and management consulting; technical services; advertising; security activities and industrial cleaning. In addition, renting activities are in this survey considered to belong to business services. The years for which data are available vary by country, and due to this business services are best comparable with the other sectors in each country. Comparisons between countries can, however, be made in the case of those countries where the review years are the same or nearly the same.

Tables 6 and 7 present the percentage change of employment and Gross Value Added per year in the business services of different OECD countries during the 1990s and compare it with the change of all service sectors and of all industries. The share of business services of all services and of all industries, according to the most recent data, is also presented in the Tables. The sum figures on the business services are available from 20 OECD countries in the case of employment data, and in the case of value added from 23 countries. From nine countries employment data can be obtained only on the level where the business services are handled together with the real estate services; in the case of value added, the data are on this level in six countries. In the Tables the countries having only these more aggregated data have been compiled as a group of their own, and in the discussion the extent to which this information depicts the development of business services is evaluated. Turkey is the only OECD country included in the survey from which there are no data on business services available even on this more general level.

When examining first the employment change (Table 6) in countries where the data concern business services excluding real estate services, it can be stated that, except for Greece, business services have grown more than the service sectors or the whole economy in general. In most countries the difference is quite clear. The growth rate varies, however, from one country to another, even between countries having the same review period. By grouping the countries according to the length of the review period, the development can be summarised as follows:

- Of those countries on which data are available either for the whole or nearly the whole period, i.e. from the year 1989 to 1999 or to 1998, the average annual growth of business services has been biggest in Mexico (5.7%) and in the US (4.7%). In Finland, France and the UK the growth has been about 3% per year. In all of these countries business services have grown clearly faster than service sectors and the economy in general. Instead, in Japan the growth of business services differs only slightly from the general development of the service sectors.
- In the countries for which data are available from most of the 1990s, although individual review years vary, the annual growth of business

services has been highest in the Netherlands (9.0%)<sup>20</sup>. In other countries the growth has varied between 3 - 6% (Canada, Germany, Hungary, Iceland, Italy, Norway, and Sweden). The growth rate of business services also differs clearly from the overall level of service sectors and the entire economy in all countries mentioned. Denmark is an exception among the countries of this group: business services have grown only a little and their development does not differ remarkably from other services.

- High growth rates can also be seen in some of the countries for which data are available only from the latter half of the 1990s; such countries are Luxembourg and the Czech Republic. In some countries of this group the time-span of statistics is very short which means that carefulness is called for in the interpretation of the figures.

In the case of employment data, the development of business services is rather well depicted also by the figures in which real estate services are included. This conclusion can be made on the basis of examination of those countries in which data are available both on this more general level and separately on business services. In most of these countries, at least 85% of employment in the main category of real estate and business services is in sub-categories of business services. Countries from which data can be obtained only on the main category level, but covering most of the 1990s, are Australia, Austria, Korea and Poland. In all of these countries the growth of the real estate and business services has been high. Of the countries for which data are available concerning only a few years in the latter half of the decade, growth has been exceptionally high in Ireland.

Also the figures comparing the development of Gross Value Added in the OECD countries (Table 7) show that the annual growth of business services has been very considerable in many countries. However, the difference between these services and the general situation of the service sectors and of all economic sectors is not as clear as in the case of employment. In addition, measurement of the value added varies so much country by country that one must be careful when drawing conclusions in this respect (see the footnote 22). Finally, the main category level, which is the only source of information in some countries, illustrates much more poorly the development of business services in the case of the value added than in the case of employment. In many countries the real estate services cover about half of the value added of the main category of the real estate and business services.

There are great variations in the share of business services in the economy from one country to another. Table 6 shows that in the latter half of the 1990s

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<sup>20</sup> Several studies have paid attention to the exceptionally dynamic development of business services in the Netherlands. An interesting fact linked with this is the level of internationalisation of the Dutch business service sector. In addition to the multinational companies coming from such big countries like the UK, there are important multinationals of Dutch origin in the European business service markets. (Kox 2002, 83 and 88; Rubalcaba and Gago 2003, 84-85)

Table 6: Employment in business services compared to all services and to all industries in OECD countries: the average annual changes (%) in the 1990s and the share of business services on the basis of the most recent data (OECD 2001)<sup>21</sup>

Country	Average annual change of employment				Share of business services	
	Business services	All service industries	All industries	Years considered	Compared to all services	Compared to all industries
Canada	3.4 %	1.2 %	0.5 %	1989-96	9.3 %	6.9 %
Czech Republic	7.4 %	2.0 %	0.6 %	1995-99	10.1 %	5.0 %
Denmark	0.9 %	0.4 %	-0.1 %	1989-97	9.6 %	6.9 %
Finland	2.9 %	-0.3 %	-1.1 %	1989-99	10.8 %	7.1 %
France	2.8 %	0.9 %	0.0 %	1989-98	14.5 %	10.2 %
Germany	5.8 %	1.4 %	-0.3 %	1991-98	13.4 %	8.9 %
Greece	0.8 %	1.2 %	0.5 %	1995-99	8.4 %	4.8 %
Hungary	4.5 %	-0.3 %	-1.6 %	1992-98	6.8 %	4.0 %
Iceland	4.1 %	1.5 %	0.4 %	1990-97	8.5 %	5.5 %
Italy	3.7 %	0.5 %	-0.2 %	1992-99	13.5 %	8.8 %
Japan	1.9 %	1.5 %	0.7 %	1989-98	9.3 %	5.6 %
Luxembourg	11.8 %	5.1 %	3.8 %	1995-99	16.9 %	12.4 %
Mexico	5.7 %	2.7 %	2.4 %	1989-98	3.8 %	2.1 %
Netherlands	9.0 %	3.8 %	3.0 %	1993-99	20.5 %	15.0 %
Norway	3.0 %	1.3 %	0.7 %	1989-97	9.2 %	6.5 %
Spain	5.2 %	2.1 %	2.2 %	1995-97	9.2 %	5.8 %
Sweden	5.3 %	0.5 %	0.4 %	1993-99	11.1 %	8.1 %
Switzerland	3.4 %	1.7 %	1.4 %	1997-98	12.7 %	8.2 %
United Kingdom	3.3 %	1.2 %	0.4 %	1989-99	17.2 %	13.1 %
United States	4.7 %	2.0 %	1.5 %	1989-99	14.7 %	11.2 %
Australia*	5.0 %	1.8 %	1.1 %	1989-98	15.0 %	11.1 %
Austria*	4.8 %	1.1 %	0.0 %	1989-99	11.5 %	6.8 %
Belgium*	3.7 %	1.5 %	0.9 %	1995-99	15.8 %	11.7 %
Ireland*	15.3 %	6.5 %	5.5 %	1995-98	11.5 %	7.3 %
Korea*	8.7 %	3.9 %	1.0 %	1992-99	9.9 %	6.1 %
New Zealand*	4.0 %	0.8 %	0.6 %	1997-99	16.2 %	10.9 %
Poland*	5.8 %	2.2 %	1.0 %	1992-99	11.0 %	4.9 %
Portugal*	1.1 %	2.0 %	1.2 %	1995-97	11.1 %	6.4 %
Slovak Republic*	-0.5 %	3.8 %	2.4 %	1994-97	6.8 %	3.5 %

\* Real estate and business services

<sup>21</sup> The employment data are based on the number of jobs or persons employed or full-time equivalent jobs. From most countries data are available both on total employment and on employees. Because the working proprietors and self-employed workers, who are important in the business services, are included in the total employment statistics besides wage earners, the Table has been drawn up accordingly, wherever possible. From the Czech Republic, Mexico and the United Kingdom only data on employees can be obtained.

In the Netherlands, the calculation method changed in 1995, which in the case of business services meant a rise in the number of the labour force from 664 000 to 698 900. Due to this change, the growth figure given in the Table is too high. However, business services in the Netherlands have increased in all so much that the error does not affect the conclusion made.

Table 7: Gross Value Added in business services compared to all services and to all industries in OECD countries: the average annual changes (%) in the 1990s and the share of business services on the basis of the most recent data (OECD 2001)<sup>22</sup>

Country	Average annual change of GVA				Share of business services	
	Business services	All service industries	All industries	Years	Compared to all services	Compared to all industries
Canada	4.6 %	2.4 %	2.2 %	1989-99	9.1 %	6.1 %
Czech Republic	3.5 %	2.4 %	-1.1 %	1990-95	13.2 %	6.7 %
Denmark	3.8 %	2.3 %	2.0 %	1989-97	10.7 %	7.6 %
Finland	3.3 %	1.5 %	1.9 %	1989-99	9.6 %	5.8 %
France	2.1 %	2.3 %	1.7 %	1989-99	16.8 %	12.0 %
Germany	4.4 %	2.4 %	1.4 %	1991-98	18.9 %	12.6 %
Greece	2.5 %	2.6 %	2.8 %	1995-99	5.0 %	3.3 %
Hungary	3.1 %	3.6 %	4.5 %	1995-98	12.8 %	7.6 %
Iceland	6.6 %	5.7 %	5.0 %	1990-97	7.4 %	4.5 %
Italy	3.1 %	1.6 %	1.4 %	1992-99	12.3 %	8.0 %
Japan	8.4 %	2.3 %	1.8 %	1989-98	12.8 %	7.6 %
Korea	8.3 %	6.0 %	6.1 %	1989-99	7.4 %	3.6 %
Luxembourg	6.3 %	5.9 %	5.2 %	1995-99	11.0 %	8.3 %
Mexico	4.6 %	3.1 %	3.3 %	1989-98	6.4 %	4.2 %
Netherlands	7.9 %	5.6 %	4.4 %	1990-99	16.9 %	11.8 %
New Zealand	4.8 %	4.8 %	4.3 %	1989-95	8.2 %	5.3 %
Norway	6.5 %	3.7 %	4.1 %	1992-97	9.3 %	5.8 %
Slovak Republic	21.7 %	15.5 %	12.9 %	1994-98	10.4 %	6.1 %
Spain	5.0 %	2.6 %	3.0 %	1995-97	8.7 %	5.6 %
Sweden	5.8 %	2.5 %	3.3 %	1993-99	11.9 %	7.8 %
Switzerland	3.9 %	2.5 %	2.2 %	1997-98	10.7 %	6.8 %
United Kingdom	5.4 %	2.7 %	2.0 %	1989-99	16.6 %	11.4 %
United States	4.7 %	3.2 %	3.1 %	1989-99	12.2 %	9.1 %
Australia*	5.1 %	3.9 %	3.4 %	1989-99	31.5 %	22.3 %
Austria*	3.6 %	2.3 %	2.5 %	1989-99	23.6 %	15.1 %
Belgium*	3.7 %	1.8 %	2.2 %	1995-99	31.6 %	21.4 %
Ireland*	16.6 %	11.2 %	10.2 %	1990-99	35.0 %	21.1 %
Poland*	2.5 %	3.8 %	5.1 %	1992-99	13.1 %	6.9 %
Portugal*	2.4 %	3.1 %	3.5 %	1995-99	18.6 %	11.7 %

\* Real estate and business services

<sup>22</sup> GVA may be calculated at basic prices, factor costs, producer prices or market prices. The OECD data are in most countries calculated at basic prices. The figures of Japan, Korea, New Zealand, Switzerland and the US are at producer prices and the figures of Canada at factor costs. In the Netherlands, the data before 1995 are at market prices, after that year at basic prices.

GVA can also be expressed either at current or constant prices; an alternative to the latter are chain volume measures. The OECD data have been collected both at current and at constant prices/chained - in the Table the latter has been used when available. The data from Iceland, Ireland, New Zealand and the Slovak Republic are only at current prices. The figures are chain volume measures in Australia, France, Greece, Luxembourg, Norway, Sweden and the US; in other countries they have been calculated at constant prices. The reference year varies by country, the most common base being the year 1995.



the share of business services of the employment in all services varied in the OECD countries studied between 4% and 21% and of total employment between 2% and 15%. The shares were highest in the Netherlands and lowest in Mexico. Besides the Netherlands, the shares of business services were big in the UK, Luxembourg, the US and France; small shares were encountered, besides Mexico, in Hungary and Greece. The figures showing the share of business services of the value added in the service sectors and in all sectors are of the same order as the figures in the case of employment. The share of the GVA of all services varied between 5% and 19%, and the share of total GVA between 3% and 13% (Table 7). Also the highest and lowest shares are found largely in the same countries as in the case of employment. In Germany the significance of business services in the economy, measured by value added, is, however, higher than when measured by employment. In Germany the share of business services of the GVA of the service sectors was 18.9% in 1998; the corresponding share of the GVA of all sectors was 12.6%. Both shares were the highest compared to all the OECD countries studied.<sup>23</sup>

Only in four to five countries included in the OECD survey are statistical data so accurate that it is possible to study the KIBS branches separately from the other business services. In the case of employment, these countries are Finland, France, the Netherlands and the UK; in the case of value added, Canada as well. Even in these countries coherent data are only available from the latter half of the 1990s<sup>24</sup>. Figures 3 and 4 show the percentage change of employment and GVA in KIBS during 1995 to 1999 in the countries mentioned. The data for France and the GVA data for the UK cover only the years 1995 - 1998. The data are presented as average annual changes on the central KIBS branches, both by branch and summed-up; in addition, the development of KIBS is compared to all services and to all industries<sup>25</sup>.

Figure 3 depicting the development of employment shows that, when viewed as a whole, the KIBS sector has grown in the countries studied during the latter half of the 1990s clearly more than the service sectors or the economy in general. The growth has been faster in the small countries than in the big countries: in the Netherlands employment in the KIBS sector grew from 1995 to 1999 nearly 9% and in Finland over 8% per year, whereas the growth in the UK was about 4% and in France about 3%. However, it is to be noted that also total employment grew slightly faster in the small countries during the review period (and the French data cover a shorter period). Of the individual KIBS branches,

<sup>23</sup> The shares of business services in the economy have been compared here only concerning those countries that have data separated from real estate services. Countries having data only at the level of the main category of real estate and business services have, however, been included in the Tables 6 and 7.

<sup>24</sup> The development of KIBS in Finland will be analysed in more detail on the basis of national statistical sources in Chapter 8.1 as a background for the empirical part of the study.

<sup>25</sup> In the UK the employment data on the KIBS sub-groups are available only concerning employees - not concerning total employment. Due to this, the data by employee have been used in this context throughout. The GVA data are based on constant 1995 prices except in Canada where the reference year is 1992. The UK data of the GVA of some KIBS sub-groups (consulting, technical and advertising services) are reported in the OECD survey only on current prices. These have been changed to constant prices by using the inflation coefficient of all business services. There are no data on the value added of the R&D services from Canada.

Figure 3: Average annual change (%) of employment in KIBS branches, in all services and in all industries in some OECD countries 1995-1999 (in France 1995-1998)

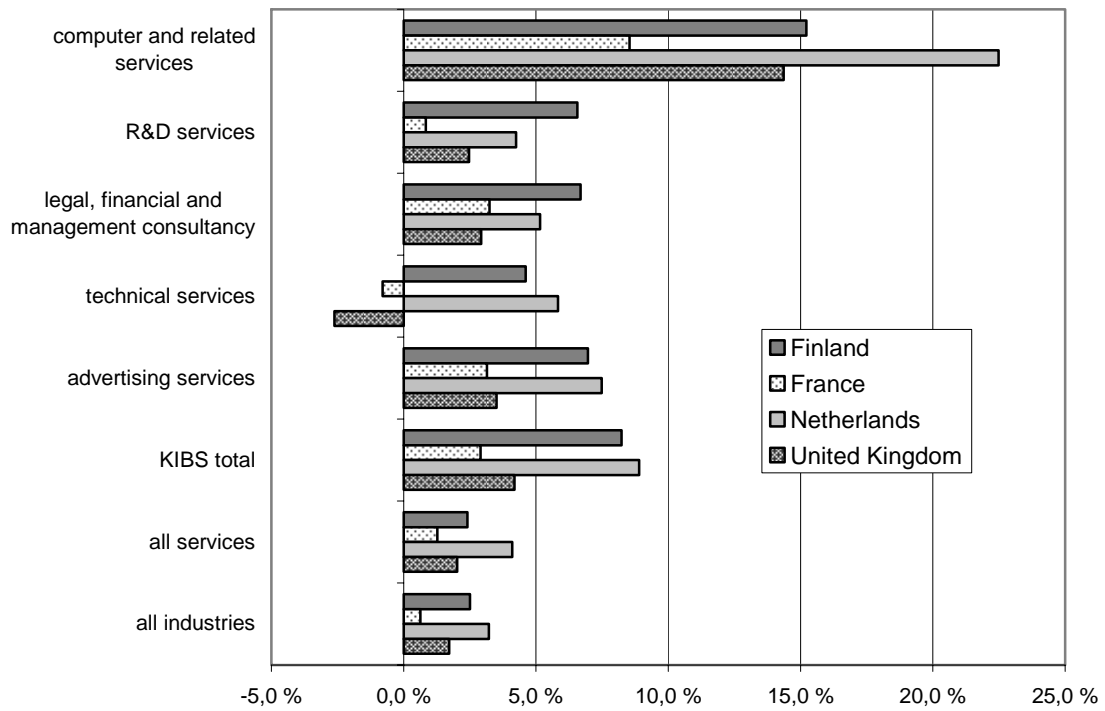
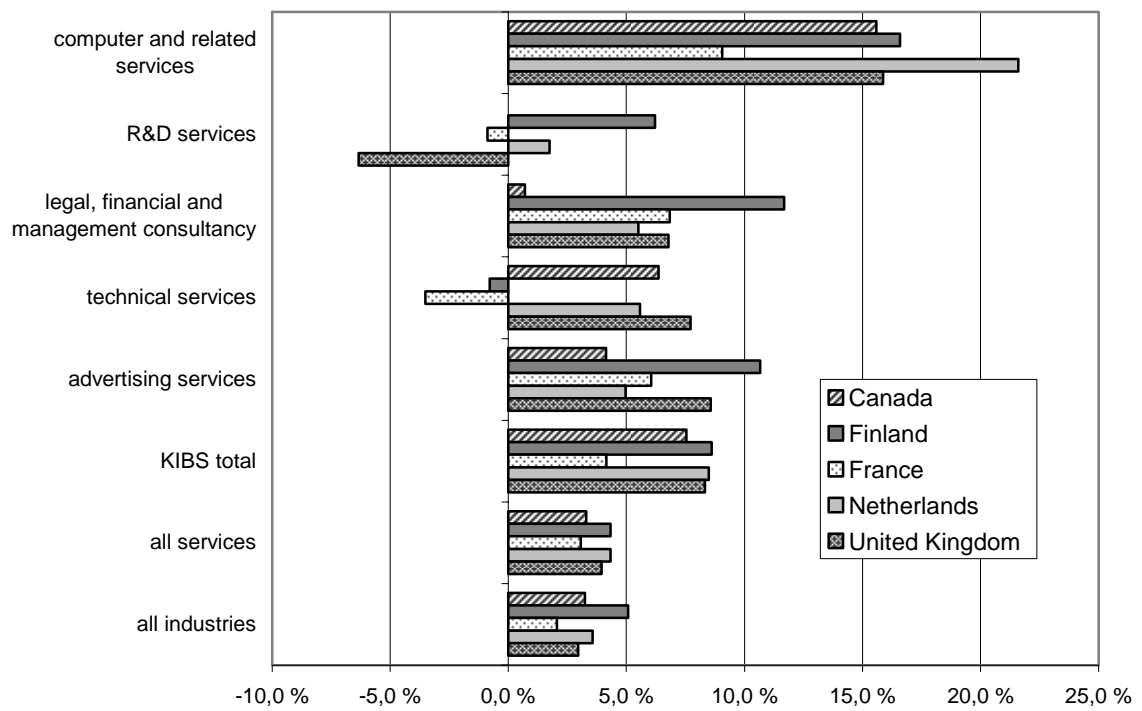


Figure 4: Average annual change (%) of GVA in KIBS branches, in all services and in all industries in some OECD countries 1995-1999 (in France and in the UK 1995-1998)



computer and related activities have experienced the highest growth rate in all the countries studied. The average annual growth in employment in this sector was in the Netherlands 22.5%, in Finland 15.2% and in the UK 14.4%; in France the growth rate was lower, at 8.5%. In the other KIBS branches the development has been clearly faster in Finland and in the Netherlands than in France and in the UK. The difference is particularly significant in the case of technical services: employment in these services has increased annually by 5 - 6% in the former countries whereas it has decreased in the latter countries. Also the development of advertising shows a clear difference between smaller and bigger countries: employment in this branch has increased in Finland and in the Netherlands 7 - 7.5%, in France and in the UK 3 - 3.5% per year.<sup>26</sup>

Measured by value added (Figure 4), the development has progressed on parallel lines: in all the countries studied KIBS have increased relatively more than services or the whole economy in general. However, there are also differences compared to the development of employment, especially the distinction between small and big countries is not visible in the growth of GVA. In the whole KIBS sector the growth rate of GVA has been similar in Finland, in the Netherlands and in the UK (8.0 - 8.5% per year). Also in Canada the growth has been rapid, 7.5% per year. Only in France has the development of KIBS been slower, the annual growth rate being about 4%. From the individual KIBS branches computer and related activities stand out in terms of their growth also when measured by GVA. In other KIBS the development differs from one country to another and also when compared to the development of employment. In Finland and in France the development of consultancy and marketing has been more positive than the development of technical services and R&D; technical services have diminished in both countries, as have R&D services in France. In Finland the non-technological KIBS mentioned have developed exceptionally dynamically compared to the other countries. In Canada, on the contrary, the growth rate of technical services has exceeded that of advertising and especially that of consultancy; in the latter the growth has been very modest. In the Netherlands and in the UK the growth rates of consultancy services, technical services and advertising services have been near each other, and clearly bigger than those of R&D services; in the UK the latter services have even diminished.

The shares of the KIBS branches of total employment and of total GVA in the countries having data on this accurate level are presented in Table 8. The figures are calculated on the basis of the most recent statistics available. The Table shows that, when considered as a whole, the KIBS sector forms a bigger

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<sup>26</sup> The OECD survey does not contain any information on the development of KIBS in the US. Country-specific statistical sources indicate that, when summed up, employment in the KIBS sectors grew by 41% in the US during the period 1995 to 2000, while the growth in the whole economy was 14%. Of individual sectors, the highest growth rate was with IT services (114%), but growth has also been very considerable in labour recruitment services (86%) and in management consultancy (78%). Marketing communications services and technical services increased by a little less than 30%, R&D services by 15% and legal services by 11%. Due to differences in the statistical source and in the review period, the above growth figures as such cannot directly be compared to information obtained from the OECD survey. However, they support the basic conclusion concerning the strong growth of the KIBS sectors in the Western countries. (US Department of Labor. Bureau of Labor Statistics)

part of the economy in France, in the Netherlands and in the UK than in Finland or in Canada. In the former countries the share of the KIBS sector of total employment was 6-7% and of total GVA 7-8% in 1999/1998. In these countries the share of KIBS is bigger when measured by value added than when measured by employment. On the contrary in Finland KIBS' share of total employment is slightly bigger (4,8%) than their share of total GVA (4,4%). In Canada, where only GVA data are available, the share of KIBS was about 4%.

Table 8: Share of KIBS branches of total employment and of total GVA in some OECD countries 1999 (the data of France and the GVA data of the UK are from 1998) <sup>27</sup>

Industry	Share of employment				
	Canada	Finland	France	Netherlands	United Kingdom
Computer and related services		1.4%	1.2%	1.8%	1.8%
R&D services		0.7%	1.4%	0.5%	0.4%
Legal, financial and management consultancy		0.9%	2.0%	2.6%	2.9%
Technical services		1.4%	1.0%	1.4%	1.3%
Advertising services		0.4%	0.7%	0.5%	0.4%
KIBS total		4.8%	6.3%	6.8%	6.8%

Industry	Share of Gross Value Added				
	Canada	Finland	France	Netherlands	United Kingdom
Computer and related services	1.6%	1.4%	1.6%	1.9%	1.8%
R&D services		0.5%	1.3%	0.4%	0.3%
Legal, financial and management consultancy	1.0%	1.2%	3.1%	3.0%	2.8%
Technical services	1.3%	1.0%	1.0%	1.2%	1.7%
Advertising services	0.3%	0.3%	0.6%	0.5%	0.5%
KIBS total	4.2%	4.4%	7.6%	7.0%	7.2%

As regards individual KIBS branches, the most significant difference between countries can be observed in the case of various consulting services. In France, in the Netherlands and in the UK these services formed the biggest KIBS sub-group both when measured by employment and by value added. In Finland and in Canada computer and related services were the biggest sub-sector in terms of GVA. When measured by employment, technical services were in Finland at the same level as computer services in 1999. All in all, technologically oriented sub-branches (IT-services, R&D and technical services) form a bigger part in

<sup>27</sup> In Table 8 the shares of KIBS have been examined in relation to all industries - not specifically in relation to service industries. Regarding the latter, the OECD data show that the share of the KIBS sector of the total service employment was 8-9% in France, in the Netherlands and in the UK; of the total service GVA the share of KIBS was 10-11% in these countries. In Finland the share of KIBS compared to all services was 7% both in the case of employment and GVA. In Canada KIBS' share of the total service GVA was 6%.

the Finnish KIBS sector than in France, the Netherlands and the UK. In view of this, the above mentioned dynamic growth of non-technological KIBS in Finland in the latter half of the 1990s is an interesting phenomenon. Of the other KIBS branches and other countries, the relatively high share of R&D services in France can be pointed out.

A detailed analysis of statistics also provides the possibility of evaluating the extent to which the more easily available data depicting all business services can be used as indicative of KIBS. The OECD survey on employment shows that the share of the central KIBS branches examined above of all business services was at the end of the 1990s roughly one half in the four countries (in Finland 65%, in France 60%, in the UK 52% and in the Netherlands 44%). The shares of the total growth of business services in the latter half of the decade were of the same order (in Finland 61%, in the Netherlands 46%, and in France and the UK 43%).<sup>28</sup> In addition to the KIBS categories mentioned, business services include the category of "other business activities n.e.c.". This category contains sub-branches that are hardly ever counted among knowledge-intensive ones (industrial cleaning and security services in particular), but also knowledge-intensive sub-branches. Of the latter especially labour recruitment services should be taken into account when estimating the total number of KIBS. Data for the countries in which recruitment services are statistically separable show that these services account for a considerable part of all business services and of their growth. Labour recruitment formed in 1999 40% of the employment in all business services in the Netherlands; in France the share was 15% and in the UK 19%. In the growth of employment in business services from 1995 to 1999 the share of recruitment services was in the Netherlands 44%, in France and in the UK about one third.

On the basis of what has been said above, it can be concluded that besides KIBS other sectors within business services have contributed to the dynamic development of this main category during the last decade. However, more than half of the total growth in business services can be estimated to have taken place in the knowledge-intensive sub-branches. When more accurate information is lacking, the statistical data on business services can thus be used as a rough indicator of the development of KIBS.

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<sup>28</sup> The shares of the KIBS sector of all business services are even bigger when measured by GVA. According to the OECD report these shares were in 1999/1998 in Finland 76%, in Canada 68%, in the UK 65%, in France 64% and in the Netherlands 59%. The shares of the total growth of business services in the latter half of the decade were: in Finland 76%, in Canada 66%, in France 64%, in the Netherlands 61% and in the UK 57%.

## **5 EXPLANATIONS OF THE GROWTH OF PRODUCER AND BUSINESS SERVICES AND ANALYSES OF THEIR NATURE**

This chapter continues the examination of the first research question. Theories and studies that have aimed at finding the reasons for the growth of KIBS will be dealt with here. These studies also supplement the quantitative analysis in the respect that they provide information on the nature and role of KIBS and on the relationship of their development to the general development of economy and society. The majority of the studies explaining the growth - as the statistics above - have been carried out in the framework of the broader concepts of producer and business services. Due to this, it is important to keep in mind the conceptual differences specified in Chapter 3. With this reservation, the earlier analyses and findings can well be utilised to outline the background and long-term development of KIBS.

The first studies which strived to explain the growth of producer services trace back to the 1960s, and especially during the 1980s the growth of these services was examined actively in several branches of science, starting from different theoretical views. Many crucial questions, not only about the underlying factors in the growth of business-oriented services, but also about their nature and role were then brought up. These questions also gave birth to research that concentrated on a specific part of producer services, the so-called advanced producer services, a topic which can be seen as the immediate precursor of the present KIBS research.

In the following discussion, early research, where the growth of services in general was in the focus, will first be described. In this research, producer services were seen to be interesting above all as a part of the emerging "service economy". After that, different explanations given for the growth of producer and business services will be discussed in three sub-chapters. The explanations are by and large in a chronological order; however, there are overlaps, and many ideas are still alive in a slightly revised form. There are also researchers who have strived to combine different angles. To begin, the focus will be on interpretations that link the growth of producer services mainly with firms' cost-reducing behaviour which results in outsourcing. One of the most important theories being related to this way of thinking is the theory of flexible production. In the next sub-chapter, studies emphasising demand factors and the development of the division of labour will be analysed. Instead of simple transfer in location, i.e. outsourcing, these studies take into account the overall need for professional labour and see intra-firm services and independent services as parts of the same phenomenon. After these views, the focus will be on studies that already approach KIBS research in their problem formulations. In these studies, producer and business services are more and more seen as an independent industry, whose internal development features are of interest as such. Theories no more strive only for the explanation of the growth of business services, but the role that these services perform in the economy has come into the focus. The last mentioned views have led to considerations of the

relationship of business services to innovation - an issue that will be tackled in Chapter 6.

### **5.1 Producer services as a part of the emerging “service economy”**

Scientific interest in the service branches arose much later than research into manufacturing. The reasons for this go all the way back to the origins of modern economics, to the judgement presented by Adam Smith about services as inherently unproductive in the sense of value creation. (Gillespie and Green 1987, 398; Greenfield 1966, 4) The basis of Smith's view was that he regarded tangibility with its associated quality of durability as the criterion of productiveness. According to Smith: “the labour of a manufacturer adds, generally, to the value of materials which he works upon. The labour of a menial servant, on the contrary, adds to the value of nothing...the labour of the manufacturer fixes and realizes itself in some particular subject or vendible commodity, which lasts for some time...The labour of the menial servant, on the contrary, does not fix or realize itself in any particular subject or vendible commodity. His services generally perish in the very instant of their performance.” (Smith 1776, reprinted 1974, 430)

The limitations of Smith's view were already demonstrated in the subsequent century, and the special category of “services” was introduced to depict certain economic activities. However, the role of service branches remained secondary in considerations of wealth creation, and therefore very little was done in the further exploration of the services category (Greenfield 1966, 5 and 7). The service sector was for long defined as a residual, its activities not belonging to primary production or manufacturing (Miles 1993, 656).

Since the 1930s, there have been some scientific pioneers focusing especially on services. Besides the position of classical economics, which belittled service branches, there emerged a model based on a three-staged development of the economy. In this so-called Fisher-Clark model (Clark 1940, reprinted 1960, 490-492; Fisher 1945, 56-57), service industries were raised to the position of the third main sector in the economy. It was argued that as communities become wealthier and more economically advanced, the focus of employment and investments will gradually move from agriculture (the primary sector) to manufacture (the secondary sector) and further to services (the tertiary sector). Clark in his analysis also made the distinction between services supplied directly to the final purchaser and services which assist other processes of production (*ibid.*, 491-492).

However, more extensive research into service industries did not start until the late 1960s and early 1970s. (Metcalf and Miles 2000, 1; Moulart and Daniels 1991, 1). At that stage the share of services in the industrial structure had rapidly increased everywhere in the Western countries, and correspondingly the

share of manufacturing had been considerably reduced. Researchers have described this development with the terms "de-industrialisation", "tertiarisation" and "service economy". (Greenfield 1966, 1; Marshall et al. 1988, 4; Miles 1993, 655) Different kinds of theories of post-industrial society emerged on the basis provided by the stages of growth model mentioned above.<sup>29</sup> At the same time, researchers began to pay attention to the inner diversity of service branches, and they "found" the group of producer services, which was growing fast alongside the traditional consumer services.

Thus awareness of producer services arose at the same time as the growth of service branches had also otherwise attracted the interest of researchers. The studies aimed to analyse the background factors behind the growth of services and the decline of manufacturing, and to predict future developments. Producer services played a special role in these studies for a number of reasons: First, as producer services grew rapidly, they had a significant effect on employment; it was hoped that they could compensate for the reduction of jobs following from the decline in manufacturing. Secondly, firms in the producer services were considered to contribute to productivity gains in other areas of the economy. Thirdly, through research into producer services, understanding the more general development towards a service society was aimed at, with particular focus on future opportunities for growth. (Greenfield 1966, 2 and 57)

The reasons described resulted in a great number of studies on producer services, and the sector became one of the most studied sub-sectors of services within the next twenty years (Martinelli 1991a, 21). The former manufacturing-focused approach was clearly reflected in the early studies. For instance, the aim was to divide the producer services according to their durability. In Greenfield's distinction, producer services which are used primarily to support policy-making decisions can be characterised as durable or semidurable, whereas those services more directly involved in administration (routine operations) are perishable (Greenfield 1966, 36-37). In addition to concepts adopted from manufacturing, producer services were also otherwise linked closely with this sector of economy: the growth of producer services was explained by demand from manufacturing and conversely they were considered

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<sup>29</sup> One of the post-industrialist theories that have most influenced later thinking was presented by Bell in his book "The Coming of Post Industrial Society" published in 1974. In this theory, the services industries were seen, not as a sector of low productivity, but as a new engine of growth based on the utilisation of knowledge and information (Bell 1974, 127-128). However, the conception of low productivity has also persisted, and the difference in productivity rates between manufacturing and services has even been used to explain the increasing share of the service sector in total employment (cf. Perry 1992). Disputes about the stage we have reached on the way to a "service economy" have also continued; conceptual and statistical ambiguities, among others, have fed differences of opinions. Critical attitude towards the dominance and blessings of the service sector shows itself e.g. in the book "Manufacturing Matters. The Myth of the Post-Industrial Economy" (Cohen and Zysman 1987). In the framework of the study in hand it is not possible to go deeply into an analysis of the general development of the service sectors. The rise of services to an important position in the Western world has been taken as a starting point, but more exact evaluations of the development of the relationship between services and manufacturing are left to other contexts. Instead, the study aims to depict carefully the growth and significance of one service sub-sector: business services. Long-term development of the three main economic sectors have been described in the references already mentioned; regarding Finland, which forms the framework for the empirical part of the present study, this kind of discussion can be found e.g. in the book by Malaska and Salminen (1994, 18-25).



to benefit manufacturing in particular. For example Browning and Singelmann (1978, 489) stated as follows: "Although most producer services cater to industries in all sectors, the transformative sector by far provides the largest market. In this sense, the growth of producer services is closely linked to the development of the transformative sector." Stressing the dependence of producer services on manufacturing was continued into the late 1980s (Goe 1990, 328), and even today there are proponents of this view as we will see in the later chapters.

Nevertheless, already in early research such ideas were brought up concerning the mutual relations between manufacturing and services that are still topical today. For example, Greenfield (1966, 6) questioned whether a clear-cut distinction can be made between goods and services. Even more important is Greenfield's analysis of the productivity of services, as it much resembles today's discussion about innovativeness and the distinction between T-KIBS and other KIBS: "...it is our considered judgment that wherever producer services are able to utilize large amounts of capital, and the rate of technological change is rapid, there is no reason why these industries should not show an above average gain in productivity. Those producer services which can avail themselves to a degree of the revolutionary developments in computerization - data processing firms, for example - are prime candidates for such a demonstration. Much more complex and subtle is the situation where the key resource is personnel but where the quality of the personnel is undergoing marked improvement. There is no reason why certain producer services, such as market research, should not experience quite rapid gains in productivity as a result of a substantial increase in the educational level of their staffs." (Greenfield 1966, 56-57)<sup>30</sup>

The significance of knowledge in raising the productivity as well as the central position of knowledge and expertise in producer services were already perceived in early studies. The production of knowledge as an investment was emphasised, and business spending in producer services was seen as a part of this investment. (Greenfield 1966, 11-12; Machlup 1962, 37) As an example, Machlup (1962, 39-40) described the share of planning and design in construction investments, i.e. the activities of consulting engineers. The fact that producer services make substantial use of professional and trained personnel was highlighted as well (Ginzberg 1966, X).

In a few studies, business services were considered to occupy a special position in the whole formed by producer services. An example of this is the study by Bearnse according to which the use of business services as such should be interpreted as innovation, because it involves a new way of organising service production (Bearnse 1978, 563). The observation by Greenfield of certain specifically dynamic elements inside the producer services

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<sup>30</sup> Johnston had already some years earlier made a study on the productivity of management consultants, i.e. on their efforts and on the outcomes of these efforts. He found measurable positive achievements and productivity improvement, and assumed that indirect effects with influence in the longer-term are even more important (Johnston 1963, 248-249).

comes even closer to current KIBS research: "The more dynamic elements in the producer services are to be found in the smaller segments such as the miscellaneous business services group, the engineering and architectural services, and miscellaneous professional services. The latter group includes such producer services as actuarial bureaus, consulting chemists, meteorological services, and scientific and statistical research agencies. This group... is the most rapidly growing cluster of producer services industries." (Greenfield 1966, 31) Although the industrial classification used in those times differs from that of the present day, the characterisation presented corresponds to a surprising degree to the current definition of KIBS branches.

As the early studies of producer services were closely connected with the idea of an emerging service economy, they emphasised the growth of producer services as a part of the general growth of services. However, at the initial stage of the research, there were already reflections about why it does pay to buy services from outside operators instead of using firms' own specialists. Greenfield (1966, 37-46) states the following reasons: desire to lower costs, desire to increase the quantity or quality of the output, desire to eliminate troublesome functions, (e.g. complex jurisdictional problems), periodic need for specialised personnel, desire to maintain a small and homogenous labour force, image factors, necessity to cope with risk and uncertainty, need for guidance and consulting. Greenfield also discusses a situation in which a firm decides to contract out some service activities previously performed in-house, i.e. outsourcing. But, according to his opinion, the entire growth of producer services cannot be explained as transfer in the location, because a wide range of new services is being offered and an increased use of older services is occurring. (Greenfield 1966, 15). However, gradually the phenomenon called outsourcing gained an increasingly strong foothold as the factor explaining the growth of producer services. This way of thinking will be discussed in the following.

## **5.2 The significance of outsourcing in the growth of producer services**

Several terms have been used to describe the phenomenon in which services previously provided by a firm's own personnel are transferred to be bought from outside companies. Earlier, the term "externalisation" was generally applied for this purpose (e.g. Howells and Green 1986, 130). "Externalisation" has, however, been used in another meaning, too: to refer to the purchase of outside services on the whole, regardless of whether they have earlier been provided internally or not. Similarly, the term "internalisation" has been used to refer both to all services provided internally in a firm and to services that had been previously provided by an external company, but which the firm afterwards subsumes for internal provision (Perry 1992<sup>31</sup>). Some researchers have

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<sup>31</sup> Perry uses as his starting point a definition according to which "externalisation refers to the shift of a particular set of goods and services from being generated within a firm to outside it" (formerly presented in

adopted the term “unbundling” to refer specifically to the transfer of services provided internally in a firm to be bought from outside the firm (Goe 1990, 330<sup>32</sup>; Tschetter 1987, 31). In the 1990s the term “outsourcing” was introduced for the same purpose, and it is nowadays the most common expression in this context (e.g. Bragg 1998; Rothery and Robertson 1995). The terms “sub-contracting” and “contracting out” have sometimes been used as synonyms for the purchase of services from outside a firm (MacPherson 1988, 953; Stanback 1979, 18; Tschetter 1987, 34<sup>33</sup>). In general, however, sub-contracting refers to the relationship between manufacturers and suppliers of goods (cf. Goe 1991).

At the same time as the macroeconomic discussion about the structure of the post-industrial society and about the productivity of services continued in the 1980s, discussion about the organisation of labour processes emerged and gained ground. The elevation of outsourcing to a prime cause of the rapid expansion of producer services was connected with this discussion. (Perry 1992). In its simplest form, the argument was that the growth of producer services for the most part reflects job reorganisation, not a genuine increase in business activity and employment. According to this view, the question was above all about a displacement effect that resulted from the shift of activities from manufacturing industries to service branches (e.g. Lewis 1988, 279-280; Rajan and Pearson 1986, 87). Reasons for outsourcing were usually considered to be of a purely economic nature: to be competitive, companies need to reduce their overhead costs, and they do this by transferring service-type activities from in-house staff to outside firms (cf. Tschetter 1987, 31). The main part of the outsourcing argumentation did not meet the strict criteria of a theory (Goe 1991); closer or looser linkages to neoclassical economic theories can, however, often be found behind this thinking.

There were other researchers who considered the neoclassical framework too straightforward and simple in the analysis of the growth of producer services. They strived for a coherent theory by combining different viewpoints, but still leaning on the explanations based on outsourcing and cost-related behaviour of firms. In this context, the transaction cost approach developed by Williamson formed an important starting point. Williamson aimed in his theory to combine organisation-theoretical views with economic studies (Williamson 1981, 548). The transaction cost approach is built on the work of several previous researchers; a central precursor is the theory about a firm’s establishment and growth developed by Coase in the 1930s. Coase started his analysis from the assumption that markets are the principal organisational means of conducting economic activities. He aimed to explain why and when the market mechanism

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the nearly same form by Howells and Green 1986, 130). However, Perry also calls externalisation a situation where new functions which had originated through the innovation of service suppliers are bought in without any transfer of activities. (Perry 1992)

<sup>32</sup> Goe defines this term as follows: “Unbundling refers to a reduction or elimination of the internal provision of indirect production activities by businesses coupled with the transfer of provision to independent firms that specialize in those activities” (Goe 1990, 330).

<sup>33</sup> According to Tschetter, unbundling implies increased contracting out, but increased contracting out need not imply unbundling. It can result from unbundling, but also from new needs for producer services, or both. (Tschetter 1987, 34)

is superseded by firms' internal activities. The basic premise was that there are costs of using the price mechanism. Discovering the relevant prices is the most obvious cost, and contract costs must also be taken into account. Economising these transaction costs is the primary factor influencing whether firms meet specific needs through market transactions or supplant the market with internal organisation. (Coase 1937, 387-394). Williamson specified Coase's analysis by itemising the costs that derive from different stages in contracts: from negotiating contracts, monitoring contract performance and from enforcing contracts. His transaction cost model posits that frequently recurring transactions which involve substantial asset-specific investment and uncertainty in the outcome of the contract are more likely to be conducted in-house. (Williamson 1979, 253-254; 1981, 558-559 and 1985, 20-21)

The approach based on transaction costs uses the term "vertical integration" for a situation in which activities are collected to be carried out inside a firm (Coase 1937, 388). Similarly, in the studies starting from this framework, outsourcing has been described with the term "vertical disintegration". As the transaction cost theory presumes that the markets are the normal way of handling various activities, its point of view is not literally speaking that of outsourcing, but on the contrary: the services provided inside a firm need an explanation. The model by Williamson has, however, influenced in an important way certain other theories in which outsourcing has occupied a central position. Some of these theories have specifically addressed the growth of producer services as an outsourcing phenomenon. Williamson's model provides a potential theoretical explanation for the growth of producer services. First, it implies that market contracting for producer services functions has involved low transaction costs and that substantial asset-specific investments have not been necessary on the part of firms contracting for these functions. A second implication is that the outsourcing process itself increases the demand for producer services: processes of obtaining information about price and quality of goods and services and of negotiating, monitoring and enforcing market contracts have the potential of creating demand for e.g. information and legal services. (Goe 1991)

One of the most interesting theories in which the growth of producer services has been closely linked with outsourcing is the theory of flexible production; this theory became popular towards the end of the 1980s. The transaction cost theory is considered to be one of the conceptual origins of the theory of flexible production, as the theories share several common points (Coffey and Bailly 1991). The first developers of the theory of flexible production were Piore and Sabel in 1984. Their main argument was that Western industry is undergoing a major qualitative shift away from Fordist mass production towards a revival of craft forms of production. This new phase of flexible specialisation, as Piore and Sabel called it, is based on networks of technologically sophisticated firms with their highly skilled workforce. The application of computers to industry favours flexible systems. It is noteworthy that Piore and Sabel already stressed the strategy of continuous innovation, which is today considered to play a major role in wealth creation. (Piore and Sabel 1984, 17 and 258)

According to the theory of flexible specialisation, the intra-firm technical division of labour associated with the assembly line production method is outdated and will be replaced by the social division of labour based on an inter-firm organisation.<sup>34</sup> The intensified uncertainty and increased competitiveness require that companies are able to combine and recombine together in loose, rapidly shifting coalitions. The diversifying consumer demand, too, calls for more flexible modes of production. (Coffey and Bailly 1991; Scott 1988, 173 and 176). In their studies, Piore and Sabel themselves mainly examined new high-technology production communities in which companies are equal parties in a network (see e.g. Piore and Sabel 1984, 265-268). Later on sub-contracting relationships were incorporated into an integral part of the model of flexible production. The hallmark of flexible production was seen to be vertical disintegration. A flexible firm tends as far as possible to externalise production processes by buying in services and products. A transaction structure emerges, in which a network of small and medium-sized enterprises supports the activities of the main enterprise. The main enterprise controls only the final products and the key technology; activities that are not strategic to the production process itself, together with the production of parts and components, are contracted out to other firms. In addition to new flexible production complexes found in high technology and design-intensive industries, there is pressure to subcontracting and other more fluid practices in mass production, too. (Coffey and Bailly 1991; Scott 1988, 174-178)

Thus the flexible system of production is based on a network of subcontracting relationships. Outsourced producer services were seen as one part of these relationships and outsourcing connected with flexibility was elevated to a prime cause of the producer service growth (Perry 1992). However, producer services do not, in terms of their nature, correspond to the picture given by the model of flexible production when it comes to the operations suitable for sub-contracting. The contradiction becomes especially clear when the idea of a flexible workforce is linked with flexible production. One of the most important developers of this idea is Atkinson. According to him, a firm can follow two different paths while striving for flexibility: first, through functional flexibility, which means developing multi-skilling and lowering the occupational boundaries, so that employees can be redeployed quickly and smoothly between activities and tasks. Secondly, through numerical flexibility, which means maximising the labour force available while minimising the number of workers for whom the employer is permanently responsible. The aim of numerical flexibility is that worked hours can be quickly, cheaply and easily increased or decreased in line with changes in the level of demand for labour. (Atkinson 1985, 11)

The two ways of applying flexibility are reflected in the emergence of a dual labour market. The core or primary group comprises stable, skilled employees with secure employment; functional flexibility is applied to this group. Numerical flexibility is applied to peripheral or secondary groups with less firm-specific

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<sup>34</sup> The separation to technical (inside a firm) and social (between firms) division of labour originates from the classic figures of economics: Smith, Ricardo and Marx (Martinelli 1991a, 22).

skills; employees in these groups are recruited from the open market or released into it as the firm's demand changes. Employees bought in on a sub-contract basis belong to peripheral groups. (Atkinson 1985, 3 and 15 - 17; Scott 1988, 177). It follows from this line of thinking that the labour of outsourced producer services should belong to the peripheral groups. Yet the defenders of the model of flexible production themselves see the role of these services as quite the opposite. Scott, for example, regards business services as one of the most important sectors in the new regime of flexible accumulation. Scott also states that labour market instability connected with vertical disintegration does not only concern secondary workers but many kinds of qualified technical and scientific cadres. In some centres of flexible production, sub-contractors are part of the core of the labour market. (Scott 1988, 175 and 181). Coffey and Bailly (1991), who intend to widen the model of flexible production, underline especially the significance of self-employed, independent sub-contractors; these "one-person-firms" form an important source of professional skills for firms needing short-term specialised services. Coffey and Bailly also point out that producer services do not play only the role of sub-contractor but they, too, outsource their operations.

Besides proving to be contradictory in explaining the growth of producer services, the model of flexible production has faced fierce criticism on other grounds, too. One of the central problems are the strong, general arguments and inaccurate concepts included in the theory. Even the concept of flexibility as such meant things of very different levels, as it aimed to explain both the organisation of a firm's internal work process and the historical main stages of the entire capitalistic economy. The conclusions on mass production's being replaced by a new kind of a production method were based on empirical examples taken from a few branches. In other branches mass production is still the prevailing practice, and there are also branches for which either of the characterisations is hardly suitable. In fact, both the criticsers and the later developers of the theory have underlined that mass production and flexible production are not opposite. Flexibility is not a new thing, but it has been aimed at by different means at the various stages of history. Flexibility in connection with the producer services and more generally can be stressed without linking it especially with the theory of flexible specialisation. (Coffey and Bailly 1991; Goe 1990, 339 and 1991; Sayer 1989, 669 - 672)

On a more general level, several researchers questioned the whole idea of outsourcing as one single or main explanation for the growth of producer services. Empirical studies directed to business service firms showed that outsourcing was seen to be of little importance in the development of these firms (Perry 1990, 203)<sup>35</sup>. The weakness of the outsourcing model became evident most clearly when statistical analyses confirmed that output and

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<sup>35</sup> According to a survey study made in New Zealand, only 20% of managers of business service firms regarded externalisation as an important source of business growth while 60% stated that externalisation had been of no importance to the firm's development. The share of current business acquired through externalisation was generally estimated not to exceed 10%, even when considered "important". (Perry 1990, 203)

employment growth had been achieved in internal and external producer services simultaneously. A displacement of internal services, which the outsourcing model would logically have called for, was not occurring. (O'Farrell 1995, 527; Perry 1992, Tschetter 1987, 35)<sup>36</sup>. As outsourcing explained a rather small portion of the growth of employment in producer services, it was concluded that the growth is mainly the result of new needs (Tschetter 1987, 38). These new needs increase the number of personnel in expert professions both inside and outside firms, which raises to the fore the question of the overall demand for specialised professionals and its underlying forces (O'Farrell 1995, 540; Tordoir 1995, 11).<sup>37</sup>

### **5.3 Overall demand for expert services, interaction between in-house and outsourced services**

The theories and studies in which the growth of producer services was considered to derive from a genuine increase in demand were based partly on the same basic assumptions as the theories of flexible production. The development of the division of labour was analysed as the most important factor explaining the growth of demand.<sup>38</sup> On the other hand, as distinct from the theories of flexible production, the demand-orientated approach emphasised that the process of progressive division of labour occurs both within the firm through the establishment of in-house specialised functions and personnel, and across firms with the establishment of specialised, free-standing firms on the open market. Therefore, the study of producer services cannot be limited to the external activities, but must necessarily take into account internal service activities carried out in non-service firms.

The major theses of the demand-orientated approach become clear in the analysis made by Martinelli. According to her, producer services' growth is demand-led, that is, largely determined by changes in the way that production is carried out. Because of their close relationship to productive activities, producer services must be analysed within the evolution of modern productive

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<sup>36</sup> For example, a statistical analysis of occupational trends in U.S. manufacturing made by Tschetter showed that the share of manufacturing employment accounted for by professional, paraprofessional and technical occupations increased from 8.4 percent in 1977 to 9.9 percent in 1980 and from 11.0 percent in 1983 to 11.8 percent in 1986 (Tschetter 1987, 35).

<sup>37</sup> However, there are still today writings where the development of producer services is seen solely as a result of outsourcing and complementary to manufacturing. In this spirit Karaomerlioglu and Carlsson argue that not only the functions performed earlier by manufacturing firms but also totally new producer services, e.g. advertising on web pages, should be called outsourcing. This is because the new activities replace or reduce conventional ways of carrying out the same function, and manufacturing firms can perform these activities themselves if they want. Producer services should be even considered together with manufacturing industries instead of services, because the input-output linkages of these services are mainly related to manufacturing. (Karaomerlioglu and Carlsson 1999, 176, 186 and 191-192)

<sup>38</sup> Already in some early studies, where producer services were analysed as a part of the whole service sector, the growth of these services was considered to be largely a reflection of the increasing division of labour (Browning and Singelmann 1978, 489).

organisations. Increased division of labour, to which the representatives of classical economics already paid attention, has been the most essential feature of this evolution in the 20th century. Taylorism and Fordism in particular signified a radical change in the form of a growing separation and specialisation of tasks. The development of many producer services is the result of a growing separation between material production, conception, organisation, control, execution and distribution functions within the overall production process. (Martinelli 1991a, 22-23)

Parallel to changes in the organisation of work, firms have significantly evolved from the single-product, single-site type of organisation to the more multi-product, multi-locational corporate structure. In order to monitor complex corporate apparatuses, the weight of managerial, technical, professional and other service functions has become increasingly important. The personal supervision of the traditional businessman has transformed into a sophisticated structure of scientific management and services. The development of scientific methods for the organisation of work and production and the rise of the business administration system have promoted the growth of research, engineering, management and organisation consultancy, accounting and legal advice. (Martinelli 1991a, 22-23; see also Moolaert and Daniels 1991, 1 and Sayer and Walker 1992, 69-71).

As shown in the analysis by Martinelli, not only the specialisation of functions but also the increased need for integration raises the number of producer services. In addition, the growing internationalisation of markets and the development of new information technology have, according to her, created new service needs (Martinelli 1991a, 23). Analyses in broad outline similar to that of Martinelli have been presented in many other studies, too. By combining the findings of these studies, the growing demand for producer services and corresponding in-house functions can be examined in some more detail according to four main headings:

- increasing product differentiation
- changes in the production process and production organisation
- need for coordination and integration
- changes in the business environment.

The underlying factor of the increasing product differentiation is the increasing differentiation of the markets, the customer's desire for more individualised products. This increases the need for producer services both upstream and downstream of actual production. At stages preceding the production process, the aim to provide products by customer group requires inputs in innovation activities. At the stages subsequent to the production process, introducing products into the markets necessitates more and more expertise. The research and development, design, advertising, marketing and distribution aspects of the production of goods and services have thus become increasingly important. (Coffey and Bailly 1991; Gillespie and Green 1987, 399; Illeris 1989a, 55; Marshall 1989, 144)



Changes in the production process concern organisational decisions aiming at improved efficiency and flexibility. These have forced a growing number of firms to seek specialised help or to develop specialised capabilities in fields such as information processing, industrial engineering, process design and research. (Coffey and Bailly 1991; Illeris 1989a, 55-56) In addition, the opportunities and requirements brought about by the development of new technology have both changed the way of producing services and created wholly new sectors of service activity. Many researchers have paid attention to the special meaning of information technology as a factor increasing producer services and the internal expert functions of companies. (Martinelli 1991a, 23; Perry 1992).

The complex organisational structure of the modern firm increases tasks related to the internal management and administration. Specialised assistance is needed in strategic planning, organisation, coordination and control at all levels. (Illeris 1989a, 56) Some researchers have pointed out that many producer services are in fact specialised extensions of head-office functions (Gillespie and Green 1987, 409). The need for coordination and control is not restricted inside companies, but also stems from the increase in the scope and the intensity of interaction between firms. The view presented by Martinelli in this connection resembles later analyses of networking economy and the role of KIBS. According to her, contemporary efficiency and productivity depend, to an ever-increasing extent, on the links between different activities, and producer services have the peculiar role of integrating the different parts of the economic system. (Martinelli 1991a, 24; see also Coffey and Bailly 1991)

Concerning the changes of the business environment, producer services have been seen to contribute to promoting or facilitating overall economic change and adaptation. These services have been expected to influence the modernisation of the productive system, assist in adopting the skills and attitudes required by the changes and reduce structural, organisational, administrative and knowledge-related obstacles. (Gillespie and Green 1987, 400; Martinelli 1991b, 80) The growing internationalisation of markets and competition is an essential feature of the change: the complexities of the global economy increase considerably the need for knowledge and adaptation (Goe 1990, 330; Illeris 1989a, 55). An important factor influencing the business environment is also the growing application of government regulation to all facets of business activity, which has necessitated reactive and proactive responses by firms seeking to conform to the norms imposed by society. The need for advice related to public regulation has increased demand for producer services functions such as accounting and legal services. (Coffey and Bailly 1991; Goe 1991; Illeris 1989a, 55)

While the demand-based approach emphasised the overall need for expert services, it did not seek to deny the existence of the outsourcing process. In a theoretical sense, the development of outsourcing depends, according to demand-based studies, on whether the development of the technical division of labour gives rise to further development of the social division of labour with the creation of new branches (Massey 1984, 185). Thus the form of division of

labour is decisive as to whether the indirect production activities remain hidden from view as intra-firm transactions or whether they emerge as a separately identifiable producer services sector. (Gillespie and Green 1987, 399) Also in this respect the analysis of demand-based studies was similar to that of flexibility theories. However, unlike the model of flexible production, the development was not expected to be one-way, i.e. to go towards increased outsourcing. The emphasis on advantages of sub-contracting services was seen as an over-simplification - there are also situations in which it pays to produce services inside a firm. Some producer services have always existed on a free-standing basis, others have first developed in-house and then evolved into specialised independent activities, some have eventually been re-internalised. Although the prevailing trend is towards externalisation of services, there are also countervailing forces (Marshall 1989, 142 and 148; Martinelli 1991a, 23).

Since the mid 1980's there have been a great number of studies in which the motivations influencing the internalisation/externalisation balance have been examined (Coffey and Bailly 1991; Goe 1991; Howells and Green 1986, 130-131). The principal factors identified can be divided into four main groups:

- cost-efficiency factors
- factors connected with expertise and quality of service
- characteristics of the client firm
- characteristics of the service provided

In the analysis of causes of internalisation/externalisation, the demand-based studies focused on the firm level - the viewpoint adopted also by the transaction cost approach. The scope of the latter approach was, however, much narrower as it was limited to economic factors behind firms' decisions regarding outsourcing. The idea of multiple motivations adopted by demand-based studies resembles basically the early analysis of Greenfield who already raised many of the factors mentioned above (cf. Chapter 5.1).

Regarding cost-efficiency, two causes especially have been considered to speak in favour of outsourcing: scale economies in the specialised free-standing service firms and the avoidance of risks and fixed costs. Avoidance of risks is connected both with the service purchased and with the economic situation. When the demand for a service is insufficient, sporadic or unpredictable, resulting in inefficient use of resources if organised on in-house basis, externalisation is preferred. As an example, legal counsel or tax accounting in small firms can be mentioned. (Coffey and Bailly 1991; Goe 1991) Business cycles have also been suggested to influence outsourcing dynamics, but consensus has not been found on the direction of this influence. In the spirit of flexibility thinking, it has been argued that during downturns firms tend to streamline their administration in favour of subcontracting for producer services functions (Goe 1990, 331). On the other hand, it has been maintained that subcontracting might decrease in a recession, as firms use their own core staff, whom they wish to retain, to undertake tasks done previously by contractors. (Perry 1992)

Access to specialised knowledge or expertise possessed by firms in producer services has frequently been posited to be another important factor in the use of outside services (Coffey and Bailly 1991; Goe 1990, 330 and 1991). Some researchers have even considered the limitations of intra-firm knowledge resources to be the main motive for externalisation (Howells and Green 1986, 131). Especially the increasing technical complexity and specialisation of producer services functions entail that firms often lack internal capability to meet the demand for a particular service at a sufficient level of efficiency or quality. (Goe 1991; Howells and Green 1986, 130-131). The emphasis on expertise and quality of service in free-standing producer service firms comes already near the viewpoint adopted in later studies of knowledge-intensity as a central feature of a specific group of these services.

Of the characteristics of the client firm, the size of the firm has often been mentioned as a background factor behind differences in the use of outside services. Large establishments and firms are more likely than small firms to reach the scale necessary to support the costs of internal specialisation for given functions (Howells and Green 1986, 130; Martinelli 1991, 26).<sup>39</sup> On the other hand, in small firms the use of external services is restricted by the undeveloped differentiation of functions. Thus, outside services are most common in medium-sized establishments; several studies show that they externalise more service demand than either their small or large counterparts. In addition to the size factor, it has been noted that exporting firms, growing firms and firms with changing markets or technologies buy more external services than other firms. (Illeris 1989a, 59; Ochel and Wegner 1987, 87-89)

Outsourcing also varies according to the type of service. Some functions such as legal services have generally had a much higher level of externalisation than others, for example accounting, regardless of firm size. (Howells and Green 1986, 130) In some cases, regulations may prescribe that certain producer services are provided by an independent firm; financial auditing and quality tests are examples of these kinds of services (Goe 1991; Ochel and Wegner 1987, 82). Both scale-economies and knowledge resources of specialised firms have induced some researchers to conclude that the length of time that a producer services function has been established as a business practice influences the externalisation process: services are produced in-house when they have entered a more mature phase in their development. This happens especially in larger firms that have resources for establishing special departments for producer services functions. (Goe 1991, Marshall 1985, 358) Empirical results describing the development of computer technology have been used as an example. The initial development of this technology encouraged sub-contracting out, but with the cheapening and simplification of equipment, firms are more likely to use in-house facilities. All in all, technology,

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<sup>39</sup> However, even though large firms have the best resources to produce internally the services needed, decisions to outsource have been made by these firms, too. Some researchers have pointed out that these decisions of large companies have in fact considerably influenced the total amount of outsourced producer services. The externalisation of large companies was originally motivated by reasons of cost and then because of a real division of tasks. (Monnoyer and Philippe 1991, 109).

and computer technology in particular, has been suggested to play an important role in conditioning the balance between internalisation and externalisation. (O'Farrell 1995, 525; Marshall 1989, 148).

Regarding the outsourcing decision, the most important characteristic of a service is considered to be its strategic significance to the client firm. Services vital to business or related to the firm's core operations tend to be carried out in-house; this holds true also for services containing commercially confidential or firm-specific information. (Coffey and Bailly 1991; Marshall 1989, 147; Ochel and Wegner 1987, 83) In addition, the image and culture of the company should be incorporated in some services and these may be difficult to identify by external suppliers (Marshall 1989, 145). On the other hand, even though the use of outside services is "a strategic decision" in the sense described above, firms having "an outsourcing strategy" are a small minority. Most manufacturing firms have adopted a pragmatic purchasing policy, externalising and internalising services on an individual basis. (MacPherson 1988, 966; Perry 1990, 195 and 1992). According to some researchers, the decision to provide services in-house or to buy them in from outside is even increasingly arbitrary (Wood 1986, 40). In addition, cultural factors and established practices should not be overlooked; a great part of firms continue on the basis they are used to and undertake no change in the organisation of their producer services. (Ochel and Wegner 1987, 83-84; Perry 1990, 206).<sup>40</sup>

In the discussion of outsourcing as a strategic question, some researchers have emphasised that the crucial point is not the level of externalisation. What matters is how the market is used, i.e. actual modes of organisation and the nature of subcontracting. (O'Farrell 1995, 540-541; Perry 1992) The outcome can be quite different depending, for example, whether each element in the production of a service is subcontracted separately or whether there is only a single agency taking care of the whole service. Furthermore, it has been noticed that the growth of internal and external producer services is often mutually reinforcing: organisations employing external professional services firms tend to have internal specialists in the same areas. An explanation for this phenomenon is that firms having internal service staff are better equipped to define external service tasks and to use the results. (Illeris 1989a, 54; MacPherson 1988, 959-960; Tordoir 1995, 11).

The above analysis of the linkages of firms' in-house services to their core operations seems at first sight to have much in common with flexibility theories. However, it differs from flexibility thinking in important ways: The definition of a firm's core operations is seen as a complex question, the solution of which may change from time to time. In addition, there are other factors influencing the outsourcing decision; due to these factors firms may sometimes purchase even

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<sup>40</sup> Established practices are important also on a larger scale, in different branches and in different countries. Bearing in mind that some services have become widely outsourced already several decades ago, the history of subcontracting affects the internal/external balance of expenditure. (Perry 1990, 206) For example in the European context, the United Kingdom is characterised by a remarkable development of free-standing business service companies, whereas there is a strong tradition to produce business services in-house in Germany (Rubalcaba and Gago 2003, 93).

their core services from outside. These more detailed considerations have made it possible to bring together two apparently contradictory viewpoints: the perception of firms' concentration on their core operations and the argument of the strategic significance of independent producer services. On this basis firms' outsourcing behaviour and the role of KIBS have been analysed in the more recent studies. The finding of the mutually reinforcing effects of external and internal services has contributed to the later analysis of the co-production of services by the service provider and the client.

#### **5.4 Supply of producer services, producer services as independent industries**

The main focus of producer services studies was on explaining the growth of these services. The role of producer services in the economy was acknowledged, but most often on the basis of their linkages to other sectors. In the mainstream of studies, the linkages of producer services were further restricted to manufacturing industries. In this respect, most demand-based studies did not differ from the view that emphasised outsourcing as the cause of producer services' growth. According to Martinelli (1991b, 85), "producer services exist and prosper where there is a demand from a productive system". A prerequisite for the development of research towards recent thinking about KIBS was a more diversified analysis of the relations of producer services to other areas in the economy. A significant step forward were studies that examined the relation of producer services to other services and to the public sector. Studies on the supply side of producer services and on characteristics of their internal development were even more crucial. These studies can be regarded as an important contribution to the understanding of the active and independent role - not only indirect impacts - of producer services.

One of the first researchers who brought up the need to elaborate the pattern of manufacturing-producer service interaction was Wood (1986, 40). According to him, the growth of the size and internal complexity of the service sector means that all the more jobs have become based upon the service expertise offered to other service functions. Also statistical input-output analyses and empirical studies corroborated the fact that a significant part of demand for producer services comes from other service firms (Marshall et al. 1988, 41 and 47; Perry 1990, 206). According to some results, other services are even the main source of demand for producer services (Goe 1990, 334).

It was also pointed out that the needs of the public sector have an important impact on the growth of producer services, an aspect that the discussions centred on manufacturing had almost ignored. For instance, the increase in public regulation, which was mentioned above, has enhanced the need for producer services, in addition to private firms, at various levels of government as well (Coffey and Bailly 1991). Empirical studies indicated that externalisation

of services from the public sector had in several Western countries been a more significant trend than from private companies. According to researchers, a straightforward parallel must not, however, be drawn between outsourcing in the public sector and the corresponding phenomenon in the private sector. Political motives, the goal of privatisation, have often been an important factor explaining outsourcing in the public sector. (Perry 1990, 206 and 1992)

Studies that have analysed the supply of producer services and characteristics of their internal development can be grouped according to two main themes: first, the formation and stability of producer service firms, and secondly, geographical location of producer services and the location of their markets. Under both of these headings important issues preceding later KIBS studies have been discussed and empirical research concerning the themes continues today in the framework of KIBS. In the following the earlier results of company formation and geography of producer services are summarised. In those cases where the findings are closely linked to the core of the recent KIBS research, the later development of studies is referred to and the topics will be analysed further in the next chapter. Concerning other research areas, the recent framing of questions as well as examples of recent findings are shortly described in this sub-chapter.

Several researchers of producer services paid attention to the high rate of new firm formation in this sector. Bearing in mind that both outsourcing and new needs affect the establishment of independent service firms, there are four different possibilities for the birth of a new firm (Perry 1990, 202):

- the service division of an existing enterprise may become an independent enterprise
- individual proprietors or employees may leave an enterprise to establish their own undertaking
- the parent enterprise may create a market for an unrelated new firm
- the start of a new firm may be independent of an established enterprise

Excluding the establishment of new firms on the initiatives of the parent firms - the outsourcing phenomenon whose motives were discussed in the preceding sub-chapters - the high birth rate was explained by two causes. On one hand, the many opportunities for new ideas and innovations that the service sector can provide were highlighted (Perry 1990, 206) - a viewpoint referring already to later studies on KIBS and service innovations. On the other hand, the low entry barriers were seen to increase the birth rate of new producer services firms. Especially the small amount of fixed investment required to carry out these services was mentioned (Marshall 1985, 358; Martinelli 1991a, 21). In addition to the establishment of new firms, the low entry barriers also provide opportunities for self-employed professionals. It appeared that some of the highest rates of self-employment were amongst the professional occupations (Howells and Green 1986, 123).

Due to the low entry barriers it is possible to react quickly to current demand, but there is the other side of the coin: the death rate of firms is high, too. This has been explained by the fact that the easy entry may result in less rigorous

financial and technical planning, and further in less well organised and less well run businesses. In the competitive process, these kinds of firms are then weeded out. (Howells and Green 1986, 123) In the cases where former employees of the parent firm have established a new firm, the situation can be very different depending on whether the choice has been voluntary or whether it has been “necessary evil” from the point of view of the founders: service firms are sometimes established by ex-employees who are made redundant and then taken on as sub-contractors to carry out the same work - but with lower overheads for the core company (Miles 1993, 667). In these cases the position of the service firm may be shaky from the beginning.

The last-mentioned case is actually one form of outsourcing. In practice this form has often dominated the outsourcing discussion and given the whole phenomenon a negative stamp. However, as we have seen, there are many motives for outsourcing, and the situation where ex-employees begin their “career” as entrepreneurs by providing services to their former employer should not be considered from one side either. During long recession times self-employment is often an important alternative in expert occupations, and in the course of time the original linkages to the parent firm may be replaced by broader markets. High structural dynamism as a characteristic of business services has, however, been confirmed also in recent KIBS studies. To the earlier perceptions of low entry barriers has been added the lack of formal qualification requirements in some parts of business services sector, for example in management consultancy. (Kautonen 1998, 31; Kyrö 1999, 12 and 23; Strambach 2001, 54-55).

In addition to the firm level, some studies have examined the stability of the development in producer services at the branch level. Attention has been paid to the differences of development in various branches during business cycles. In the 1980s it was noticed that some producer services - accounting and management consultancy - grow during economic downturns at least as well as during better times (Marshall et al. 1988, 191). Later studies on KIBS have confirmed that only some sub-branches suffer from recession times. Hermelin (1997, 96) concluded on the basis of her empirical examination that technical and advertising services are recession sensitive, but other KIBS only to a slight extent. On the basis of the recent development, this observation needs an addition. At the beginning of the 2000s, IT services have suffered badly from the negative business cycle (cf. European Information Technology Observatory 2003, 71). The situation in IT services has clearly changed from the early days of this branch. In the 1970s and in the 1980s the growth of computer and related services continued throughout the economic downturns, though it was smaller in these times than in expansionary periods (Howe 1986, 30).

The general sufficiency of producer services has seldom been an explicit research topic; also studies evaluating the level of expertise in the service firms are difficult to find.<sup>41</sup> Availability of producer services has, however, been

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<sup>41</sup> Implicitly these questions are included in studies where costs and know-how are discussed as factors influencing “make or buy” -decisions. In some studies the significance of supply factors - availability, costs

examined as a question of regional equality in the connection of studies made on the geographical location of these services. The geography of producer services has been treated widely since the early research of these services. Already in the 1970s it was observed that the most advanced corporate services are located in very large urban centres (Stanback 1979, 88). The concentration of producer services in advanced economies, and within these in a few metropolitan regions, has thereafter been confirmed in several studies (Howells and Green 1986, 112-114; Marshall 1985, 356; Illeris 1989a, 64; Massey 1984, 188-189). Causes and consequences of the spatial polarisation have also aroused abundant interest. The location of headquarters in big cities has been considered to be an important background factor in the development. As producer services mainly concern phases before and after material production, the headquarter level has been regarded as a central market for them. In addition to "forward linkages" to markets, there is a need for "backward linkages" to other service suppliers and to sources of knowledge: research institutions, universities, governmental organisations and so forth. Such facilities are generally available in greater quantity in large urban areas. Important agglomeration advantages are also the possibilities for face-to-face contacts and the speed of information transfer. The availability of a skilled labour force is an additional motive for the concentration. (Coffey and Bailly 1991; Illeris 1989a, 77 and 102; Martinelli 1991b, 74-75)

In recent studies of the background factors influencing the geographical location of KIBS, the synergetic effects of the combination of factors mentioned above as well as the history of enterprises have been underlined (Hermelin 1997, 146). In addition, it has been pointed out that concentration is not the only phenomenon that needs to be examined as a spatial characteristic of KIBS. Already in the earlier studies, some researchers had remarked that the growth rates of producer services among provincial regions are uneven; both fast-growing and slow-growing regions can be observed outside metropolitan areas (Illeris 1991, 101). In the recent KIBS research, the specific profiles in the composition of different KIBS branches in individual regions have been highlighted (Strambach 2001, 57).<sup>42</sup>

Concerning the focus of KIBS research, the main contribution of the geographical approach comes from analyses of the role of producer services in regional development. These analyses have applied the view of the supporting function of producer services to the regional context. In addition to the creation of value added and employment, producer services have been argued to enhance the competitiveness of the local economy<sup>43</sup>. In central regions, where

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and skills of labour force - has been explicitly stated. It has been pointed out that in fact a choice between in-house and outside services can only be made when an adequate external supply does exist (see e.g. Marshall 1989, 147; Martinelli 1991a, 26).

<sup>42</sup> Differences between countries have also been examined, both regarding the producer services/KIBS sectors as a whole and regarding specific services (of the older studies, see e.g. Ochel and Wegner 1987, 92; of recent KIBS studies, e.g. Strambach 2001, 56-57).

<sup>43</sup> Hansen tested this view empirically by analysing the effects of education, producer-services density, and metropolitan population size on metropolitan per capita incomes in the United States. Each of the three variables was highly significant in terms of degree of association with variation in per capita income, but the relative importance of producer-services density was clearly greatest. (Hansen 1994, 190-191)



producer services are concentrated, “a virtuous circle” emerges: the growing economy needs more services and the services further promote the growth. In peripheral regions, the absence of external services depresses the demand and is especially disastrous for small firms that have no access to advanced and specialised services. As a consequence, a sharp contrast develops between metropolitan and peripheral regions; it can even be predicted to accelerate in the course of time. (Howells and Green 1986, 111; Illeris 1989a, 67; Martinelli 1991b, 80-81) The revelation of the crucial effects of producer services in local economies has significantly increased interest in these services and later in KIBS and has led to policy considerations among regional development bodies<sup>44</sup>.

From the viewpoint of this study, the observation of the active, sometimes leading role of producer services made in the connection of regional studies is especially important. Researchers have found that many producer services do not passively follow the location of their customers. What is developing is rather a mutual dependency. Advanced manufacturing industries also depend on the local presence of qualified services; a high quality service environment attracts new manufacturing investment. (Illeris 1989a, 134; Marshall 1985, 357; Wood 1986, 39) Producer services may even be “the controlling partner”, which organises design and the marketing, subsequently seeks manufacturing firms with the capacity of the producing the goods demanded, and finally steers the total process (Illeris 1989a, 58).<sup>45</sup>

Even though producer services are important to local economies, they need not to be locally bound. When these services develop further, their markets often extend beyond the region in which they are located (Illeris 1989a, 56; Martinelli 1991, 81). Also new producer services firms, especially in data processing and in engineering consultancy, may serve an extensive market area (Perry 1990, 203). Export of services nation-wide or internationally has been regarded as an important indication of the development of producer services into basic industries. The growth of these services has also been explained by the growth of the export trade. (Goe 1990, 331)<sup>46</sup>

Along with general interest in the international trade of services, studies on the internationalisation of producer services emerged especially from the mid 1980s onward<sup>47</sup>. Attention was paid, among other things, to the development of

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<sup>44</sup> Also researchers themselves have often made conclusions regarding policy measures. For example Martinelli (1991, 85-86) states that in order to correct unbalanced market trends all options available to peripheral regions need to be applied: importing services, supporting local supply and permitting extra-regional direct investments.

<sup>45</sup> Illeris describes examples of this kind of action of producer services as “the controlling partner” in computer and textile industries (Illeris 1989a, 58).

<sup>46</sup> In addition, internationalisation has been considered to strengthen the geographical concentration of producer services due to the better access to global markets from big cities compared with more remote areas (Marshall et al. 1988, 118).

<sup>47</sup> The awareness of the potential for the internationalisation of services began to rise in the early 1980s and was reflected in the call for the liberalisation of trade in services. The inclusion of services in the Uruguay Round of Multilateral Trade Negotiations (1986-1993) stimulated studies on the international production of services. Statistical and analytical attention was drawn to the themes of foreign direct

communication technologies as a factor that greatly enhances the tradeability of services. These technologies enable both locational and temporal separation of service production and consumption in a novel way (Enderwick 1987, 216-217). Howells and Green (1986, 132) defined the main forms of international transactions in services as follows: direct export/import, foreign subsidiaries, services to foreigners in the home country and services provided through contractual relationships. Producer services proved to be one of those sectors where direct export is an important activity. Also multinational enterprises were perceived to be widespread and increasing rapidly in this sector. (Enderwick 1987, 217; Ochel and Wegner 1987, 117-122).

The early studies on multinational enterprises brought into discussion some phenomena that occupy a crucial position in KIBS research still today. First, the linkages between internationalisation and the size of producer service companies appeared to be not straightforward. Some studies showed that certain multinational companies, for example in public relations and market research, were very small; barriers to operating in specialised business service markets may be low even on an international level. (Howells and Green 1986, 135) On the other hand, in some producer services, for example in accountancy, a few big multinational companies were shown to control the greater part of the market (Marshall 1985, 359). Secondly, service packages were perceived to become all the more common in services offered on a global basis. The demand of large multinational clients for a complete package instead of separate contracts for each service was seen to be behind this development. As a consequence, diversification of established services into other service branches takes place: engineering companies extend their activities to IT services; accountants expand into legal services, IT services and management consultancy; advertising firms and data banks provide consulting services. (Howells and Green 1986, 135; Marshall 1985, 357; Ochel and Wegner 1987, 116)

In addition to the convergence tendencies inside the producer services sector, the boundaries between manufacturing and services were found to become blurred. Many producer services take the intervening material form of a good, and manufactured goods include more and more service components. (Illeris 1989a, 18; Marshall et al. 1988, 4) These service components are often used as a means of locking in customers to the company. As an empirical example of this kind of use of producer services, the linking of consultancy to the purchased products was described. (Marshall 1989, 145).

The significance of internationalisation for innovativeness was referred to in some studies. It was noted that the penetration of foreign services companies to

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investment, trade and multinationals in services. (Miozzo and Miles 2003a, 15; Roberts 1998, 1) Since then these issues have been examined in several scientific fields. In addition to the detailed references included in this study, service marketing and operations management perspective regarding services can be mentioned as important fields. (Besides the internationalisation of services, many other important issues - e.g. the formation of networks and the life cycle thinking to be discussed later in this study - have been examined in the fields of service marketing and management.)

new markets was often based on innovative and qualitative aspects rather than on cost and efficiency. The introduction of new services and new forms of organisation was often associated with the location of foreign companies in a country. (Howells and Green 1986, 139) The relationships between producer services and innovation, a question referred to occasionally since the early studies, began to arouse interest also more generally at the end of the 1980s. The contribution of producer services to productivity was all the more often seen to derive from their role in innovation activities, both in the emergence and in the diffusion of innovations. Producer services were regarded as a crucial locus of innovation and as important carriers of innovations. (Enderwick 1987, 219; Illeris 1991, 95; Martinelli 1991a, 24 and 1991b, 80). This view was confirmed in a few empirical studies, too. MacPherson (1988, 960), for example, found that firms with producer-service linkages are more likely to produce product innovations than are their counterparts who operate without external support. In addition, these firms are more active in exports.<sup>48</sup>

The shift of the focus to innovation linkages can be regarded as the watershed between the earlier producer services research and the recent KIBS studies. Along with this shift the knowledge functions of producer services - combining knowledge from different sources and implementing it into client enterprises - came to the fore (cf. Moulaert and Daniels 1991, 3). Instead of the whole producer services sector, specific knowledge-intensive units, where the proportion of highly educated labour force is great, became the centre of attention (e.g. MacPherson 1988, 953-954). A prerequisite for the emergence of KIBS research was, however, the development of the innovation conception as such. Understanding the crucial importance of the innovation activities in the economy as well as a broader perspective regarding the nature of innovations were essential in this respect. These new insights have notably improved possibilities to perceive the mutual relationships between innovation and services - including relationships between KIBS and innovation. After its emergence, KIBS research has to a great extent proceeded hand in hand with the more general research into service innovations.

## 5.5 Summary of the development of producer and business services

KIBS are a part of the broader category of business services which in turn belong to the still broader category of producer services, i.e. services that are directed to businesses and organisations, not to private households. Studies on producer services have been conducted since the 1960s. The rapid growth of these services was the phenomenon that stimulated research at the early stage; studies were targeted in the first place to explanations of the growth. Interest in

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<sup>48</sup> However, MacPherson cautions that the results should not be interpreted as causal relationships. Causality can run in either direction: some firms exploit external services in order to innovate, whilst others do so because they innovate. (MacPherson 1988, 965) The comment is applicable also to studies where the use of external services has been explained by characteristics of firms (see Chapter 5.3).

producer services was closely connected with interest in the general development of the service sector. Previously the service sector had been to a large extent neglected as a research topic; in the spirit of classical economics it had been considered non-productive and secondary compared with manufacturing. However, the continuous decline of manufacturing and the simultaneous increase in services directed attention towards this part of the economy. In addition to traditional consumer services, attention was drawn to services targeted to businesses, and it was perceived that these sectors grew even more rapidly than services on average.

In the explanations of the producer services' growth, the genuineness of the growth has been a permanent matter of controversy. Especially in the 1980s, linking the growth mainly to the outsourcing process was a common attitude. The proponents of this view argued that in the growth of producer services it was not a question about real increase in business and employment, but only about a shift of activities, conducted earlier in-house, to independent firms. Even though this argument is brought up occasionally even today, the outsourcing explanation has been proved far too simple and insufficient by majority of studies. It has been shown that a displacement of in-house services in the connection of the growth of independent producer services has not occurred. Instead, growth has been achieved in internal and external services simultaneously, and these two types of services even support each other. Consequently, studies that emphasise the overall demand for producer services and new needs behind this demand have gained ground.

In addition to the rapid growth, the significance of producer services for the productivity and competitiveness of other industries was already noticed in early studies. From the late 1980s onwards, the role played by producer services in the economic development through their supporting activities has become the centre of attention. For a long time the contribution of producer services was analysed mainly in relation to manufacturing. The importance of these services was seen to stem from their nature as intermediate inputs in production. In the course of studies it was, however, perceived that a large part of demand for producer services came from other service firms and from the public sector. Furthermore, the relationship between manufacturing and producer services was shown to indicate mutual interaction, not one-sided dependence of services on manufacturing. In the studies on regional development it was found that producer services might even be the active partner that attracts new manufacturing investments to specific areas. These findings resulted in a new attitude towards producer services: they were seen as independent industries and as an important research topic as such. Studies on the supply side and the internal development features of these services became all the more common. From the standpoint of KIBS-research, especially important were examinations of producer services' international linkages and of linkages to innovation.

The transfer of research focus from the broader category of producer services to the specific category of KIBS implies that the characteristic of knowledge-intensity is brought up as a crucial issue. The significance of knowledge for

productivity as well as the central position of expertise in producer services were already noted in earlier studies. Empirical examinations showed that access to specialised knowledge and expertise possessed by firms in producer services was often the main motive in the use of these services. Even though specification of different types of producer services was necessary for a more sophisticated analysis of the role of expertise, the main idea was already presented very clearly in this broader context by some researchers. Towards the end of the 1980s the contribution of producer services was all the more often analysed in terms of their supporting role in innovation. A prerequisite for the emergence of the actual KIBS research was, however, the development of the innovation conception as such. This new innovation perspective is presented in the following main chapter together with the theoretical analyses and empirical findings of the KIBS research. Before that, Table 9 summarises the view of this study about the development towards deeper understanding of the nature of producer and business services.

Table 9: The main stages in the development of research into producer and business services according to this study

<b>Framework of studies on producer and business services</b>	<b>Focus and central arguments of studies</b>
The emerging service economy	The service sectors are important as the third, continuously growing main sector in the economy; also services can be productive. Inside the service sector there are different sub-sectors, among which producer services are especially interesting due to their exceptionally rapid growth and contribution to other areas in the economy.
"The outsourcing explanation"	The growth of producer services is based on transfer of activities conducted earlier in-house in manufacturing to specialised service firms. Economic factors and the generalisation of flexible production models are important background reasons in the development.
Demand for expertise	The growth of producer services is demand-led: the development of the division of labour increases overall demand for expert services; both external producer service firms and corresponding in-house activities in manufacturing grow.
Supply and characteristics of producer services	Producer services serve not only manufacturing, but other services and the public sector, too. Producer services are developing into independent industries demonstrating interesting internal characteristics, like the issues of company formation, geographical location, internationalisation etc.

## 6 FOCUS ON KIBS: THE ROLE OF KIBS IN INNOVATION

In the 1980s, both political decision-makers and researchers began to pay more and more attention to innovation activity as a factor that has an essential effect on economic growth and welfare. In societal decision-making, discussion on innovation policy was initiated, besides industrial and technology policies, and in the 1990s development of national innovation policy came to play a central role in many Western countries. Innovation policy has become the main cornerstone of many industrial policy strategies, and the need to coordinate innovation policy with macro-economic policy has been emphasised. (Lundvall 1999b, 415-416) At the same time, research into innovation activity has become considerably more wide-scoped. Although the classical economic theoreticians Smith and Marx had already stated that "profits derive from innovations", research into innovation activities was minor up to the 1960s. During the next two decades, innovation studies emerged but they focused on analysis of individual innovations and their conditions for success. It was not until the 1980s that the unit of observation covered the nature, prerequisites and effects of innovation activity as a whole. (Cantwell 1999, 226; Coombs 1988, 295; Freeman 1991, 499)

The interest shown in innovation activities reflects both the advances in science and the real growth of the importance of innovation activities (cf. Dosi 1988, 221). In science, many new schools in different scientific branches have contributed to the new insights into innovation. In economics alone such new schools are evolutionary economics, institutional economics, new regional economics, the economics of learning and knowledge and the economics of innovation (Lundvall 1999b, 409). The real growth of the importance of innovation activities has been linked with several simultaneously affecting societal phenomena: globalisation, deregulation and liberalisation of markets, the ICT revolution, the increasing complexity of science and technology, and changing demand patterns (Schienstock and Hämäläinen 2001, 20-21).

At a more detailed level, the effects of these phenomena on innovation activities have been analysed from two main perspectives: from the perspective of the globalisation of economy and from the perspective of the knowledge society.<sup>49</sup> Globalisation, which involves not only the increasing border crossing of economic activities, but also the merging of national markets into one unbounded world market<sup>50</sup>, has markedly changed the mechanisms of creating competitive advantage both on the national, regional, and on the company level. It has tightened competition and enhanced the uncertainty and turbulence in the economy, which has resulted in a demand for continuous adaptation and renewal. Globalisation is therefore a major challenge that makes it necessary to

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<sup>49</sup> Globalisation and the development of the knowledge society as factors increasing the importance of innovation activities are also in interaction with each other. When considering these as two different standpoints, the emphasis in the case of globalisation is on the related economic elements, e.g. on elements linked to international agreements on the liberalisation of the markets.

<sup>50</sup> Castells (1996, 92) characterises a global economy as an economy which has the capacity to work as a unit in real time on a planetary scale.

increase innovativeness in order to keep up competitiveness. On the other hand, globalisation also renders the achievements of science and technology international, thereby offering new opportunities for innovativeness. (Schienstock and Hämäläinen 2001, 21-23)<sup>51</sup>

Innovation studies that stress the development of the knowledge society start from the argument that in modern economy the key resource is knowledge. At the beginning of the 1990s it was concluded from this that it is above all important to reinforce the knowledge base and to invest in information infrastructures. (Lundvall 1992, 1 and 1999a, 19) Towards the end of the decade and at the beginning of the new millennium, the process of learning has become increasingly emphasised instead of the stock of specialised knowledge. According to Lundvall, who prefers the term “learning economy”, knowledge has been important in all development stages of the society; what is new is the essentially increased rate of change which causes the need for rapid learning. What matters for economic performance is not so much the knowledge possessed by agents and organisations at a certain point of time but rather the capability to learn and forget<sup>52</sup>. (Lundvall 1999a, 21) The central role of producing new knowledge brings innovation activities to the core of the analyses of the knowledge society. The knowledge economy is fundamentally an innovation-driven economy (Schienstock and Hämäläinen 2001, 20).

Besides the new insights concerning the importance of innovation and the underlying societal factors, thinking about the nature of innovation activities has also changed in many respects. In the 1990s the new research findings began more and more to crystallise into an overall perspective of the dynamics of modern innovation processes. This new understanding provides the essential preconditions for perceiving the contribution of KIBS to innovation (cf. Strambach 2001, 56). In the following, the most important advances from the viewpoint of KIBS research will be studied as three different entities: firstly, the new findings concerning the nature of innovation activities in general; secondly, the innovation systems thinking; and thirdly, the findings concerning specifically service innovations. After this, the research findings regarding the role of KIBS in innovation will be discussed against the background set up by the general results of innovation studies. In this, the discussion will divide into an analysis of the role of KIBS as innovators, on one hand, and their role as a part of the innovation infrastructure, i.e. as carriers and facilitators of innovation, on the other. All these analyses together aim to answer the second research question: What is KIBS' role today in the economy and society especially in view of innovation activities?

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<sup>51</sup> This does not mean that the impacts of globalisation could be interpreted one-sidedly innovation advancing. Big international companies dominating the market may also cause a decrease in competition and apply the brakes to the spreading of new ideas and products.

<sup>52</sup> Johnson (1992, 29) emphasises forgetting as an essential and integrated part of learning and states that its role in the development of new knowledge has possibly been underestimated.

## 6.1 New insights into the nature of innovations

In the earliest theories dealing with the nature of innovation activity, the role of extraordinary individuals, i.e. inventors, was stressed. Similarly, the theory of Schumpeter, the classic in the field of innovation research, continued to put emphasis on the individual, but instead of the inventor he raised the entrepreneur as an innovative agent to a central position<sup>53</sup>. Cooperation and organised innovation activities grew in importance as the R&D laboratories of enterprises became more general in the early 1900s. (Lundvall 1992, 9; Nelson 1988, 219; Schienstock and Hämäläinen 2001, 49) Little by little, a conception of innovation activity was formed which became known as “the linear model of innovation” (Kline and Rosenberg 1986, 285-286); also the term “serial model” has been used (Jorde and Teece 1990, 77). According to this conception, basic research produces theories and findings that are redefined in applied research, then tested in the development process, and after that marketed as industrial innovations and taken into use.

The linear innovation model has been prevalent up to today, but since the latter part of the 1980s, more and more criticism has been presented against it. Along with this criticism, a new kind of view has emerged. The central arguments of this view are the following:

- innovations are embedded in social activities; they are not exceptions nor belong only to the scientific context
- there are many kinds of innovations, not only radical inventions or technological innovations
- innovation is closely connected with learning
- tacit knowledge plays an important role in innovation
- innovation is a complex process, not an event
- the creation and diffusion of innovations are intertwined, not separate stages
- a large number of different actors are involved in the innovation process.

In the following the argumentation concerning these different aspects of innovation activity will be examined in some more detail. Attention will be particularly paid to points of view that are important in terms of the later discussion of the role of KIBS in innovation.

One of the starting points of the new approach is that while the idea of innovations as extraordinary events may be adequate in pre-industrial societies, it is no more valid today. In modern capitalism innovation is a fundamental, inherent and ubiquitous phenomenon. Innovations are an essential part of all economic and societal activity; they are not limited to scientific contexts or to cognitive processes. New scientific knowledge will not automatically lead to an

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<sup>53</sup> According to Schumpeter, the essence of entrepreneurship lies in the creation of innovations. He defines “an enterprise” as “the carrying out of new combinations”, and “entrepreneurs” as “the individuals whose function it is to carry them out” (Schumpeter 1934, 74). This definition shows that Schumpeter largely identified innovations with new combinations, although he also discussed discontinuities in economic development using the term “creative destruction” (Schumpeter 1942, 81-86).



increase in innovation activities and neither is it necessary for innovation to occur. Innovation can be triggered by other causes: learning processes in production, new market demands or possibilities to apply knowledge in new contexts. The developmental work taking place in the everyday practice of enterprises, which is essentially affected by market demands, plays a crucial role. Knowledge creation is intertwined and co-evolves with practical activities, and innovations are a natural mode for acquiring competitive advantage. (Lundvall 1992, 8-9; Schienstock 1999, 17-18; Schienstock and Hämäläinen 2001, 50-51)

The earlier innovation conception, which emphasised the role of R&D activity, implied that mainly radical technological inventions were referred to by innovations. Along with the new perspective, this view has become broader in two ways. Firstly, besides technological innovations, social and service innovations have now received attention. These will be analysed in more detail in Chapter 6.3. Secondly, the gradual and cumulative aspects of innovation activity - the dependence of future innovation on the past - have been brought to the fore. In innovation it is a question of a new use of pre-existing possibilities and components. This new use is often discovered as a more or less unconscious by-product of production and sales activities. Also more ambitious and conscious searching for new products and processes quite commonly starts with existing problems, i.e. errors and repair problems, and the desire for new features linked with them. This leads to a situation where a large part of innovations are recombinative and incremental in nature, even if the process of innovation sometimes results in radical breaks with the past. (Andersen 1992, 68; Dosi 1988, 223; Lundvall 1992, 8) Recombinative and incremental innovations are especially important in the service sectors, and they will be further discussed in the sub-chapter dealing with service innovations.

New knowledge created in innovation activity is not only incorporated in new products, processes and services, but also in organisational practices; it is internalised by the people involved in the activity. In this way innovation is closely linked with learning. In the case of learning, too, everyday routine activities occupy a central position in addition to conscious searching and exploring. New knowledge is to a great extent gained from economic activities which are not explicitly aimed at its generation - this kind of learning is often called learning-by-doing or learning-by-using.<sup>54</sup> An especially important form of learning rooted in routine activities is learning-by-interacting. (Johnson 1992, 32; Lundvall 1992, 9-11) Correspondingly, it has been pointed out that the only knowledge relevant to innovation is not knowledge of facts and reasons, i.e. "know-what" and "know-why" -types of knowledge. "Know-how" based on more practical skills as well as knowledge that relates to interactive processes and markets, i.e. "know-who", "know-when" and "know-where" are also essential. (Lundvall and Johnson 1994, 27-28; cf. Aaltonen and Wilenius 2002, 156)

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<sup>54</sup> The "learning-by-doing" concept originally stems from Arrow (1962) and the "learning-by-using" concept from Rosenberg (1982, 120-140).

Knowledge of the latter types exists only to a small extent in a codified and explicit form; the majority of it is so-called tacit knowledge. One of the merits of the new innovation research is that it has brought out the significance of tacit knowledge for economic success. The idea of tacit knowledge originally comes from Polanyi (1966), but especially the Japanese Nonaka and Takeuchi have further developed it<sup>55</sup>. They characterise tacit knowledge as personal and subjective, experience-based, context-specific knowledge, whose communication and distribution requires simultaneous processing of the matters at hand and therefore joint practical activities (Nonaka and Takeuchi 1995, 59-61)<sup>56</sup>. Learning-by-interacting is an important means that not only helps those participating in adopting some of their partners' original tacit knowledge, but also in producing new tacit knowledge. Certain parts of the tacit knowledge can be codified, but some parts lose their meaningfulness if written down. The knowledge needed for the formation of trust in the market as well as the informal "know who", which is crucial for networking, are examples of knowledge that is mainly permanently in tacit form. (Lundvall 1999b, 401-402)

The cumulative nature of innovation activity and its connection to learning make it understandable why it is difficult to localise innovation in space and time. In the modern economy innovations are individual events and the achievements of individual inventors only in exceptional cases. Much more often it is a question of a process in which a large number of different actors are involved. (Johnson 1992, 23; Lundvall 1992, 9) The nature of the innovation process is recursive and complex; it is not possible to identify clear sequences of stages in it. Innovation involves a fundamental element of uncertainty; the definition of innovation already implies that the outcomes searched for cannot precisely be known beforehand. Similarly, the procedure leading to a solution is unknown; most often there are several plausible alternatives that have to be explored. (Dosi 1988, 222; Schienstock and Hämäläinen 2001, 51 and 54) All this means that competence in carrying out innovation processes successfully - coping with uncertainty and complexity - is as relevant as the ability to create new ideas. Efficient innovation and knowledge management within and among firms becomes crucially important. (Bessant 2002, 128; Schienstock and Hämäläinen 2001, 51 and 54)

The recursive and process-like nature of innovation means that it is not possible to make a sharp distinction between the creation and diffusion of innovations and to examine them as separate stages. Innovation does not stay the same throughout its diffusion. (Lundvall 1992, 8-9). The active role of users has been highlighted in recent innovation literature. Three intertwined dimensions are

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<sup>55</sup> In order to understand the nature of tacit knowledge, Nonaka and Takeuchi, as well as many other innovation researchers, consider it important to differentiate knowledge from information. Information is a flow of messages, while knowledge is created by that very flow of information, anchored in the beliefs and commitment of its holder. (Nonaka and Takeuchi 1995, 58; see also e.g. Lundvall 1999b, 400).

<sup>56</sup> Nonaka and Takeuchi have developed a model for examining how tacit knowledge can be transformed to be useful for the whole organisation and how explicit knowledge can be transformed into personal know-how. The model goes through four modes of knowledge conversion: 1) socialisation (from tacit knowledge to tacit knowledge); 2) externalisation (from tacit knowledge to explicit knowledge); 3) combination (from explicit knowledge to explicit knowledge); and 4) internalisation (from explicit knowledge to tacit knowledge). (Nonaka and Takeuchi 1995, 61-70)

included here: re-invention, the creation of a context-specific meaning, and the restructuring of social relationships. For example, new technologies do not enter production processes as completed and unchangeable artefacts. The introduction of modern technology and its later use very often include modifications, and therefore an element of re-invention. Technological novelties are also actively interpreted and appropriated by the users; one technological artefact can have different meanings for different user groups. Furthermore, innovation presupposes that social practices change together with the incorporation of new technologies; product and process innovations become tightly linked with each other. (Schienstock and Hämäläinen 2002, 66; Tuomi 2002, 10-11). The user-centric point of view has two implications. First, an important prerequisite for successful product development is that the users are involved in the innovation process (Lundvall 1999a, 26). Secondly, use-related knowledge is as critical as technological expertise. Today the limiting factor in the diffusion of new innovations is more often the capability of users to learn how to integrate new technology into their everyday practice, rather than any lack of new insights. (Tuomi 1999, 145)

Interactive learning, in which users also participate, highlights the fundamentally social nature of the innovation process (cf. Lundvall 1992, 9). Knowing how to do things in isolation is not the decisive type of knowledge any more. Companies' capability to innovate to a great extent depends on knowledge produced externally. Cooperation with firms and other organisations is an important factor that shapes innovation processes. Innovation is a collective undertaking which involves a number of different actors with different skills and competences. (Kash and Rycroft 1994, 40-41; Lundvall and Johnson 1994, 25; Schienstock and Hämäläinen 2001, 51-52) Understanding innovation as a multi-organisational phenomenon (Hauknes 2000, 39) has led to the examination of the systemic aspects in the innovation processes. The concept of systemic innovation highlights interdependencies between a firm and other organisations - the networks of innovators and the institutional set-up that forms the framework for innovation. (Freeman 1991; Lundvall 1992, 10; Schienstock and Hämäläinen 2001, 52) In the following, the central arguments and findings based on this approach will be discussed in some more detail.

## **6.2 Innovation systems approach**

The innovation systems approach appeared initially in the form of national innovation systems (NIS) studies. The first important developers of the NIS concept were Freeman (1987), Lundvall (1992) and Nelson (1993). The national focus in the innovation systems research still continues to be strong, but it has been accompanied by studies seeking to analyse the notion of systems of innovation on a sub-national scale and at an international level. Furthermore, some studies have examined innovation systems from the sectoral or

technological perspective. (Archibugi et al. 1999, 2; Edquist 1997, 3-5 and 11-12)

The interest in national innovation systems started from the observation that there are differences between countries in economic performances even when the countries are facing similar opportunities. Also highly advanced countries differ greatly from each other in terms of production efficiency, rates of innovation, rates of adoption and diffusion of innovations etc., and there is only limited convergence towards the most efficient ways of doing things. This observation led to the idea that the performance of national economies depends on the organisational and institutional arrangements linked to innovation and growth. These arrangements and the processes by which particular institutional contexts foster or hinder location-specific patterns of innovation are at the heart of NIS studies. However, the studies differ from each other as to how extensively various organisations are included in the innovation system. In addition, the studies are to some extent differently emphasised depending on whether their prime focus is on public institutions and policies supporting directly or indirectly innovation, or more on the innovation strategies of firms and innovation networks between companies. (Dosi 1999, 35-40).

In the narrowest sense, the national innovation system only includes those organisations that are directly related to the process of searching for new knowledge: the R&D departments of firms, technological institutes and universities. In a broader sense, it also refers to those organisations that facilitate the innovation process and provide additional input into it. These kinds of support organisations are training organisations, technology transfer institutes, investment banks and economic associations, among others. In a still wider sense, a national innovation system includes all the sectors of society that contribute to the acquisition of knowledge: i.e. also the production system, the marketing system, and the system of finance. (Lundvall 1992, 12; Schienstock and Hämäläinen 2001, 78-79)

The broad definition of NIS is based on the new innovation perspective which emphasises the close relationship between innovation and learning. From a theoretical viewpoint, all those parts in the institutional set-up where learning takes place are relevant for the innovation system. In practice, it is, however, difficult to determine in detail the institutions that should be included, not least due to their changing roles in the innovation process in different historical periods. The proponents of the broad concept of NIS have therefore suggested that the definition should be kept open and flexible to a certain extent. (Lundvall 1992, 12-13; Nelson and Rosenberg 1993, 5)

It is more essential to see the connections of the innovation system with other sub-systems of the economy and society than to draw precisely the boundaries of the system. In the case of the public sector, it is important in this respect to take into account, not only the sub-systems supporting innovation activity, but also the systems that through regulations and standards influence the rate and direction of innovation. Besides the afore-mentioned, the labour market and

legal systems are highly significant; the former is connected to innovation activity in terms of its function in the allocation of skills and competences, and the latter in terms of the topical issues of property rights and competition law. On the other hand, it has been pointed out that all the organisations in society - even the universities - also have other tasks than those connected with innovation activity. It is therefore often more fruitful to examine the innovation-related functions of different organisations rather than the organisation itself. (Lundvall 1992, 14; Schienstock and Hämäläinen 2001, 79 and 82-83)

In addition to the role of the public sector, the internal organisation of private firms and the inter-firm relationships are important aspects of the system of innovation, and national differences can be discerned in these, too. Particularly the proponents of the broad NIS concept emphasise that the national innovation system is firmly rooted in a national system of production, since most innovations are developed by firms. For innovation activities, a fundamental dimension in the organisation of firms is the coordination of distributed knowledge. The management of knowledge flows and learning processes affects in an essential way the innovative capability of the firm. (Dosi 1999, 41; Lundvall 1992, 10 and 14) Further, the interaction with the market and with related firms, such as customers, suppliers and sub-contractors, is of critical value for innovation. Also relations to competitors may be quite important for the innovative process. (Freeman 1995, 11; Gelsing 1992, 117). Cooperative relationships among firms are today gaining more and more often the form of network cooperation; joint ventures, licensing arrangements, R&D collaboration and informal networks can be cited as examples of this. Informal networks play an especially important role in the transmission of tacit knowledge. (Freeman 1991, 502-503)<sup>57</sup> The fact that recombination is nowadays the usual way of creating innovations increases the significance of both networks and other forms of collaboration. In the context of recombinative innovations, not only knowledge and characteristics of goods and services are combined but also human resources and institutions are brought together. (Gallouj and Weinstein 1997, 553)

The extension of innovation systems research from the national level to the regional, or in some cases international, level is linked with the discussion about the role of nation-states in the globalising world; this discussion became all the more spirited during the 1990s. It has been argued that nation-states are losing their power both "upwards" to transnational institutions and "downwards" to regional actors: innovative enterprises are increasingly international, and at the same time innovative regions that specialise in certain technologies and sectors arise inside individual countries (see e.g. Ohmae 1993). Some researchers have analysed the globalisation and regionalisation tendencies as interconnected and mutually reinforcing: increasing internationalisation does not entail the erosion of regional specialisation, but has its roots in regions and thus

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<sup>57</sup> The concept of innovation network has sometimes been used as synonymously with the concept of innovation system. However, as Schienstock and Hämäläinen (2001, 81) point out, with good cause, the network is just one form of governance in innovation systems. There also exist innovation systems that are based on hierarchical relationships.

supports and encourages regional development (Howells 1999b, 86). On the other hand, it has been pointed out that acknowledging the significance of trans- and subnational levels does not imply that national innovation systems have lost their role (Edquist 1997, 12; Lundvall 1992, 3; Porter 1998, 158). For example, educational systems and basic research are still largely national (Nelson 1993, 519; Pavitt and Patel 1999, 113-114). Due to all this, many researchers prefer a multi-layered approach, which examines innovation systems of different levels and their interaction<sup>58</sup>.

The importance of the regional level in the analysis of innovation systems stems from the nature of interactive learning that plays a crucial role in innovation processes. Know-how sharing contains elements that require physical proximity; learning-by-doing and learning-by-using serve as good examples of this. Although the new information technology increases the possibilities for codifying many parts of the innovation process and transferring them over long distances, much of what needs to be communicated remains tacit in nature. Regional innovation systems (RIS) have been seen to represent crucial arenas for tacit know-how sharing. (Dosi 1999, 40; Howells 1999b, 78 and 84).

The opportunities for contacts and informal links provided by spatial proximity constitute the first point in favour of considering innovation systems at the regional level. There are also other rationales behind focusing on RIS. The peculiarities of the institutional fabric vary not only between nations, but between regions, too. In addition, it has been pointed out that the primary place of firms' decision-making is at the regional level. Furthermore, there are often localised pools of specialised expertise for certain industries. Finally, actors in the same region share, at least to some extent, common perspectives, norms and culture, which helps in creating an atmosphere of trust and confidence. All these factors contribute to the emergence of innovative milieus at the regional level. (Howells 1999b, 78; Kautonen 2001, 38; Zenker 2001, 207-209)

Internationalisation, in turn, manifests itself in a number of ways in innovation activities. Archibugi and Iammarino separate three main types of phenomena in internationalisation and globalisation of innovation:

- international exploitation of nationally produced innovations
- global generation of innovations, and
- global techno-scientific collaborations.

The first group includes the exports of innovative products and those foreign direct investments that involve the production of innovative goods created in the host country. These are the oldest forms of cross-border diffusion of innovations and represent internationalisation rather than actual globalisation. Innovation activities of multinational enterprises belong to the second group. The third group has traditionally included the cross-border cooperation of universities and research institutions in innovation activities. In recent times there has been a considerable increase in collaboration of this kind among private companies. (Archibugi and Iammarino 1999, 243-246) The more advanced enterprises also

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<sup>58</sup> For example, according to Porter, competitive advantage emerges from the combination of national and local conditions (Porter 1998, 158).

forge contacts with the leading departments of research institutions on a world scale (Schienstock and Hämäläinen 2001, 159).

Multinational enterprises (MNEs) have been considered to play an especially important role in the internationalisation of innovation activities. Innovations emerging in MNEs are authentically global from the first moment, and MNEs are responsible for a major part of industrial R&D and patents spread in the foreign markets. On the other hand, empirical results describing the behaviour of MNEs show that these enterprises still have, in most cases, a clearly identifiable home country, where innovation activity is concentrated. The tendency to conduct innovation in a decentralised way in other countries is only slowly increasing. Due to these results, many researchers are fairly cautious as to whether it is possible to speak about the emergence of innovation systems on an international or global scale, despite the internationalisation of innovation activities. (Archibugi and Iammarino 1999, 245 and 251; Howells and Roberts 2000, 262; Pavitt and Patel 1999, 96-97). A common conclusion is that the best benefit from internationalisation can be derived when the innovation activities are built upon established national and local strengths and, simultaneously, the ability to learn from what is being done elsewhere is improved. The latter means the use of benchmarking, technology assessment and foresight for identifying, analysing, adopting, diffusing and utilising the technological, economic and social innovations of other countries. (Cantwell 1999, 239; Schienstock and Hämäläinen 2001, 12)

There are sectoral layers alongside the geographical layers: sectoral and technological systems of innovation which crosscut transnational, national and regional systems of innovation. Sectors and technologies have dynamics of their own and a powerful shaping influence on the structure and dynamics of geographically formed systems (Breschi and Malerba 1997, 130; Carlsson and Stankiewicz 1995, 49-50). On the other hand, national contexts have important influences on sectoral conditioning and performance (Nelson 1993, 518). The need to understand better the interrelationships between the geographical and sectoral systems has been brought up. It has been suggested that the analysis of these interrelationships could yield valuable insights on the basis of which the innovation systems approach could be developed further (Archibugi et al. 1999, 2; Dosi 1999, 44).

At the same time as the innovation systems approach has gained popularity during the last decade, it has also been criticised by referring both to the deficiency of a solid theory<sup>59</sup> and to the small amount of empirical evidence. More specifically, it has been remarked that the actually existing flows and linkages in the innovation systems have been explored only rarely, and due to this, the approach has yielded few insights into the dynamics of the innovation process. Further, the approach has been blamed for paying only scant attention to the economic outcomes - in terms of growth and employment performances - of the operation of innovation systems. Finally, the lack of predictive insights

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<sup>59</sup> Among others, it has been pointed out in this context that the innovation systems approach makes hardly any avail of the general systems theory (Archibugi et al. 1999, 4).

into how national systems of innovation might develop in the future has been mentioned as a weakness. (Archibugi et al. 1999, 6-7; Pianta 1999, 49)<sup>60</sup>

Without denying the justifiability of this general critique, it can, however, be stated that the innovation systems approach has significantly contributed to the issues important for KIBS research. It has brought to the fore the question of how to coordinate and manage the processes of knowledge creation, acquisition, distribution, and use in order to rapidly and continuously produce innovation (cf. Schienstock and Hämäläinen 2001, 29 and 75). In addition, the functioning of KIBS within the innovation systems is one of those subjects that have been studied to some extent empirically, too. All in all, the innovation systems approach has largely stressed the same issues on which the new broad conception of innovation is based, especially the importance of external linkages for innovative success and the significance of innovation diffusion besides innovation creation (Freeman 1995, 10-11). These same arguments and topics will be explored from a slightly different perspective while discussing service innovations in the next sub-chapter.

### **6.3 Special characteristics of service innovations**

The traditional notion of services as inherently unproductive (cf. Chapter 5.1) has its counterpart in the conceptualisation of innovation: services have until recently been considered to be of secondary importance in innovation. Usually services have been seen to represent mainly consumers of innovations, occasionally imitators of, or facilitators to, innovations of manufacturing firms. The roots of this way of thinking can be found in the sharp distinction between manufacturing and services, accompanied by a manufacturing-based innovation paradigm, i.e. a paradigm that focuses on technological innovation based on physical artefacts. The linear model of innovation has narrowed the perspective further: by defining R&D systems as the source of innovation, it has reduced the possibilities to capture less tangible, non-technological innovation, which is typical of services. On the basis of the linear model, innovation measurement has been centred on indicators that are unfamiliar to the service sectors, like formal R&D and patent activities. (Gallouj and Weinstein 1997, 537; Howells 2000, 6; Miles 1993, 661)

Along with the servicisation of society, the argument of unproductivity and uninnovativeness in services has, however, become all the more untenable

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<sup>60</sup> Finland is one of those countries where the innovation systems approach has occupied a central position in technology policy. Miettinen has made a critical analysis of the Finnish experience and in this context also discusses more generally the scientific status of the NIS concept. According to him, it remains an open question to what extent the NIS rhetoric has really reformed the actual policy making practices. Due to the ambiguities of the NIS concept, Miettinen prefers speaking about interdependencies and interactions between institutions and policy areas instead of postulating the existence of a "system". He considers it important to study innovation at the level of concrete products, processes and networks of actors. (Miettinen 2002, 37, 77 and 86)



because it implies that these features would apply to the majority of economy. As general interest in innovation activities began to grow in the 1980s, also the first studies targeted specifically on service innovations appeared<sup>61</sup>. In practice, innovation measurement was, however, focused on formal R&D until the late 1980s (cf. Freeman 1995, 9-10). After this, the need for a broader perspective has been clearly acknowledged. The new insights into the nature of innovation activities have played an important role in changing the view of the low innovativeness of services. With the adoption of a new innovation conception, which implies that not only radical technological inventions are counted among innovations, many service sectors have been found to be innovative. The emphasis put on learning and on human resources as underpinning innovations has been especially valuable for the new findings regarding services. (cf. Evangelista and Sirilli, 1998, 252)

The development of an innovation paradigm that takes into account the characteristics of services as well as the development of associated alternative indicators are still in the early stages (Howells 2000, 27). Nevertheless, based on the new innovation conception, quite a good number of studies on the service sectors have been carried out. These studies have laid the ground for a view of those special issues and features that should be considered in research into service innovations. The following issues and characteristics of services are among the most important:

- "unplanned nature" of service innovations and the difficulty of identifying an innovation particularly at the initial stage
- relationship of service innovations to tailor-made services
- scope of the market for service innovations: regional and local innovations
- significance of learning processes behind incremental innovations
- significance of innovation combinations
- intertwining of product and process innovations and their linkages to broader social innovations
- production of innovations in cooperation with the client
- production of innovations in service companies in connection with many different functions, only rarely in separate R&D units.

It is typical of service innovations that they are seldom the results of planned and deliberate activity. New services usually emerge in the process of provision due to special requirements that were not visible beforehand. No attention is necessarily paid to their novelty, and they are not codified. The service provider may, however, become aware of an innovation opportunity when the new service is repeated; after this the service will often be integrated into the firm's strategy. All in all, identifying the transition from one service to another is,

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<sup>61</sup> One of the first analyses of innovation activities in the service sectors is Barras' view of a "reverse innovation cycle" (1986, 165). According to this view, in service sectors the innovation cycle takes the form that is the converse of the traditional industrial cycle: process innovation precedes product innovation. However, even in the approach of Barras, service innovations depend heavily on manufacturing. The "reverse innovation cycle" originates from a situation where service sectors adopt new technologies developed by manufacturing. The purpose of this adoption is to increase the efficiency of service processes and later the quality of service. It is not until after these stages that wholly new service products are developed.

however, much more difficult than recognising an industrial product as a new one, since services are not as well defined as material products. As a consequence, service companies often cannot tell whether they have produced innovations - innovation activities become underestimated. (Gallouj and Weinstein 1997, 549; Preissl 2000, 130 and 132) For instance, it is typical that service companies speak about customer satisfaction or the improvement of service quality, when they actually seek to increase their innovativeness (Sundbo and Gallouj 2000, 45).

On the other hand, a reverse kind of a problem also occurs: tailoring of a service to the needs of the customer, i.e. customisation, is typical of the service branches, and it is sometimes confused with innovation production. As each service act is unique - a response to a specific problem in a specific environment - it seems to be new. (Preissl 2000, 130) However, an individual tailor-made service as such is not an innovation, because an innovation has to be, at least in some parts, more widely applicable and replicable. It is a wholly different matter when the tailor-made service includes new operating models that can be transferred from one situation over to another.

When considering the extension of the applicability of innovations, it is crucial to note that the competitive conditions and relevant markets vary between industries. In the case of service innovations this is important because these innovations are often new in a specific area only, not in the framework of national economies or at the international level. As the market for service sectors is also often geographically restricted, the regional and local novelties may, however, be of great significance for the productivity and competitiveness of enterprises. Furthermore, the learning processes involved in the provision of local innovations may lead to other applications, whose impact may be much wider geographically. (Preissl 2000, 131 and 133)

Besides the fact that the learning processes and new operating models included in the final service are distinctive characteristics of innovation in the context of tailor-made and local services, they are important in connection to all incremental innovations. The importance of incremental innovations beside radical inventions has been emphasised by the proponents of the new innovation conception, and this type of innovation is particularly common in the service sectors. Incremental innovations differ from random changes in that at least some of their inherent elements and accumulated experience can be codified and formalised so that the solutions are partially and indirectly reproducible. Thus the informational and cognitive inputs behind the final outcome can be widely applicable, although the service provided would be unique and the visible change minor. (Gallouj and Weinstein 1997, 549-550; Preissl 2000, 132)

The new conception of innovation also stresses another mode of producing innovations, which is typical of the service sectors: recombinative innovation. The significance of this type of innovation is linked with the cumulative nature of innovation activities, i.e. with the dependence of new innovations on earlier

knowledge. Along with the need for more efficient recombinations of features of existing services, the possibility of specifying the elements of services - i.e. the application of some kind of modular architecture - has become a topical issue (Gallouj and Weinstein 1997, 552). Modularisation, in turn, is one of the phenomena that show the service sectors to be adopting operational practices that are typical of manufacturing - these phenomena will be discussed again at the end of this sub-chapter. Besides the fact that individual innovations are produced by recombining various aspects of existing services, broader innovation combinations are also becoming more general. These include several individual service innovations or service innovations and technological innovations. In a still more advanced form, innovation combinations are integrated into a new kind of a service which comprises, instead of isolated functions, an innovative problem solution. (Miles 2001, 18; Preissl 2000, 134)

Innovations are generally divided into product and process innovations; organisational innovations, market innovations and delivery innovations are defined as supplementary categories. Though useful from a theoretical viewpoint, the separation of these different kinds of innovations is difficult in service practice. Product and process innovations are in close interaction with one another, especially in the innovation combinations described above (Sundbo and Gallouj 2000, 45). Likewise, organisational innovations are hard to differentiate from process innovations, because in services the processes of production are often nothing else but the organisational settings in a service firm. (Preissl 2000, 132) Delivery innovations, which are often neglected in innovation studies, occupy a very central position in the service sectors. The supplier-client interaction is often a site of innovation and hence, the delivery of the service to the client is the focus of many service innovations. (Miles 1999b, 7) A topical example is offered by the services delivered via the web, which also in an interesting way illustrate the interaction between product and delivery innovations (Howells 2000, 21-22). Finally, innovations connected with products, processes and the immediate markets of companies are in service sectors often closely intertwined with broader social innovations.<sup>62</sup> These refer to innovations linked with the institutional and cultural environment, for example, with regulatory changes or changes in people's life style (Schienstock 1999, 16-17).<sup>63</sup>

The supplier-client interface was already referred to above as an important site of innovations. On this point it is essential that the relations between service suppliers and their clients include more than just the delivery of the service itself. The participation of the client in the service production is one of the fundamental characteristics of service activities. Various concepts, e.g.

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<sup>62</sup> Despite the general underdevelopment of research into services, there were some studies already at the beginning of the 1980s that emphasised innovativeness linked with services: Gershuny and Miles (1983, 83-84) brought up especially the significance of the innovations that concern the mode of provision of final service functions but might not happen within service industries. In their terminology, "social innovations" referred to these kinds of changes in the organisation of services, the increase of self-service being one important example.

<sup>63</sup> The concept of "social innovation" should not be confused with the concept of "social policy innovation", which is clearly more restricted (cf. Karisto 1999, 343).

servuction and co-production, have been developed to account for this client involvement. The interaction between the service company and its clients supports innovations by creating joint learning processes where the creation and codification of tacit knowledge are central. On the other hand, the phenomenon of co-production is another factor that makes identification of the innovations of service firms difficult by means of the traditional methods. Especially in business-to-business relationships it is often hard to locate the innovation within the service supplier or client. For example, it is not unusual for service firms to site their staff within the client organisations for periods of times. (Gallouj and Weinstein 1997, 541; Miles 1999a, 69-70; Sundbo and Gallouj 2000, 44).

Finally, an obvious problem linked with the use of the traditional innovation indicators in the service sectors is that service companies rarely have R&D departments for innovation activities. Rather, these activities are distributed within the company; they are conducted, for example, in connection of strategic planning, training, market development and specific projects. (Preissl 2000, 138 and 144). Investments in human resources play an especially central part in innovative service companies and are often a better indicator of innovativeness in service branches than R&D expenditure or performance.<sup>64</sup> Innovations in the service sectors are often reflected, in addition to new service products and novel service processes, in the increased professional skills of the personnel. In the service sectors, knowledge and skills embodied in individuals correspond to a great extent to knowledge embodied in technologies within the manufacturing sectors. (Gallouj and Weinstein 1997, 543; Miles 2001, 16)

What has been said above does not mean, however, that the traditional innovation measures could not be used at all in the service sectors. One central observation confirmed in several recent studies is the blurring of the boundary between manufacturing and services. Technological products and services are more and more intertwined; correspondingly, service innovations get traits from manufacturing innovations and vice versa. (Miles 1993, 663; Sundbo and Gallouj 2000, 64-65). In the service sectors, convergence can be seen, for example, in the rapid growth of R&D activity by services in most countries (Howells 2000, 10). In addition, services are adopting from manufacturing features like standardisation and modularisation. Economies of scale, reduced costs and improved delivery times cause standardisation pressure in services. However, the need for individual service will continue to play a key role in many service sectors. Therefore new possibilities of combining standardisation and individual customer care through modularisation of services will be particularly important. (Miles 1993, 663; Sundbo and Gallouj 2000, 44).

From the viewpoint of manufacturing, convergence shows itself in that many of the observations made on the innovation activities of the service sectors are more and more valid in the manufacturing context as well. Besides the fact that

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<sup>64</sup> An empirical study conducted in Finland supports this analysis. It shows that service sectors emphasise training investments in their innovation strategies, whereas in manufacturing the orientation is more towards R&D investments. (Leiponen 2000, 41)

technological innovations emerge as a result of many years' systematic work, these innovations, too, are created by chance in the course of various processes. Similarly, recombinative innovation is nowadays a usual way of creating innovations, for example, in the information and biotechnology industries (Gallouj and Weinstein 1997, 552). Innovative problem solutions are all the more often the starting point, not only for service providers, but also for producers of industrial products. The main aim is not merely to offer a certain product to the customer, but to meet the more final demand behind its use; this often requires encapsulation of certain services in the product (Howells 2000, 15). Furthermore, the involvement of the end-user in the innovation process, as well as the significant innovation efforts occurring outside formal R&D departments are becoming all the more common in manufacturing, too (Ducatel 2000, 242; Miles and Boden 2000, 249). Regarding some features of innovation activities, the size of the company is a more important variable than the manufacturing-service dichotomy. For example, the above-mentioned distribution of innovation activities throughout a company and the central role of human capital investments are typical not only of the service sectors, but also of small manufacturing firms. (Miles 2001, 16; Preissl 2000, 126).

To summarise, it can be stated that there are differences in service innovations compared to technological innovations<sup>65</sup>, but these differences should not be exaggerated. Research into service innovation has brought to the fore aspects of the innovation process which historically may have been displayed most obviously in service firms and industries and, consequently, typically been neglected in studies of manufacturing. Nowadays these aspects are, however, more and more widely found across the economy. (Miles and Boden 2000, 249) As a conclusion, many researchers emphasise the need for a more general framework that could be used to analyse innovation processes irrespective of their manufacturing or service background. (Gallouj and Weinstein 1997, 538; Miles and Boden 2000, 258).

For KIBS the research findings concerning the nature of service innovations are important in two respects. Firstly, as KIBS represent a service branch, the same basic features are found in their own innovation activities as in the service sectors in general. Thus research into service innovations lays the ground for discovering the innovativeness of KIBS and for examining their innovations in a sufficiently versatile way. Secondly, when analysing the activities of KIBS, it is important to understand the development of their business environment, in which typical features are servicisation of the economy and convergence between manufacturing and services. The way in which innovation activities change along with these development features is of particular importance because the core of the services provided by KIBS has been seen to lie in the support offered by them to innovation activities.

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<sup>65</sup> Besides the differences discussed above, a topical difference can be seen in the ways in which innovations are protected, i.e. in intellectual property rights (IPR) issues (Boden and Miles 2000, 250) .

## 6.4 KIBS as innovators

In this and the following sub-chapter, the most important research results on the role of KIBS in innovation activities will be presented; the results are based both on theoretical analyses and on empirical studies. The presentation is divided so that KIBS' own innovation activities are mainly described in this sub-chapter and the activities of KIBS as supporters of innovation of other companies in the next sub-chapter. These two aspects of the role of KIBS in innovation - innovation produced within KIBS and innovation produced through the use of KIBS - are not, however, independent of each other (Gallouj 2002, 256). In KIBS firms, as in service sectors in general, innovations are mainly produced together with the client. Thus the picture of KIBS' own innovation activities is supplemented while describing their presence in the innovation processes of clients. In addition, as for both subjects, the study here focuses on the basic arguments of KIBS research. As far as the newest issues and topics are concerned, the discussion will continue in Chapter 7, which lays the ground for the anticipation of the future development of KIBS.

Research into service innovation has concentrated on sectors in which innovations have been considered to be more prominent. Due to their links to knowledge production and use, KIBS have been one of the sectors on which most of the attention has fallen. (Ducatel 2000, 221). As stated above, general research into service innovations has essentially helped to understand the activities of KIBS. But contributions have also been made the other way round. KIBS studies have provided empirical evidence of the fact that services are innovative, and these studies have offered detailed material for the analysis of the nature of service innovations. In the following, research findings that describe the generality of innovation activity in KIBS and the factors influencing their innovativeness will be examined together with the findings that describe the nature and production process of innovations in KIBS.

There are quantitative data on the innovation activities of KIBS available above all on the technology-based KIBS (T-KIBS), because a technology-driven innovation concept has still been the starting point in extensive international innovation studies. The second Community Innovation Survey (CIS2), which describes the situation in various European countries in 1996-1997, is the most comprehensive source of this kind of information. Of the service sectors, the survey includes those branches that have been supposed to be technology-active. In the case of KIBS this means that computer and related services and engineering services are included. Although the survey is technologically oriented, it examines innovation activities quite widely: in addition to R&D activities, the design and implementation of new or improved production processes and of new or improved processes on the market are included. The indicators used consist of both tangible and intangible investments, such as acquisition of machinery, market analysis and staff training. (Eurostat 2000, 45; see also Miles 2001, 14)

There are two kinds of data in CIS2 on the basis of which the innovation activity of T-KIBS can be described: firstly, the propensity to innovate, and secondly, the innovation intensity. The former refers to the share of innovating firms of all firms, and the latter to the share of innovation expenditure of the turnover. Both data show T-KIBS to be highly innovative. In 1996 the share of innovating firms in the entire EU area was 68% in computer and related services and 55% in engineering services. In both branches the share was higher than with services in general (40%) and also higher than in manufacturing (51%); in the case of computer and related services the difference was considerable. (Eurostat 2000, 26) As for innovation intensity, computer and related services occupied the second place of the sectors studied - including manufacturing industries - and engineering services ranked third. The share of financial resources invested in innovation was in the former sector about 6.5% of the turnover and in the latter sector slightly over 5% of the turnover. (Eurostat 2000, 44)

It has been pointed out that T-KIBS are in fact very similar to high-technology manufacturing sectors as regards their innovative activities (Howells 2000, 9; Miles 2001, 16). Besides the high level of innovativeness of T-KIBS described above, this can be seen in certain characteristics of the nature of innovation activities. Especially the generality of R&D activities, which are typical of innovation in manufacturing, can be brought up. According to CIS2, 72% of the innovating computer service firms conducted R&D, 45% on a continuous basis. The corresponding shares in technical services were 58% and 33%. (CIS2 unpublished data, reported in Miles 2001, 16) T-KIBS are also an important example of increasingly blurring boundaries between manufacturing and services. Traditionally, qualities like intangibility, as well as simultaneity of production and consumption, have been seen as distinctive characteristics of services. In T-KIBS, however, services contain clearly material products, such as project plans and software, the use of which is not bound to their provision in terms of either time or place. (cf. Gallouj and Weinstein 1997, 543; Howells 2000, 25)

On the other hand, T-KIBS resemble other service sectors in that their innovativeness manifests itself, not only in R&D activities, but also in various other kinds of activities, where staff training plays a central role. A pilot study carried out in Germany for CIS2 offers more detailed data about the categories of innovation expenditure that T-KIBS consider important (Tether and Hipp 2000, 62-63).<sup>66</sup> The category most widely recognised as important was expenditure on training directly linked to innovation; 40% of the firms studied regarded training as important. Improving production methods and market

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<sup>66</sup> In all, the German survey covered services of very many types. Tether and Hipp have in their own analysis grouped them into four groups by using two dichotomies: high knowledge-intensity firms versus lower knowledge-intensity firms, and technical service firms versus other service firms. The analysis does not separate business services from consumer services; knowledge-intensive firms cover all companies in which university graduates constitute half or more of the total employment. Therefore the study in hand cannot avail itself of the results of all knowledge-intensive services, but only from the category "high knowledge-intensity technical service firms", which in the German survey is defined as computer and engineering services and thus corresponds to the generally applied interpretation of T-KIBS. (cf. Tether and Hipp 2000, 54-55)

introduction of new services were ranked nearly as important (39% of the firms). The next most important activities turned out to be preparing for the introduction of new services and R&D (34% and 30% of the firms respectively). Investments in machinery and equipment were considered the least important form of innovation expenditure by T-KIBS (26% of the firms).

The German study also mapped out the types of innovation with a three-part categorisation: service, process and organisational innovations. These were identified by asking firms about the “new or significantly improved services, new or significantly improved methods to produce services, and significant organisational changes” that had been introduced in the past three years. The results showed that all types of innovation were common in T-KIBS: 72% had introduced service innovations, 65% process innovations and 55% organisational innovations. (Tether and Hipp 2000, 60-61) The effectiveness of combining multiple innovations became stressed in the study: firms which had introduced more than one type of innovation were most likely to report important effects on their own and their clients’ performance (Hipp et al. 2000, 448).<sup>67</sup>

Two recent studies from Finland can be mentioned as examples of the quite rare surveys in which non-technological KIBS have been investigated besides T-KIBS. The first of these is a study by Leiponen, which examined innovativeness and the factors influencing it in four technological and two non-technological KIBS sectors. The technological sectors were machine and process engineering, electrical engineering, R&D services and industrial design; of the non-technological KIBS, advertising services and management consultancy were studied. As the KIBS firms in Finland are generally very small and the study, however, also aimed at examining the organisation of innovation activities inside the firms, the sampling was focused on the largest companies in each sector. The findings indicated that 45% of all the KIBS firms studied had introduced completely new services and 54% incremental service improvements within the past three years. It is noteworthy that the highest shares proved to be in the non-technological sector of management consultancy: 61% of the firms engaged in this business had launched new and 82% improved services. Also, in advertising the shares were higher than the average: 47% and 64% respectively. (Leiponen 2001, 33-34)

Regarding the different types of investments in innovation, both staff training and R&D were found to be important in non-technological KIBS, too. Management consultancy companies invested in training considerably more than the other sectors studied; in advertising the investments were somewhat smaller than the average. Over one half of the consulting firms, and nearly half of the advertising firms, had R&D activities; the share of R&D investments of

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<sup>67</sup> Instead, the standardisation or customisation of services, which were also mapped out in the study, did not have a direct link to innovativeness. In technical services, those service providers that earned all of their income from standardised services were less likely to innovate. In the software sector, also KIBS providing wholly standardised services were more innovative than the average in the sectors studied. (Hipp et al. 2000, 434) Customisation of services proved to be very common in T-KIBS: 93% of these firms had adapted or designed some of their services to meet individual users’ needs. (Tether and Hipp 2000, 59).



sales was, however, lower than the average in both sectors. (Leiponen 2001, 35-36) Of the factors influencing innovativeness, the study brought up especially three interesting things. Firstly, strategic orientation of firms to service solutions and to the development of organisational competences, instead of supplying individual expert services and relying on individuals' skills, was more conducive to new service development. Secondly, using a broad set of knowledge sources - clients, competitors, suppliers and universities - increases the likelihood of radical service innovations. Thirdly, unlike many of the earlier surveys, in this study most of the innovative KIBS firms were oriented towards domestic markets, and small firms were as likely to innovate as were large firms. (ibid., 77 and 81-82; cf. Miles 2001, 17).

Another Finnish study that covered non-technological KIBS has been made by Kautonen and Tiainen (reported in Kautonen 2001). The study was regionally restricted and its target area was outside the Helsinki Metropolitan Area, in the Tampere region. In this region, technologically oriented KIBS, especially KIBS linked to manufacturing production, dominate the sector (ibid., 39). The study of Kautonen and Tiainen again corroborated the innovativeness of KIBS, but the KIBS firms analysed in their study produced wholly new services less than the firms studied by Leiponen: approximately 70% of all respondents had carried out mostly minor changes in their services during the last three years. These changes included customisation of existing services and gradual improvements in service quality. Technology-based KIBS had developed wholly new services more often than non-technological KIBS, which in this study were called "management KIBS". Approximately 40% of the T-KIBS had developed a service based either on a novel combination of existing knowledge or on entirely new knowledge, whereas the corresponding share in management KIBS was less than 30%. (ibid., 42)

The empirical results concerning the categories of innovation expenditure and the different types of innovation contribute to the picture of the organisation and nature of innovation activities in KIBS firms. A more coherent theoretical model for the innovation behaviour of KIBS has been developed by Gallouj, who examines KIBS as a knowledge-accumulation system. As the use of KIBS is above all based on their knowledge input, the main objective of these firms is to accumulate, capitalise and protect the knowledge derived from different service transactions. In other words, KIBS have to establish and maintain their organisational memory, which constitutes, besides a source of knowledge for client relationships, also an essential source of cognitive raw material for innovation within these firms. In the development of their organisational memory, KIBS have two possible strategies: a codification strategy, which is common especially in the largest KIBS, and a personnel strategy, i.e. training of existing experts and recruitment of new ones. (Gallouj 2002, 274-275)

In addition to the unintentional, co-produced innovations that emerge in connection with solutions made for the clients, KIBS firms aim at creating innovations intentionally. Gallouj divides such innovations into two main types: "new fields of knowledge" innovations and formalisation innovations. The former

denotes the accumulation of knowledge relating to emerging spheres of knowledge (e.g. the Internet) with a view to providing services in these new spheres. The latter denotes the mechanisms that serve to give a form to the service in question: process, methods, organisation and so on. (Gallouj 2002, 280) To identify the emerging spheres of knowledge in particular, it is important that KIBS have a varied range of cooperation contacts not only with clients, but also with different kinds of information and knowledge producers. The information sources used by KIBS for their innovation activity have been studied in many of the surveys mentioned above. As these results, for their part, depict the connections of KIBS to the different parts of the innovation system, they will be discussed in the next sub-chapter while analysing the function of KIBS in the innovation infrastructure.

## 6.5 KIBS as a part of the innovation infrastructure

When the functioning of KIBS as supporters of innovation activity is examined, it is important to emphasise that not all KIBS transactions are innovation services. However, the factors distinguishing innovation services from the standard or routine services are neither the content nor the form of the service; the self same services that KIBS firms usually provide can sometimes be innovation services. What is essential is the context in which the services are provided: a KIBS transaction is an innovation service when a service provider takes part in an innovation process with a client. This can happen either so that there exists a clearly identified innovation project *a priori*, or that an innovation can be recognised *a posteriori*. (Gallouj 2002, 276 and 279) The role of KIBS as supporters of innovation, i.e. their role in the innovation infrastructure, can be analysed from two main perspectives: first, KIBS as facilitators of innovation at the company level, and secondly, KIBS as carriers of innovations at the level of innovation systems (cf. Miles 1999a, 93-94).

The contribution of KIBS to innovation at the company level is based on the fact that firms rarely are able to adopt external knowledge - important for innovation - into practice as such and by themselves, but they need the assistance of experienced experts. The ways in which KIBS can improve the functioning of the innovation process are numerous. Based on the study by Bessant and Rush on the activities of consultants, Miles has classified these ways as follows (Bessant and Rush 1995, 101-102; Miles 1999a, 92-93):

- direct transfer of expert knowledge, i.e. the traditional model of consulting practice
- experience sharing, carrying experiences and ideas from one context into another
- benchmarking, where the process of identifying and focusing on "good practice" can be established through an intermediary
- brokering, putting different sources and users in contact
- diagnosis and problem-clarification, helping users articulate and define the

- particular needs in innovation in such a way that external resources and opportunities can be effectively used
- change agency, where organisational development can be undertaken with help from a neutral outside perspective.

What should be particularly noted in the above list is that traditional consultancy as a linear activity, implying a transfer of expert knowledge from supplier to user, is only one type of facilitating activity in innovations. Although KIBS in some cases provide services on behalf of the client, shared problem solving and co-production of services together with the clients are typical of them, as of service sectors in general. (Bessant and Rush 1995, 101; Miles and Boden 2000, 261-262). Innovations emerging as a result of benchmarking or problem-clarification are also typical examples of service innovations in the sense that they generally contain a recombination or formalisation of existing things. However, KIBS can in certain cases be important supporters of radical innovations, too. For instance, the scope and depth of the computer revolution has required, and still requires, large-scale organisational and managerial changes (cf. Freeman 1995, 18) usually carried out with the support of management consultants.

Gallouj has applied the knowledge-processing framework, in addition to the internal innovation activities of KIBS firms described in the previous sub-chapter, to KIBS transactions (Gallouj 2002, 264-265). According to him, a KIBS transaction contains three elements: the source (S) of the input knowledge, the receiver (R) of the output knowledge and the processor (P) of the input knowledge; the processor is also the (co)-producer of the output knowledge. It is important to note that both KIBS firms and their clients can play any of these roles. The client company not only acts as the recipient of the service, but it is a knowledge processor in the co-production of services. Furthermore, in most KIBS transactions some knowledge concerning the client company itself is needed, i.e. the client also functions as a source of knowledge. The service provider is not only the processor of the knowledge, but also a receiver, to the extent that it seeks to store the knowledge that emerges from each new transaction in its organisational memory in order to use it later as input knowledge. KIBS as a knowledge source refers to the database accumulated in the course of repeated service transactions. In addition to the client and service provider, the external environment functions as an important source of knowledge. Figure 5 on the next page illustrates Gallouj's view on the elements included in a KIBS transaction.

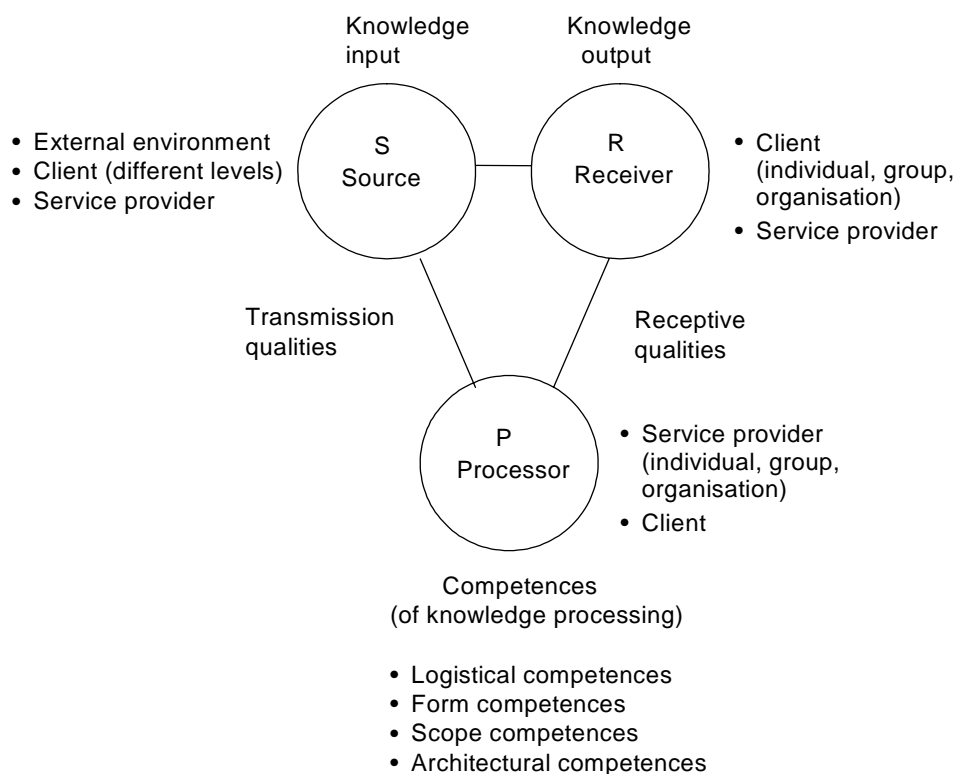
In the Figure, the qualities of the receiver and the source, as well as the competences of the processor, are also taken into account. The receptive qualities, which denote the cognitive aptitudes, the "technical conditions" and the attitudes that encourage the acquisition of knowledge, are essential for the receiver. As for the source, transmission qualities that denote the propensity of the source to deliver up its knowledge are important.<sup>68</sup> Many factors may

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<sup>68</sup> The same features have also been described by the terms "absorptive capacity" and "transfer capacity" (see e.g. den Hertog and Bilderbeek 2000, 224).

strengthen or weaken these qualities. Receptive qualities are weakened, among others, by the lack of experts in a given function within the client organisation; for example, the lack of legal experts in the case of purchase of a legal service. Transmission qualities are generally increased when the knowledge is codified, whereas they decline when the knowledge is regarded as strategic by the source or when the source itself is called into question, as in the case of auditing services or in problem-oriented management consultancy. Both receptive and transmission qualities are to some extent given, but they can also be improved by the interventions of the KIBS provider. Locating the source of knowledge - “know-where” type of knowledge provided by KIBS - is an example of a situation in which service intervention can improve transmission qualities. (ibid., 267-268)

Figure 5: The KIBS transaction as a form of knowledge processing (Gallouj 2002, 265)



The first of the competences of the knowledge processor is the basic logistical competence, i.e. the linear transfer of knowledge. Here, knowledge is actually reduced to the status of information. Usually the logistical competence is combined with other competences, but there are also KIBS transactions in which activity is limited to moving the information from S to R. Gallouj mentions as examples some market research services, the use of online databases and some aspects of recruitment consultancy. Form competences describe the

capacity to transform knowledge that is tacit at the source into knowledge that is codified at the receiver's end and vice versa. Through the former process, KIBS providers help their clients to become actively aware of knowledge that they may have even in their own organisations but which they have ignored. In the latter case, the service provider has a pedagogical function; it supports the client during the learning process.<sup>69</sup> In scope competences, too, it is a question of changing the form of the knowledge: from specific to general knowledge and vice versa. Finally, architectural competences denote association and dissociation of knowledge: supplying the receiver with a combination of discrete items of knowledge, or respectively, separating out a set of knowledge in order to produce a different set of knowledge for the client. (ibid., 268-274)

The activities of KIBS as "bridging intermediaries", which combine knowledge sources and knowledge users, have been studied, in addition to the company level, at the innovation system level as well. The starting point for these studies is the observation that while serving numerous clients KIBS function at the same time as innovation carriers (Miles 1999a, 94). This function has become all the more important as awareness of the significance of innovation diffusion for economic development has increased.<sup>70</sup> In some countries KIBS have been considered to be the most common vehicle for the diffusion of innovations from larger firms to small and medium-sized enterprises (OECD 1999, 36). Many researchers have given a still more central role to KIBS in innovation systems. While KIBS carry knowledge and innovations, numerous and versatile contacts are formed between them and different stakeholders. Due to these contacts, KIBS have been seen to form a node in a system of customers, cooperation partners, public institutions and R&D establishments (Werner 2001, 52). They have been thought to act as orchestrators of innovations and even as orchestrators of whole innovation networks (Miles 2001, 22). It has even been anticipated that KIBS are gradually developing into an informal, private, "second" knowledge infrastructure, partially complementing and taking over the intermediate role traditionally played by the formal, public knowledge base, i.e. education and research institutions. (den Hertog and Bilderbeek 2000, 239).

When speaking generally, also the empirical studies made in various European countries support the conclusion that formal and informal networks and cooperation are common as regards KIBS (Strambach 2001, 63). When examining the extent to which KIBS have contacts with the different parts of the innovation system and to what purpose these contacts are used, the situation is more complex. Studies mapping collaboration partners of KIBS have usually given the result that the most important partners are the clients, other service firms and equipment and software suppliers. As regards collaboration with research and education institutions, contacts are clearly fewer - if recruitment of

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<sup>69</sup> According to Gallouj, form competences are largely coterminous with the conversion mechanisms that Nonaka and Takeuchi describe by the terms "externalisation" and "internalisation" - cf. Chapter 6.1 footnote 56.

<sup>70</sup> den Hertog and Bilderbeek identify three kinds of "vehicles" in knowledge diffusion: human embodied (experts and tacit knowledge incorporated in personnel), equipment embodied (knowledge incorporated in goods) and disembodied (documents and other written information). According to them, KIBS play an important role for all these types of knowledge flows. (den Hertog and Bilderbeek 2000, 225-227)

graduates is not included. Technology-based KIBS have these kinds of connections to a certain extent, and for enterprises providing R&D services universities are even one of the most important partners. However, in KIBS that are not technology-based connections to universities and research institutions are rare. The same difference between technology-based and non technology-based KIBS exists in connections with public business-development organisations<sup>71</sup>. Thus, the network relationships and the bridging function of KIBS seem to be mainly horizontal, linking firms within and across industries. (Leiponen 2001, 110-111; Kautonen 2001, 41)

In knowledge acquisition, too, other companies play a central role; besides the clients and suppliers, competitors are important as external knowledge sources. All in all, KIBS are, however, more widely oriented in their knowledge acquisition than in their actual cooperation relationships: knowledge is acquired from trade fairs, seminars, professional journals and from the Internet. (See the previous sub-chapter for the importance of versatile knowledge sources for KIBS' own innovation activities.) Except for R&D services, universities and research institutions do not occupy a very important position in this, either. (Kautonen 2001, 40; Leiponen 2001, 39-41; Tether and Hipp 2000, 65)<sup>72</sup> Informal knowledge sources and different kinds of weak ties with the external environment are typical of the activities of KIBS. Also innovation cooperation with firms other than the client companies exists more often on an unofficial than on an official basis. According to a study made of T-KIBS, 38% of these firms had formal co-operation agreements related to innovation activities with third parties (Tether and Hipp 2000, 66).

KIBS have often been considered to have a special meaning for innovation networks in the regional context due to the fact that the markets of many KIBS are local or regional. In fact, particularly studies focused on KIBS that operate outside major cities have shown that these firms have strong local ties. Both the customers and suppliers, as well as the cooperation partners, are often from KIBS' own area. Small KIBS enterprises and non technology-based KIBS are usually more context-sensitive than bigger KIBS companies and T-KIBS. However, also T-KIBS show regional commitment in that they are often created as spin-offs of enterprises already operating in the area. Moreover, the social ties of the entrepreneurs to their home district are strong in all kinds of KIBS. On the other hand, the scarcity of contacts, described above, to the research and education infrastructure can also be seen at the regional level. Those contacts that exist, for example to local universities, mainly cover extension and

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<sup>71</sup> The results concerning KIBS' links to public business-development organisations may, according to the researchers, partially reflect the national characteristics in Finland, where the results mentioned have been obtained. A strong emphasis on technology has long prevailed in the national innovation system in Finland, for which reason only a small amount of public development services have been on offer to non technology-based KIBS (Kautonen 2001, 42; Leiponen 2001, 111).

<sup>72</sup> A recent study made in the Netherlands shows that the clients' own contacts with universities and research institutes are not very abundant either. Business service firms are more important information sources for innovating Dutch firms than the scientific organisations mentioned. Innovative service firms are especially oriented towards the use of business services as an information source. (Kox 2002, 63-64)

continuing education and commissioned R&D projects. (Kautonen 2001, 39-41; Werner 2001, 59-61)

Studies aimed at empirical investigation of the effects of KIBS on the increase of general innovativeness, and hence on the growth of productivity and competitiveness, are rare. Besides the earlier surveys carried out on the effects of producer services at corporate and regional levels (Hansen 1995, 190-191 and MacPherson 1988, 960 - referred to in Chapter 5.4), a recent study made by Windrum and Tomlinson is especially worth noticing. Their objective was to explore the extent to which knowledge-intensive services enhance national productivity through interaction with other economic sectors. The most important finding emerging from the study was the need to distinguish between a general increase in the *representation* of services within a national economy and the degree of *integration* between services and other economic activities. The latter enables stronger flows of useful knowledge and information from services to other activities. In other words, the degree of connectivity in the economy determines the size of spill-overs from service innovation - especially from knowledge intensive services - and is thus crucial from the viewpoint of domestic and international competitiveness. (Windrum and Tomlinson 1999, 391, 399 and 401-402)<sup>73</sup> The findings of Windrum and Tomlinson also indicate that although measurement of the effectiveness of KIBS' activities should be strived for, it should not be done with too straightforward research arrangements. When measuring the relevant outputs or evaluating quality differences in services, it has to be taken into account that the contribution of KIBS is for a notable part linked with enhancing the above-mentioned connectivity and integration. Detaching certain factors from the whole for measurement purposes may, in this kind of context, lead to a situation in which the most essential phenomena in the object studied cannot be illuminated. (cf. Hansen 1994, 190; Illeris 1989b, 270).

## 6.6 Summary of the role of KIBS in innovation

KIBS as a specific group of producer services, in which expert operations play a particularly important role, were discerned and defined in the mid-1990s. The development of innovation research from the late 1980s onwards was an essential prerequisite for understanding the nature and meaning of KIBS. The factor triggering this research has been the realisation of the significance of

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<sup>73</sup> In the study by Windrum and Tomlinson, a somewhat larger group of services than in KIBS studies was included; correspondingly, the term used - 'KIS' (knowledge-intensive services) - was broader. In addition to business services, the following branches were examined: banking and insurance services, press and news agencies, real estate services and telecommunications services. The study compared the number, growth and connection of both the totality of services and the knowledge-intensive services to the other sectors of economy in four countries: the UK, the Netherlands, Germany and Japan. (Windrum and Tomlinson 1999, 393-401) Another study of Tomlinson, where specifically Japan and the UK were compared with each other, corroborated the results of the former study: The growth of KIBS in itself will not necessarily lead to major improvements in productivity. What is essential is the economic network of which KIBS form a part. (Tomlinson 2001, 103-104).

continuous innovation for competitiveness. Three approaches in particular in innovation research have contributed to the perception of KIBS' role: the new conception of the nature of innovation activity, the innovation systems approach and research into service innovations.

Regarding the nature of innovation activity, the essential change compared with earlier thoughts is that research and development (R&D) is no more seen as the only source of innovations, and radical inventions not as their only form. A significant part of innovations are incremental, created in connection with everyday business activities where knowledge is combined and applied in creative ways in response to market requirements. From the viewpoint of the role of KIBS, particularly relevant is the perception that innovation activities are closely linked to learning, especially learning by doing, learning by using, and learning by interacting. The contribution of the innovation systems approach to the new innovation perspective has been in underlining the importance of external linkages for innovative success and the importance of innovation diffusion together with innovation creation. Studies on service innovations have confirmed the versatility of innovation sources; these studies have also brought up the significance of new patterns of thought and of models of operation, in addition to technological innovations.

While the development of innovation conception has been a prerequisite for understanding the role of KIBS, the results coming from empirical examinations of KIBS have strengthened new ideas. Since the emergence of KIBS research these two lines of studies have partly proceeded hand in hand. KIBS research has been closely linked especially with the topics of service innovations and regional innovation networks. KIBS have been analysed both as facilitators and carriers of innovations, sources of innovations, and as a node in innovation networks. Considerations of KIBS' functions in innovation support and transfer come nearest to the tradition of producer services research. However, even in this respect KIBS studies have provided many new insights and more detailed analysis. The results of the role of KIBS as facilitators of innovation have also shed new light on the nature of innovation activities conducted in everyday business operations. For example, it has been shown that traditional transfer of expert knowledge from supplier to user is only one type of facilitating activity in innovations. Various patterns of shared problem-solving and co-production of service by KIBS and their clients are becoming all the more common.

The perception that KIBS not only function as supporters of innovation in other companies, but are important innovators themselves, is to a great extent novel in nature; mentions of this can be found in the earlier studies only occasionally. Studies on KIBS as sources of innovations have contributed both to more detailed knowledge of these branches and to understanding the nature of service innovations more generally. The versatile innovative activities in many KIBS branches have led to re-evaluation of the notion of services as inherently passive in innovation creation. In addition, KIBS provide examples of the intertwining of technological and service innovations, a complex phenomenon that is becoming more and more topical today. The main part of research into



KIBS as innovators has examined technology-based KIBS (T-KIBS), branches where innovation activities to a great extent resemble those in high-technology manufacturing industries. There are, however, suggestions of high innovation investments also in non-technological KIBS, in the form of expenditures both on staff training and on R&D.

The significance of KIBS in innovation systems stems from their numerous and versatile contacts with different stakeholders. On this basis it has been suggested that KIBS act as orchestrators of innovations and even orchestrators of whole innovation networks. They are considered to form a node in a system of customers, co-operation partners, public institutions and R&D establishments and to constitute a part of the knowledge and innovation infrastructure of society, together with education and research institutions. Also empirical studies have confirmed the central role that networks and co-operations play in the activities of KIBS. Detailed analyses about the nature of brokering functions of KIBS are, however, only starting. Table 10 summarises the linkages between the new, broad conception of innovation and the findings of the KIBS studies. The table shows that KIBS have an important role regarding all the main arguments included in the new innovation perspective. In addition, the functioning of KIBS provides important examples that are in line with the viewpoints of that perspective.

Table 10: The roles and functioning of KIBS seen from the different viewpoints of the broad conception of innovation

<b>Arguments of the broad conception of innovation</b>	<b>Roles and functioning of KIBS</b>
Innovations are embedded in social activities.	KIBS act as knowledge sources and supporters of innovation in business life; they are developing into "the second knowledge infrastructure" beside the public knowledge infrastructure.
There are many kinds of innovations besides radical technological inventions.	KIBS are important examples of active innovators in the service sector.
Innovation is closely linked to learning.	Innovative solutions provided by KIBS emerge in a joint learning process with clients; staff training is an important form of innovation expenditure in KIBS.
Tacit knowledge plays an important role in innovation.	KIBS help their clients to make tacit knowledge explicit and to identify crucial issues so that the innovation opportunities can be effectively used.
Innovation is a complex process.	KIBS act as facilitators in the innovation process management (process consultancy).
Innovation diffusion is important in addition to innovation creation.	KIBS act as carriers of innovations.
Innovation is a collective undertaking, network relationships are essential for it.	KIBS act as nodes and brokers in innovation networks.

## **PART III FUTURE PROSPECTS FOR KIBS**

### **7 DRIVING FORCES IN THE PRESENT ECONOMY LINKED WITH THE FUTURE DEVELOPMENT OF KIBS**

The previous chapters have above all explained the growth of KIBS up to today and analysed their present role in the economy. To some extent the chapters have also described the contents of the services provided by KIBS and the ways of providing these services. From now on the study in hand will aim to explore the future development of KIBS: the potential for the continuity of growth and changes in the role of KIBS, as well as the internal development features of KIBS branches. The expert interviews made for the study occupy a central position in this foresight part of the book. However, before the description of the conduct and the results of the empirical investigation, the literature analysis is still continued for a while: in the present chapter those wider societal factors that constitute the framework for the future development of KIBS will be considered. The concept of "driving forces", generally applied in futures studies, will be used to describe these factors. Thus the present chapter aims to answer the third research question: What are those driving forces in today's economy that can be expected to be the most crucial for shaping the futures of KIBS, and what kinds of starting points do these driving forces offer for the future development of KIBS? Theories and empirical surveys that contain indications of the driving forces relevant to KIBS and indications of the directions in which these driving forces are taking KIBS' development will form the essential content of the examination.

In the research design in Chapter 2.2, the concept of driving forces was defined and the way in which the concept is used in this study was specified. It was stated that driving forces are wide-scoped, topical phenomena, the exploration of which is first and foremost motivated by their important effects on other phenomena. When studying driving forces, attention is not focused on detailed scrutiny of their own development track, as in the trend analysis. It is true that some driving forces show a distinct direction of development, and in these cases the corresponding phenomena can also be studied as trends; however, then it is a question of another kind of research framing.

As concluded in the previous chapter, it is primarily the connection with the production of new knowledge and innovation activities that makes KIBS an important part of the economy. In the search for driving forces relevant to KIBS, it is therefore reasonable to restrict the scope right from the beginning to knowledge-related phenomena, not to look for the influences of all possible societal phenomena. Especially interesting from the viewpoint of the future of KIBS are those phenomena that are associated with changes in the role of knowledge and in the ways of producing knowledge. Even after focusing the examination in this way, one may become involved in very wide discussions, as many researchers consider the issues linked with the production and use of

knowledge the key issues of the current development. In other words, knowledge-related phenomena are regarded as the most central driving forces in the development of the entire society. The terms "information society", "knowledge economy" and "learning economy" (Ducatel et al. 2000; Boden and Miles 2000, 259; Lundvall and Archibugi 2001) show this view explicitly. Also in the attributes "networking" and "globalising", connected with the present society, the new ways of creating and disseminating knowledge often play a key role (Castells 1996, 471; Soete 2001, 26). In the study in hand, it is not possible to become more deeply engaged in the discussion of the driving forces of today's society despite of its significance for the future. This macro-level discussion includes also disputes, especially concerning the applicability of highly generalising concepts; these kinds of issues are outside the framework of the present study, but reported widely elsewhere.<sup>74</sup>

Knowledge-related phenomena as driving forces can, however, be examined from a more restricted perspective, too, and this is what will be done in the study in hand: the effects of the changes in the role and production of knowledge are explored at the level of one specific sector, KIBS, instead of the whole society. The aforementioned macro-level concepts are less problematic used in this way. Actually, they can serve the specification of the driving forces relevant for this study. As already stated earlier, the concepts of "knowledge economy" and "learning economy" capture very well the essence of the present study as integrative concepts. The role of KIBS in today's societal development, i.e. the role that they play in economic growth based on innovativeness, can be crystallised in these concepts. In the analysis of driving forces, the three other attributes commonly used to describe the nature of the present society - "informational", "networking" and "globalising" - are, however, better applicable, as they illustrate in more detail the various facets of the development. Thus, the phenomena depicted by these three concepts will be studied in the following as the central driving forces pushing ahead the development of KIBS. It is justified to identify these development factors as the main driving forces in the KIBS context, not only because they are nowadays considered essential drivers in the literature of the overall societal change, but also because the latest KIBS research emphasises the exploration of the relationship between these very phenomena and KIBS.

The first driving force, "the informational aspect" of the development, will be restricted here to concern specifically those new opportunities and challenges that the development of information and communication technology (ICT) offers to KIBS. The second, "the networking aspect", will be examined in this connection above all as a driving force that is changing the business models of both KIBS and their clients. The third, "the globalisation aspect" will be analysed

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<sup>74</sup> For instance, in the case of globalisation, the unevenness of development in the various sectors of society has been pointed out, and global access to information and knowledge has been recognised to be much more a possibility rather than practice (Ducatel et al. 2000, 7-8; Soete 2001, 34). In addition, it has been emphasised that new ways of producing and using knowledge can be examined from many different angles, and then, threats also enter the picture besides views that open new opportunities. For instance, the increasing knowledge-intensity of certain parts of the economy may result in growing polarisation and in marginalisation of those workers who are falling behind (Tomlinson 2001, 99).

as a factor which draws KIBS firms, too, into foreign markets and which also otherwise affects the activity of KIBS as well as their use; the effects caused by the intensification of international competition and the internationalisation of knowledge and innovation are especially important. In the following, each three driving forces will be examined under a sub-chapter of its own. In practice, the ICT development, networking practices and globalisation of the economy are, however, inseparably linked with each other. Many researchers have stressed the circular nature of the development process, (e.g. Castells 1996, 66; Lundvall and Archibugi 2001, 2), and the mutually strengthening effects of driving forces can also be seen in the empirical findings of the study in hand (cf. Chapter 9.2).

## **7.1 Development of information and communication technologies**

In the introductory chapter of this study it was already mentioned that speaking about today's economy as "knowledge-based" refers - in addition to the growing role of knowledge and innovation in all economic activities - to continuously increasing knowledge-related transactions. The markets for information have grown immensely and several important changes can also be seen in the ways in which these markets are working. Many of these changes provide new opportunities for KIBS and raise the KIBS sectors to a more and more central position in the economy, if the firms operating in these sectors can take advantage of the opportunities available. The change of the information markets is a phenomenon that links the development and future of KIBS closely to the development of information and communication technologies (Antonelli 2000, 170; Lundvall and Archibugi 2001, 11). In the following, four central changes that have happened or are going on in the information markets due to the advancements of ICTs are brought up, and their significance from the viewpoint of KIBS is considered. These changes are:

- growing challenges as regards the location and interpretation of relevant information
- increasing importance of tacit knowledge
- new possibilities for combining external and intra-organisational knowledge
- enhancement of the tradability of information and the emergence of real-time information markets.

The development of information and communication technologies has drastically facilitated and will further facilitate handling, storing and moving of information; it has also considerably reduced costs in these respects. The real issue is no more how to transfer and compile information, but how to find the essentials and analyse and interpret them, i.e. how, where and when to dip into the information flows. The importance of competences linked with locating and selecting the relevant information and using it in efficient ways has notably grown. There is a need to add "a human touch" to information which lacks a context-specific component after it has been taken over by computers. This means increasing demand for highly qualified professionals who are able to

provide comprehensive and customised interpretation of random data. (Lundvall and Johnson 1994, 25; Preissl 2000, 137) KIBS companies, which have a broad view of the latest developments on the basis of their abundant contacts with various clients, are often capable of developing and maintaining the competences required better than is possible within one client company. The level of expertise, which has been found to be a central motive for the use of external services for as long as the topic has been studied, is becoming, along with the development of ICT, an all the more decisive reason for using KIBS. (Kox 2002; 24<sup>75</sup>; Strambach 2001, 62)

The fact that context-specific knowledge in particular is becoming a valuable kind of knowledge challenges the view of traditional economics about knowledge as a public good, whose central features are non-excludability and non-rivalry. Applied and interpreted knowledge is not easily appropriated, but a genuine private good, in the accumulation and capitalisation of which the use of KIBS may offer a competitive advantage. (Gallouj 2002, 260-261) In context-specific knowledge tacit knowledge and the interaction between tacit and codified knowledge play a key role. The speeding up of the circulation of knowledge and the increasing complexity in the knowledge base make tacit knowledge even more important than before. (Lundvall 2001, 276)<sup>76</sup> The functioning of KIBS is largely connected with tacit knowledge. Firstly, tacit forms of knowledge occupy a central position in the knowledge flows between KIBS and their clients. Secondly, KIBS help their client firms to convert tacit knowledge into explicit knowledge and vice versa. Activation of these conversions, when a client hires a KIBS, shows itself, for example, in the new project teams that are often set up in this connection, as well as in the increase of other forms of interaction between employees. (den Hertog 2002, 240-241)

In the both above-mentioned cases the viewpoint from which the activities of KIBS are considered is inside a client firm. Most important for the creation of new knowledge and emergence of innovations is, however, the interplay between the generic (explicit, codified) knowledge coming from external sources and the tacit (implicit, non-codified) knowledge buried in the daily practices of firms and organisations. KIBS act as an interface and as a mediator between a client firm's tacit knowledge and the generic knowledge available in the economy as a whole. They are containers and dynamic sources of "quasi-generic knowledge" extracted from repeated interactions with firms and other actors, including producers of new scientific knowledge. The development of ICT has essentially increased opportunities to effectively combine external and internal knowledge sources. It has enabled easier interface and higher levels of

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<sup>75</sup> On the basis of empirical studies carried out in the Netherlands, Kox states that cases where the former in-house service and the externally bought service are identical or close substitutes are exception rather than the rule. Service upgrading instead of pure replacement outsourcing is gaining more and more ground. (Kox 2002, 24).

<sup>76</sup> One topic that along with the recognition of the tacit potential of knowledge is coming under re-examination is the issue of intellectual property. Taking into account particularly the importance of the possibilities for further development of innovations, the balance between the formal methods in the IPR protection and the promotion of knowledge diffusion should be carefully considered. (Antonelli 1999, 162 and 175; Lundvall 2001, 276-277)

appropriability of specific problem-solving methodologies. Through the use of these new means, KIBS can in future far better than before provide their clients with access to information dispersed in the society and enhance connectivity and receptivity of the economic system. Enhancing the connectivity means increasing the shared learning experiences between the nodes of innovation networks. The promotion of receptivity is achieved by making the absorption of external knowledge easier and faster for the economic actors, which increases their readiness to use external knowledge sources. (Antonelli 1998, 178-180 and 1999, 169-170 and 173).

At the same time as there is reason to emphasise the growing importance of tacit knowledge, it must be noted that the development of ICT also gives new incentives to the codification of knowledge. In the Internet economy, where the markets for information can be said to have exploded, it has become less costly to codify knowledge and in some areas much more attractive to do so (Lundvall 2001, 276). New information and communication technologies increase the divisibility of information, which, together with the enhanced accessibility, results in the growth of the tradability and commercial potential of information. This also opens up opportunities for knowledge-intensive business service firms, which tend to be among the chief advocates and supporters of the emerging information markets in this sense, too. Especially worth mentioning are the increased opportunities for separating the new information from the expertise used to generate it. Along with this separation, the commodity nature of information becomes more marked and information is increasingly easy to store and market. Another key change is linked to the possibility of on-line interaction between customers and producers of knowledge; the use of this possibility makes the information exchange markets real-time. (Antonelli 1998, 179-180 and 1999, 169-170)

It can be concluded that the new information and communication technologies favour both the diffusion of the demand for KIBS, the supply of KIBS and the creation of a proper market for these services (Antonelli 1999, 169). Besides the impacts that development of ICT has on all KIBS, it is to be noted that the core of expertise of some KIBS sectors is directly connected to the new information technology. IT services belonging to KIBS are in many ways intertwined with software and systems technology and have been pioneering agents in the shaping of this technology (Miles 2002, 187). The development has also given birth to many totally new KIBS functions in the IT sector. As an example, the new intermediaries linked with Internet services - Application Service Providers (ASPs) and web-hosting companies among others - can be mentioned (Howells 2000, 28)<sup>77</sup>. Finally, the development of ICT can be considered an important driving force for KIBS for the reason that these services are among the most, if not the most, intensive adopters of new IT (Miles 2002, 187). Here an important

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<sup>77</sup> All in all, the reorganisation of the intermediating companies is one consequence of the development of ICT. In some parts these types of companies will decrease, since clients have better opportunities of dealing directly with their customers (the phenomenon of disintermediation). On the other hand, a whole set of new intermediaries have been established, in the first place around web-based ventures. (Howells 2000, 28)

observation is that the use of information technology tends to increase the knowledge-intensification in KIBS. The use of IT can, for example, contribute to the emergence of knowledge-intensive spin-offs on the basis of traditional professional services. Some researchers use the term "re-penetration" for the phenomenon in which service firms adopt new technology, especially IT, and then apply it to their old specialisms, i.e. re-penetrate older structures and transform their capabilities. (Tomlinson 2001, 99)

## **7.2 Networking and new business models**

The significance of cooperative relationships for innovation and for the progress of the learning economy has been underlined above repeatedly. Over the last ten-fifteen years, the cooperation between economic actors has gained new features: it has become more multi-directional, dynamic and flexible than before and the variety of cooperative forms - including loose and unofficial forms - has increased. The new nature of cooperation is most often described with the term "networking". The advancements of information and communication technology have had a crucial impact on the development: ICT has provided the infrastructure for the new networking practices. However, these practices have not developed only on the basis of technology, but new insights concerning business models have been an important prerequisite for their development, too; these insights function today as a further incentive to improvements of technology. (cf. Castells 1996, 169-171) For the future of KIBS, the networking practices and the related new business models are a central driving force both directly and indirectly. The former refers to the impacts that the new ways of doing business have on KIBS' own behaviour and the latter to the impacts that they have on the business environment of KIBS, i.e. on the client companies' behaviour. In the following, the key changes will be discussed first in general, and then from the standpoint of KIBS in particular.

One of the most important changes in business models is that the client has been raised to the centre of strategy. While the analysis of the competitive conditions was earlier the usual starting point in the development of business, the main question set today is more and more often: what new value a firm can offer to its clients and how it can do this. Outperforming the competition and profitable growth are the result of succeeding in value offerings. If a firm only concentrates on how to match or beat competitors, it easily restricts itself to the conventional context, which also the competitors know and in which all seek to obtain a competitive advantage by means of minor improvements. The strategy based on value offerings considerably extends the creative scope of individual firms and provides them with a wide range of options even irrespective of the general situation in their industry. A firm need not compete for a share of a given demand, but it can redefine clients' problems, discover hidden demand or create new demand through systematic pursuit of innovations. In parallel with the concept of value offerings, the concept of value innovation has been

brought up. Here innovation is anchored with buyer value, which means that it is not seen merely as the development of technology, for example. (Hoover et al. 2001, 37-38; Kim and Mauborgne 1999, 43-46)

Value innovation has been argued to be the essence of business strategy in the knowledge economy (Kim and Mauborgne 1999, 53). This argument is made plausible by the fact that the basic idea of value innovation has much in common with the general theories of the knowledge and learning economy. Many of the points that have been brought up earlier in this study as the core elements of the new conception of innovation and knowledge creation can be recognised in the paragraph above. These include focus on the end-user, examination of innovation as a sustainable strategy and a broad view of the nature of innovation. The new innovation theories presented earlier also suggest that combinative and integrated solutions are characteristic of innovation activity in the knowledge economy. Similarly, when innovations are examined as values, it is not enough to pay attention to individual goods and services, but total customer solutions are under the spotlight. In these, the arrangement or re-arrangement of existing items may be the core of innovation. Provision of these kinds of solutions often requires crossing the conventional borders: seeking operational models in other industries and combining equipments and services produced in many different branches. (Kim and Mauborgne 1999, 46-47; Normann and Ramirez 1998, 42-43) When the target of meeting consumers' more final demands is pursued, the encapsulation of services into industrial products is often especially essential. Linking maintenance and advisory services to industrial products, which is becoming more and more common, has improved the success of many products. More importantly, this practice has brought with it a novel way of thinking based on the concept of life cycle. Instead of one-off contacts via a product sale, consumption is becoming a continuing process involving long-term customer contact through service delivery. Equipment manufacturers and suppliers aim to extend their customer relationships to cover the whole life cycle of the product. (Howells 2000, 16-17; Hoover et al. 2001, 17; Normann and Ramirez 1998, 51)

A business model, where the realities of customers are taken as a starting point and are answered through value innovations, is tightly linked with the development of networking practices. The many components that are included in value innovations, as well as the long-lasting nature of the client relationship, require that value innovators have a network of partners that provides complementary assets, capabilities, products and services. (Kim and Mauborgne 1999, 49-50) The need for cooperation has to be analysed both regarding the supply and the demand chain. The supply chain involves sub-contractors and horizontal networking partners; through the collaboration with these, efficiency in production and distribution of equipments and services can be achieved, maintained and improved. As regards the demand chain, the creation of the necessary networks calls for a more detailed analysis of the various stages of client relationships. It is important to understand not only what product the client buys and why he buys it, but also where and how this product is acquired. Marketing is at the heart of understanding the customer's buying



processes, and thus it is an essential part of the demand-supply chain - which all in all should be seen as an integrated whole. (Hoover et al 1999, 9 and 15).

The so-called core competence based strategy has already for long been the guideline in solving what companies make themselves, despite their tendency towards the building of networks. However, core competences have been examined from many different angles and on many different levels. A view closely linked with the idea of value innovations is that the core competences of a company should be examined on a deeper level than on the level of those end-products and bundles of businesses that are tangible consequences of the use of competences. In core competences, the question is about a more or less comprehensive pattern of intra-firm coordination and learning based on diverse skills and individual technologies. Important characteristics of core competences are that they provide potential access to a wide variety of markets and make a significant contribution to the perceived customer benefits of the end product; they are also difficult for competitors to imitate. (Prahalad and Hamel 1990, 82-84) Further, the inclusion of an anticipatory element in the core-competence based strategy is important. Companies should not only identify competences needed in the present market, but also analyse on which market segments they desire to operate in the future and which kinds of competences are then needed. (Aaltonen and Wilenius 2002, 11)

From the viewpoint of KIBS, the developments described above mean firstly that in order to successfully tie their service to the business whole of clients, KIBS have to recognise and understand the changes that are under way. Increased networking has been detected in KIBS' own business, too. The network patterns vary from the strategic alliances of large KIBS, which can be found e.g. in IT service firms (Tapscott et al. 2000, 34-35), to looser cooperative relationships of small KIBS. The latter are used for creating new client contacts, for widening one's own expertise, and for adopting best practices (Strambach 1997, 28). In the most advanced KIBS, also analysis of the value chain and life cycle thinking are gaining ground. In the analysis of the value chain, one new perspective that is growing in importance along with the increase of network transactions is the extension of concern to the client's customers (Normann and Ramirez 1998, 33-34). In industries like KIBS whose entire business is intermediate by nature, it is particularly challenging to note that value-offerings to the end-user are not only the client firm's concern, but the service firm can also influence them through its activities. The generalisation of life cycle thinking has been discovered e.g. among consultants, who increasingly have a clear commercial interest in developing longer-term partnerships as opposed to selling one-off products (Bessant and Rush 1995, 101).

For KIBS' clients, networking practices and new business models mean that KIBS are one actor among those cooperation partners that are needed in the provision of value offerings to the customers. The services provided by KIBS companies are also one part of the services, whose encapsulation into industrial products may create value innovations. Managing the external provision of knowledge-intensive service functions demands, however, many kinds of skills

of the clients. These skills are often called interface skills, and among them have been identified e.g. coordinative, strategic and conceptual skills, as well as the general capacity to manage contract relationships (Elfring and Baven 1994, 43). Challenges to know-how are increased by the fact that the management of KIBS relationships takes place in a networked environment, where interorganisational coordination in many other directions is needed at the same time. Networking practices and new business models have further reduced the possibilities for applying straightforward outsourcing thinking. If the earlier producer service studies came to the conclusion that, instead of the simple "make or buy" solution, the question was most often about "make *and* buy", then nowadays the question is more and more about linking the individual make and buy -solution to other cooperative activities. (cf. Elfring and Baven 1994, 42-43; Tapscott et al. 2000, 15)

### **7.3 Globalisation of the economy**

In Chapter 6, it was stated that globalisation makes it necessary to increase innovativeness in order to keep up competitiveness; on the other hand, it was stated that globalisation offers new opportunities for innovativeness. The use of services that support innovation activities is one means by which succeeding in the fierce innovation competition can be improved, and by which the new opportunities available can be utilised. Thus, globalisation is a factor which in an indirect, but important way is contributing to the quantitative development of the KIBS sector. As international and worldwide activities continuously expand, the significance of globalisation as a driving force behind the innovation competition, and consequently behind the increasing use of KIBS, can be expected to grow in the future.

Globalisation also puts pressure on KIBS firms themselves to internationalise. The internationalisation of KIBS has been argued to be even one of the most important parts in the general process of the globalisation of production, distribution and innovation, having implications for the international division of labour and the competitiveness of firms, regions and countries (Miozzo and Miles 2003b, 1). In some of those countries where the KIBS sector has developed especially dynamically, the high level of internationalisation of KIBS firms has been considered to be a central contributing factor in the growth of the sector; the Netherlands can be mentioned as an example (Kox 2002, 88). The following discussion will treat in some more detail the typical modes of KIBS' international transactions, the new possibilities for international service delivery, the process of going global, and the role of the internationally operating KIBS in the promotion and dissemination of knowledge and innovation.

Traditionally, the modes in which firms operate on the international market have been divided into two main categories:

- foreign direct investments (FDI)
- cross-border trade (exports)

Of these two, the FDI mechanism has been found clearly more general in KIBS, like in all service industries. The need for close and continuing contact between service providers and their clients often necessitates the use of this vehicle of delivery. (Roberts 1998, 19-20; Sondheimer and Bargas 1993, 120). Both FDI and exports can, however, be put into practice in many different ways, and these different ways include several issues that are important from the viewpoint of KIBS' internationalisation. They also bring out new features in the globalising economy. As regards internationalisation through FDI, it may be carried out by way of a takeover or the setting up of a new firm. In recent years, establishing foreign presences through mergers and acquisitions has become more and more common in the business services sector. (Roberts 1998, 3 and 99) In exports, services can be delivered both in the material form (a letter, a report, a software disk), through travelling persons, and through telecommunication networks. Roberts calls these three types of delivery: embodied service exports, transhuman exports and wired exports. Due to the need for face-to-face contact, it has been argued that transhuman exports, i.e. exports that involve the movement of the producer to the client or vice versa, are most frequent in KIBS. (ibid., 19 and 95)

Thinking about the future development, a central question is the extent to which advancement of data communications will increase the possibilities for direct trade of services and diminish the need for the travelling of personnel. In other words, will the traditional orientation in services towards sales conducted by local affiliates lose its dominance, and will the wired forms in exportation replace transhuman exports? Those empirical studies in the KIBS sector that have touched upon this issue have mainly described the situation in engineering consultancy firms. The fact that much of the graphic, numeric and text-based information related to engineering design and construction management is currently stored in electronic form means that direct electronic delivery of these data to the client has become feasible. Thus, there is a potential for enhancing the tradability of the products of engineering firms. On the other hand, it has been shown that in practice the exploitation of IT-enabled delivery concerns mainly feasibility studies and detailed design. Engineering services associated with the phases of construction and implementation are highly dependent on knowledge about local conditions and continue to depend on the presence of consultants at the project site. (Baark 1999, 66-67).

Temporality of the local presence in foreign countries is typical of international operations in engineering services: when the assignment is completed, the office is closed and the consultants move to other markets. (Sharma and Johanson 1987, 22) These kinds of "export projects" differ clearly from the international business that characterises manufacturing; in the latter, the establishment of an affiliate usually means more permanent settling down in the target country, or at least striving for this. All in all, the need to examine internationalisation as an even more versatile phenomenon than as the different forms of FDI and exports has come out more and more clearly during recent

years. Besides these modes of internationalisation, especially cooperation and agreement schemes between companies have been found to be important. Along with the generalisation of networking practices, international operations are often based e.g. on joint ventures, contractual arrangements, franchise agreements, and on licensing. (Roberts 1998, 272)

New research results have been obtained also concerning the process of internationalisation of firms. In the earlier studies, it was proposed that firms progress through various stages on their way to internationalisation, i.e. an evolutionary or gradual approach was thought to be characteristic of going abroad. In the case of manufacturing firms, on which the main part of the early studies was focused, the reason behind this gradual approach was seen to be risk avoidance: The movement across national boundaries is expensive due to investments in capital and fixed assets, and firms are therefore forced to be cautious in their internationalisation decisions. This is reflected, among other phenomena, in that firms start by going to countries which resemble the domestic market. Correspondingly, after the initial penetration in each individual market, resource commitment increases gradually.<sup>78</sup> As regards the internationalisation of expert services, the risk exposure in the above sense is, however, small. Further, expansion in a specific market is not always what the firms in these services seek for. The aim can be the use of the same expertise with slight modification in a number of different countries; the export projects described above are an illustrative example of this. Finally, for example European engineering offices have often started their internationalisation in developing countries, i.e. in countries where the business environment radically differs from that in the home country. (Sharma and Johanson 1987, 21)

Thus, it is obvious that the classical evolutionary view cannot be applied in KIBS as such. There is, however, a somewhat different standpoint which has led to the argument that gradual internationalisation characterises also KIBS. Like services in general, KIBS have been thought to be locally bound and not internationally oriented in the first place. They have been believed to increase their share in local markets in the initial stage, and then reach out to a wider national market. If they thereafter go abroad, they are supposed to become drawn into international activity by their clients: as firms in all sectors are becoming more globally oriented, they require their service suppliers to provide services internationally, even on a worldwide basis. (Roberts 1998, 93 and 187) According to this view, the first step en route to internationalisation is often the delivery of services to foreign clients in the domestic market; this is followed by personnel travelling into overseas markets. Clients' needs may require a service firm to set up a foreign office which then attracts new clients. After the firm has established itself on global markets, the fierce competition from other firms may require a more rapid phase in its further internationalisation: the international coverage is extended through networking and through mergers and takeovers. (ibid., 96-97 and 184)

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<sup>78</sup> Among the most important original developers of the evolutionary internationalisation model were Johanson and Wiedersheim-Paul who proposed their "establishment chain" theory in 1975 (306-309).

There are, however, several researchers who question the usefulness of stage models in general in the analysis of firms' internationalisation - both in the KIBS sector and in other sectors. For example, it has been remarked that these models do not anyhow explain withdrawals from foreign markets, which, however, often happen. In addition, empirical surveys have shown that some stages may be missed out, or variations in the sequence may occur. (O'Farrell et al. 1998, 34) Already in the late 1980s, attention was paid to the acceleration of the pace of internationalisation especially in high-technology firms. In these firms, substantial investments in R&D as well as short product life cycles tend to favour direct and rapid entry to the global market (Young 1987, 33). Of the KIBS branches, computer software firms in particular have been found to internationalise quickly, rather than in incremental steps (Bell 1995, 72).

All these observations have led to the conclusion that, instead of a general model, more flexible approaches are needed: approaches that take into account the diversity between industries, individual firms and between the situations where internationalisation occurs. The need to understand the diversity and the organisational variety in KIBS' internationalisation has been emphasised e.g. by Randles and Tether (2003, 252). O'Farrell et al. have examined the foreign market development of KIBS firms as a number of strategic choices. Distinct foreign markets require different entry and development strategies. Home region characteristics and the later balance between foreign and domestic operations influence the strategy. Internationalisation is not solely dependent on the behaviour of the firm either, but it is affected by the inter-firm relationships - collaboration with the clients and the networking partners. Finally, the nature of internationalisation is different if the activity is mainly based on ad hoc orders and one-off projects compared to the situation where it is a fundamental component in a firm's overall strategy. (O'Farrell et al. 1998, 35-36, 38 and 43)

There is growing interest in relationships between internationalisation and innovation, including the interest in the role of KIBS as a part of globalised structures of innovation and knowledge transmission. The functioning of multinational KIBS as bridges between global, national and regional levels is one central topic in this context. (cf. Miozzo and Miles 2003b, 4-5; Tomlinson 2001, 105; Wood 2002a, 78-79). Howells and Roberts have analysed the bridging activities of KIBS in different types of knowledge systems<sup>79</sup>. According to them, knowledge systems can be either network-type or hierarchical in form. These two forms apply to different sectors in different ways. The network form is particularly suited to new high technology sectors where knowledge rapidly becomes outdated; hierarchical structures are usual in sectors that develop more slowly. In the network model, various knowledge systems from different levels continuously interact in the creation, transmission, transformation and storing processes of knowledge. The influence of interactions is multi-directional

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<sup>79</sup> Howells and Roberts make a distinction between knowledge systems and innovation systems. According to them, a knowledge system is broader than an innovation system. It represents an underlying knowledge and learning framework and pool for a more specific process of innovation and hence systems of innovation (Howells and Roberts 2000, 255). From the viewpoint of the theme of this sub-chapter, the difference is not, however, of great significance.

and the structure is highly dynamic. In the hierarchical model, the international knowledge system impacts upon national systems, which in turn influence regional and sectoral systems. KIBS play an important role in both models. In the network model, KIBS have a crucial role in enabling the flow of knowledge between various points within the network. In the hierarchical model, global KIBS facilitate the flow of knowledge down the hierarchy. This kind of activity is typical of traditional professional services; for example, the global accountancy firms disseminate knowledge about international and national accounting regulatory systems to their clients. Knowledge may also flow up the hierarchy as a result of the activities of KIBS; for example advertising firms transfer region- and nation-specific cultural and social knowledge. (Howells and Roberts 2000, 263-266).

## 8 A FORESIGHT STUDY IN THE FINNISH KIBS SECTOR

The main objective of this chapter is to handle in more detail the implementation of the empirical part of the study, and to discuss the related methodological issues that were preliminarily referred to in the research plan in Chapter 2. As background to this discussion, a brief description of the Finnish KIBS sector based on statistics is first given. This information also has already been provided earlier to a minor extent: the characteristics of the KIBS sector were compared in Chapter 4 between those countries where statistical data on these branches are available; Finland is one of these countries. However, Finnish national statistics provide more detailed and more recent information than that which can be obtained in the internationally comparable statistics.

### 8.1 Brief statistical description of the Finnish KIBS sector

A statistical source that provides rather accurate and relatively up-to date information on Finnish KIBS branches is the Statistics of Enterprises and Establishments based on the Business Register of Statistics Finland<sup>80</sup>. These statistics describe in particular private entrepreneurial activity, and they cover all enterprises, corporations and self-employed persons that are liable to pay value added tax or have paid employees. For this study, the number of establishments, personnel and turnover of the KIBS branches in Finland by region during the period 1995 - 2001 has been picked from the database of these statistics. The most recent information at the time of writing of the research report has been available for the year 2001. The sub-sectors included in the study have been determined on the basis of the definition and operationalisation of KIBS described in Chapter 3. The sectoral data have been picked on the most accurate level, i.e. the five-digit level, and grouped for this study into nine main groups; the sub-sectors selected and their grouping are shown in detail in Appendix 1. Based on this information, the size of the Finnish KIBS sector, its division into sub-sectors, company size, regional concentration and development from the latter half of the 1990s onwards will be examined in the following.

Table 11 shows the number of establishments and personnel and the amount of turnover in the Finnish KIBS sector by main groups in 2001. The number of

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<sup>80</sup> The figures of the Statistics of Enterprises and Establishments are not directly comparable to the figures of National Accounts, which were used in Chapter 4.2. The first difference concerns the producer type: the Statistics of Enterprises and Establishments focuses on the private sector, whereas the National Accounts also include the public sector. In addition, some establishments which are included in business services in the Statistics of Enterprises and Establishments belong to manufacturing in the National Accounts. The parameters to be measured also differ from each other - in the description of output even very clearly: the Statistics of Enterprises and Establishments describe turnover, and the National Accounts value added. The number of personnel in the Statistics of Enterprises and Establishments differs from the number of employees in the National Accounts because the concept of the employed is defined in different ways in these two statistics.

personnel in the KIBS branches totalled 119 208 that year; personnel was distributed among 28 025 establishments. The turnover amounted to more than € 12 billion. Computer services constituted the largest sub-sector, accounting for 30% of the total personnel, and for even slightly more of the total turnover of KIBS. When examined in terms of personnel and turnover, the second biggest sub-sector was technical services. The other sub-sectors were clearly smaller. Advertising and marketing services and management consultancy were the next biggest sectoral groups, when measured in terms of turnover. When measured in terms of personnel, accounting and auditing services and labour recruitment services were the third and the fourth biggest sub-sectors<sup>81</sup>. When examined on the basis of the number of establishments, the size order of the sub-sectors is different. The highest number of establishments is in the technical services; the next highest numbers are in management consultancy and in accounting and auditing services. Computer services come only fourth in size, when measured with the number of establishments. The lowest numbers of establishments are in R&D services, labour recruitment services, training services and legal services; these sub-sectors are the smallest also when measured by turnover<sup>82</sup>.

Table 11: Establishments, personnel and turnover in the Finnish KIBS sector by main group in 2001 (Statistics Finland)

KIBS branches	establishments		personnel		turnover*	
	number	%	number	%	amount	%
Computer and related services	4 170	14.9%	35 783	30.0%	3 820 678	31.4%
Research and development	293	1.0%	2 049	1.7%	180 830	1.5%
Legal services	1 605	5.7%	3 372	2.8%	429 516	3.5%
Accounting and auditing	4 533	16.2%	10 932	9.2%	719 386	5.9%
Advertising and marketing	3 222	11.5%	9 634	8.1%	1 668 395	13.7%
Technical services	7 868	28.1%	31 985	26.8%	3 712 640	30.5%
Management consultancy	4 619	16.5%	8 827	7.4%	1 096 377	9.0%
Labour recruitment services	525	1.9%	10 245	8.6%	307 652	2.5%
Training in the private sector	1 190	4.2%	6 381	5.4%	231 329	1.9%
<b>KIBS total</b>	<b>28 025</b>	<b>100.0%</b>	<b>119 208</b>	<b>100.0%</b>	<b>12 166 803</b>	<b>100.0%</b>

\* billions of euros

<sup>81</sup> In the labour recruitment services the number of personnel is not fully comparable to the other KIBS branches, because in the case of companies that lease out labour the leased employees are also counted among the personnel of that company.

<sup>82</sup> Labour recruitment and training as business service branches are small because the majority of these services are provided in the public sector. The small size of the R&D sector is explained by the fact that R&D activities are to a great extent conducted in-house in manufacturing companies. In the year 2001, the R&D sector has also been reduced compared to previous years due to changes in the statistical categorisation: all R&D activities of industrial companies have been transferred from the business services category over to the sectoral classes of manufacturing, i.e. from 2001 onwards industrial R&D activity is classified as manufacturing even when it is carried out in separate establishments.



In 2001 the average establishment size in the Finnish KIBS sector was slightly smaller (four persons) than in all sectors (five persons). The average establishment size varies inside the sector, which is reflected in the above described difference in the size order of the KIBS sub-sectors depending on whether the personnel and turnover or the number of establishments is examined. In computer services the establishments are bigger than in the other KIBS branches; the average establishment size in computer services was seven persons in 2001. Instead, in accounting and auditing services and in management consultancy there are very many small establishments. In the latter sub-sectors the average establishment size is two persons.

KIBS all over the Western countries have concentrated in the metropolitan areas and other major urban districts (Hermelin 1997, 98; Strambach 2001, 57; cf. also Chapter 5 in this study). Strong concentration can also be detected in Finland. The Uusimaa region<sup>83</sup>, which covers the Helsinki Metropolitan Area and its neighbouring municipalities, had 45% of the establishments of the KIBS sector in the entire country in 2001; of the personnel in this sector, 56% worked in Uusimaa, and 65% of the turnover of the sector was produced in this area. In Finland economic activities are overall concentrated in the Helsinki Metropolitan Area, but not nearly as heavily as the KIBS sector: in 2001 the share of Uusimaa of the total number of establishments of all sectors was 30%, of the personnel 36%, and of the turnover 44%. The strong concentration of KIBS in the Helsinki region means that the sector occupies quite a different position in the economy of this region than elsewhere in the country. Table 12 shows that in the private sector in Uusimaa every sixth establishment represents KIBS branches; of the personnel nearly every seventh is working in KIBS enterprises.

Table 12: Share of KIBS of the establishments, personnel and turnover of all industries in Uusimaa, other Finnish regions and in the whole country in 2001 (Statistics Finland)

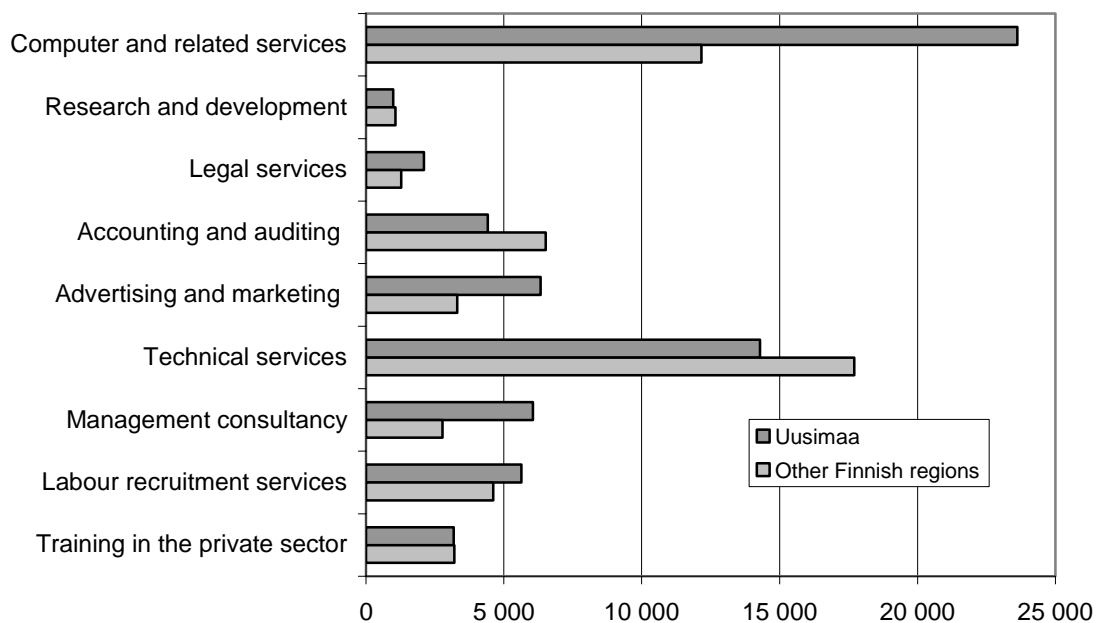
	Share of KIBS of all industries in terms of		
	establishments	personnel	turnover
Uusimaa region	16.9%	14.6%	6.6%
Other regions	8.7%	6.4%	2.9%
Whole Finland	11.1%	9.3%	4.5%

The concentration varies in the KIBS sector by sub-sector. Figure 6 indicates how big a part of the personnel in different KIBS sub-sectors worked in 2001 in the Uusimaa region on the one hand and elsewhere in the country on the other hand. The most heavily concentrated sub-sector is management consultancy;

<sup>83</sup> In this study a division according to the Employment and Economic Development Centres is used as the regional categorisation. The area of the Employment and Economic Development Centre for Uusimaa covers the areas of two regional councils: Uusimaa and Eastern Uusimaa. The areas of regional councils correspond to the official regional classification of the European Union - the NUTS Nomenclature - at the three-digit level. (Statistics Finland: Regional classifications and boundary data)

nearly as much concentrated are computer services, advertising and marketing, and legal services. In these sub-sectors over 60% of the personnel are working in the Uusimaa region. Accounting and auditing services and technical services are most evenly distributed geographically; in the former case, especially small book-keeping firms, which are located all over the country, effect the relatively even distribution. However, also in accounting and auditing services more than 40% of the personnel are working in Uusimaa.

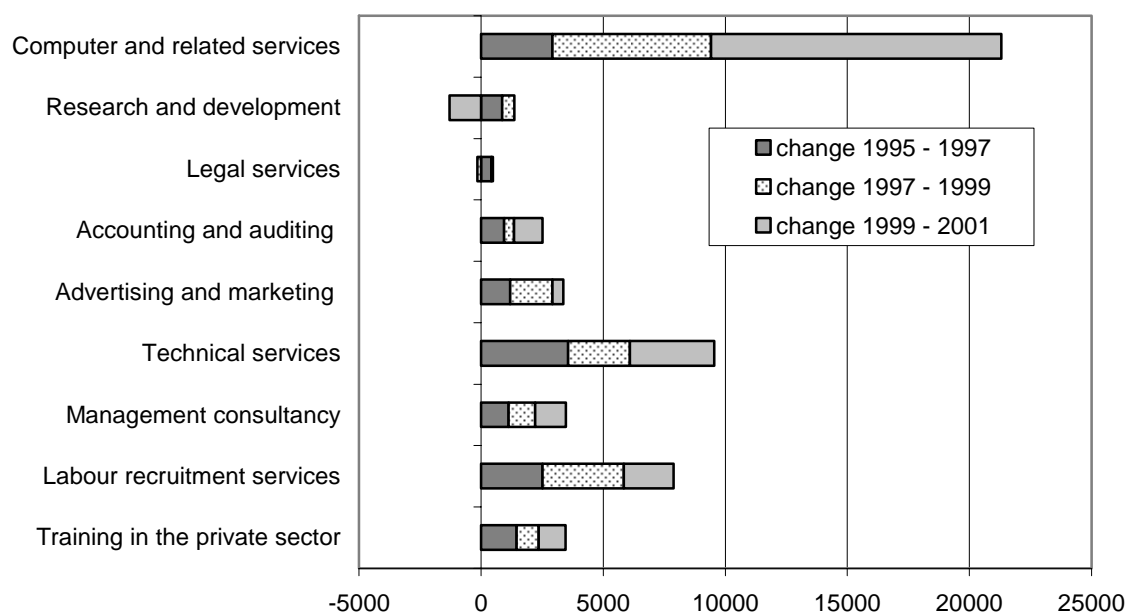
Figure 6: Geographical concentration of KIBS: the distribution of the personnel in the main KIBS groups between Uusimaa and other Finnish regions in 2001 (Statistics Finland)



In the international comparison in Chapter 4.2, it was already noted that the KIBS branches had grown very rapidly towards the latter half of the 1990s in Finland. The growth can also be seen in the figures of the Statistics of Enterprises and Establishments: from the year 1995 to 2001 the personnel in the KIBS sector increased by 51 950 employees in all (by 77.2%). The turnover was more than doubled - the quantitative growth in turnover was € 6.8 billion; the number of establishments grew by 7 746 (38.2%). The growth rate of KIBS differs clearly from that in all sectors, even though the general development of the Finnish economy was also dynamic in the review period. In all sectors, personnel increased by 22.2%, turnover by 63.2% and the number of establishments by 18.2%. Figure 7 shows the development by sub-sector in terms of the number of personnel. The Figure supplements the analysis made in the international comparison by providing information on the development subsequent to the year 1999. Furthermore, the time range examined is divided

into three periods in the Figure, which allows a study of the various stages of the development.

Figure 7: Growth of the number of personnel of the KIBS main groups in Finland in the years 1995 - 2001 at intervals of two years (Statistics Finland)



When examining the whole period 1995 - 2001, it can be stated that computer services have played a central role in the increase of personnel in the KIBS sector: over 40% of the overall growth in the sector has taken place in the computer services sub-group. Technical services, which in 1995 constituted the biggest KIBS sub-sector, had grown clearly less than computer services. However, they still stand out as the second fastest growth area among KIBS quantitatively speaking. When the size of the sector is taken into account, the growth has been relatively higher than with the technical services both in advertising services, management consultancy and in training services<sup>84</sup>. Both quantitatively and relatively, the growth has been smallest in R&D services<sup>85</sup> and in legal services. When analysing the development in more detail during the three different periods of time, it can be noted that the growth of computer services is focused on the two latter review periods; the growth was especially strong during 1999 - 2001. Conversely, in most other KIBS sectors, the most intense growth period was during the years 1995 - 1997. In technical services, management consultancy, training, accounting and auditing as well as in legal

<sup>84</sup> Relatively speaking the growth has been most notable in labour recruitment services, whose development cannot, however, be directly compared to the other KIBS sub-sectors, because, as stated earlier, leased labour is included in the personnel of establishments providing recruitment services.

<sup>85</sup> Similarly, the figures describing the development of R&D services are not fully comparable with those of the other sub-sectors. The small growth in this sector is partially explained by the "reduction" that was caused by the above mentioned change in the statistical classification in 2001.

services the growth slackened during the period 1997 - 1999. In 1999 - 2001 the growth rate in these sub-sectors either remained at the level of the previous review period or was slightly accelerated. In accounting and auditing the fluctuations in the growth rate have been sharper than in the other sub-sectors. In advertising and marketing the fastest growth period took place during the years 1997 - 1999; during the last review period the growth in this sector was considerably decelerated.

Quantitative forecasts concerning specifically KIBS branches have not been made in Finland. However, there is a forecast for the development of all business services until 2015. This forecast is included in a study published in 2001, in which business services are examined as one of the key clusters in Finland. According to the study, the average annual growth until 2015 would be in the business services: 3.3% in the case of production and 2.8% in the case of employment. The forecast signifies a clear deceleration of the development from the level of the latter half of the 1990s, when employment and production in business services grew by about 9% per year in Finland. Also compared to the past in the longer term, the growth of business services would be somewhat slower in the future: during 1981 - 2000 the production of business services increased in Finland by 4.6% and employment by 5.0% per year on average. Compared to the development of the economy as a whole, the study predicts that production of business services would develop approximately at the same pace as the production in all sectors on the average, but that the growth of employment would be clearly faster in business services. According to this forecast the annual production growth in all sectors would be 3.2% and the annual employment growth 0.7% by the year 2015. (Hernesniemi et al. 2001, 49 and executive summary)

## **8.2 Conducting the study**

This sub-chapter describes the implementation of the empirical part of the study and gives reasons for the methodological choices made in the sampling and in the acquisition and analysis of the material. Before going into a detailed description of the choices made in the different stages of the study, a brief discussion about the most central methodological solutions of the study is necessary. These solutions are:

- using expert opinions as a source of futures information
- selecting the sample from representatives of KIBS companies at the leading edge, supplemented with representatives of professional associations
- using face-to-face interviews as a method of eliciting expert opinion.

The issues related to these solutions also play a central role when the reliability, validity and generalisability of the results of the empirical part of the study are evaluated at the end of this chapter.

### 8.2.1 Central methodological solutions of the study

Information about the future always relies in one way or another on human judgement. Objective and verified facts, which can, at least to some extent, be acquired by studying the past or the present, can never be obtained in futures studies. On the other hand, information about the future is often especially valuable and strived for. To enable application of the criteria of scientific knowledge as far as possible in this context, too, one has to be aware of the special features and problems related to human judgement. Firstly, personal opinions include a number of such possibilities of bias that result from general imperfections and variations in human activity, such as memory inadequacies and variations in the level of effort and involvement. Secondly, the opinions of people reflect values, attitudes and beliefs that have been formed during their individual life history. Thirdly, the neutrality of human arguments is reduced by the fact that they very often serve specific interests. Further, expressed views do not always reflect the respondents' real thought and knowledge, but the official stand of the organisation they represent or public opinion, i.e. the answers are idealised. When acquiring information about the future, all the above-mentioned issues must be analysed and their effects evaluated. (Godet 1994, 40; Loveridge 2000, 38 and 42; Rubin and Rubin 1995, 67).

In futures studies, *experts*, defined in different ways, have been the most common source of "judgemental knowledge". Also the empirical material of the present study has been collected by mapping out expert views of the future prospects of the KIBS sector. When using experts as the source of information about the future, the following typical phenomena should be taken into account besides the afore-mentioned general issues regarding human judgement:

- Wholly new ideas about the future call for daring and imagination and are rare. Much more often the views of experts - even when they themselves believe they are anticipating something new - are such that others have already identified them as important issues. Loveridge describes the first mentioned activity as "real foresight" or "discovering"; the latter activity he terms "institutional foresight" or "rediscovering". Although foresight usually aims to find something wholly new, rediscovering should not be underrated either. It may bring up ideas that have previously been known to only few or been forgotten altogether. It is possible that through institutional foresight these ideas come for first time to the notice of such actors that have the power and the will to put them into practice. (Loveridge 2000, 12-14; see also Godet 1994, 48) In the conceptual framework of this study, real foresight can be thought to refer to the revelation of weak signals and institutional foresight to the description of strong prospective trends.
- At the same time that discovering totally new development possibilities is rare, the pace of changes in phenomena whose existence has already been observed is often overestimated. This overestimation is very common among both laymen and experts providing anticipatory information. However, experience has shown that the factors of inertia are highly important. This is why Godet suggests that a foresight project should

always begin with a systematic recording what has at least a good chance of remaining unchanged. (Godet 1994, 49-50)

Besides the issues linked with the nature of expert knowledge, there are important issues linked with the acquisition of this kind of knowledge. The first is the question of who could be considered experts in the thematic field concerned. Kuusi divides the experts used in futures studies into three main groups: scientists, decision-makers and synthesisers (Kuusi 1999a, 35-36). The target group of the study in hand, which mainly consists of KIBS companies, can be interpreted to represent the second alternative in the classification. The expertise of this group is based on the fact that companies are *makers of futures* in their own sector. Their activities influence the development in such a way that some of the possible futures become more probable. In addition to enterprises, the sample of this study comprises the most important professional associations in the KIBS sector. These associations, whose task is to support the development of their field and for that purpose to monitor the trends in the operating environment, can be considered to represent the group of *synthesisers*<sup>86</sup> in the classification by Kuusi.

Companies at the leading edge in each KIBS sub-sector, i.e. firms that were known to be either innovative in general or highly advanced in some field of expertise, were selected for the study. The advantage of such a *precursor analysis* is that it can give hints of emerging new development trends more likely than a study of firms representing the average level. However, focusing on the views of the forerunners is not fully unproblematic. It restricts the range of opinions concerning the future, which the foresight studies seek in general to map out as widely as possible. In the present study, reducing this problem has been strived for by making the sample as versatile as possible inside the group of leading companies: firms from different size and age categories and from different kinds of operational environments, i.e. from different geographical areas, have been included.

Even after the identification of the target group suitable for functioning as expert informants in a study, the question remains of the possible variations in the degree of expertise inside this group. The study in hand aimed to ensure the best possible degree of expertise by targeting the interviews to persons that play a central role in KIBS companies and in professional associations, i.e. to persons with broad views and a strong position in making the future. In the KIBS companies, managing directors were asked and mostly also obtained as interviewees; some interviewees were marketing or personnel managers. In

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<sup>86</sup> Although the classification by Kuusi describes comprehensively enough the target group of this study, it should be pointed out that especially in the recent foresight studies an "expert" has often been understood in a still wider sense. It has been considered especially important to include such actors whose lives are affected by the future phenomena studied, although these actors themselves would not have any significant possibilities of influencing the development trends. For instance, various consumer groups, and representatives of youth and of non-governmental organisations have been regarded as important sources of futures information. (FOREN 2001, 101; Loveridge 2000, 16-17)

professional associations the majority of the interviewees were executive managers.<sup>87</sup>

Other questions connected with the acquisition of expert knowledge - sampling procedure, eliciting expert opinions, compiling and analysing the information obtained, and drawing conclusions - will be mainly brought up in the following sub-chapters, which describe the practical execution of the empirical part of the present study. However, the selection of face-to-face interviewing for the basic method of collecting the material deserves a more detailed discussion. In the following, the advantages and problems of the method and the ways in which the problematic points have been tackled in this study will be analysed.

The following points have been considered in general to be the special strengths of the interview method (Arksey and Knight 1999, 32; Rubin and Rubin 1995, 1):

- Face-to-face interviewing provides the possibility to capture detailed knowledge, to seek clarifications to earlier answers and to enhance earlier questions by improvising new ones.
- The interview situation helps people to structure those experiences that exist in the form of so-called tacit knowledge.
- The motivation of the participants is usually high, as the interview method provides an opportunity to perceive and structure the reality in a novel way.

Of the above-mentioned advantages, the possibility of eliciting tacit knowledge is especially important. Several researchers have pointed out that most people, among them highly educated experts, frequently experience the problem of knowing more than they are able to tell, i.e. knowledge that can directly be expressed in words and numbers, only represents a small fragment of all relevant knowledge (Eerola 1996, 192). The high motivation of the respondents when using the interview method is at least partly related to this. Besides it being important for a researcher that tacit knowledge can be put into an explicit form, the interviewees as well experience benefit from the situation for the very reason that they succeed in putting into words knowledge that was previously only weakly shaped (see the next sub-chapter about the experiences of this study).

When examining the use of interviews as a foresight method, the above considerations can be specified and complemented with the following points:

- The *right questions* play a key role in eliciting opinions of the future (cf. Godet 1994, 39). Especially in the case of foresight studies focused on specific thematic fields, the researcher has only seldom sufficiently in-depth expertise to be able to cover all relevant questions. In fact, in foresight studies experts are often already used at the stage of formulating the

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<sup>87</sup> Systematic procedures for determining the degree of expertise have also been developed for foresight. The most common one is based on the self-assessment of those studied e.g. using the following scale: unfamiliar - casually acquainted - familiar - knowledgeable - expert (Loveridge 2000, 46-47). Such systematic procedures are useful especially when the target group of the study is large and includes many kinds of actors whose expertise is difficult to otherwise assess.

questions. The interview method offers another solution to the problem: at the same time as the interviewees answer the questions originally put to them, they also raise new important questions.

- The *underlying reasons for opinions* of the future are essential, i.e. what factors an informant takes into account when he or she expects development to take a certain route (cf. Loveridge 2000, 36-37). Although the underlying reasons are nowadays analysed in quantitative foresight methods as well, the possibilities in an interview are better in the sense that the depth and detailedness of the analysis can be flexibly adjusted as necessary. The problem of varying information policies concerns, however, all foresight methods using experts as informants: there are differences as regards the extent to which experts are ready to share their knowledge with others, i.e. how much they want to keep secret (Kuusi 1999a, 173).<sup>88</sup>
- When dealing with an uncertain and unknown theme - the future - eliciting opinions often requires "*seeding the expert's mind*" (Loveridge 2000, 40): the informants need material and conceptual tools that stimulate their thinking and make it possible to structure the knowledge. Face-to-face interaction in conveying such material is often the most effective means. The significance of seeding became evident in this study, too (cf. Chapter 8.2.3).

Besides the advantages described above, the target of this study, the Finnish KIBS sector, influenced the choice of face-to-face interviewing for the method to be applied. The reasons in this respect relate partly to the Finnish situation and partly to the nature of the KIBS sector in general. Due to the scarcity of previous research, there was not much information about the Finnish KIBS sector at the time of starting the study in hand. Thus it was thought that material produced freely ensures the emergence of essential points better than accurately limited questions. More generally, the use of an informal method is justified by the "indefinite" character of services and service innovations, which was described in Chapter 6.3. It can be assumed that the difficulties in utilising expertise, which have come up when the most common foresight methods - Delphi and expert panels - have been applied in service sectors (cf. Chapter 2), at least partly relate to the special nature of these sectors. The Delphi surveys are largely based on structured questions that require that the respondent has a ready and clear view of the future development. Interactive techniques used in workshops offer in principle the possibility of also taking into account more spontaneous and first-hand material. However, the lack of time often leads to a situation in which this kind of material is not studied deeply enough: the views of experts are collected and accepted as such. Thus the end result is quite similar to that with Delphi: it is assumed that the knowledge possessed by the experts is

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<sup>88</sup> Kuusi has developed a version of Delphi (the so-called Argument Delphi) where he heavily emphasises the importance of revealing the reasons behind expert opinions. He has also analysed further the issues of information policy. The willingness of experts to distribute their knowledge may, among other things, depend on the reasonabilities on which the foresight study is based. These reasonabilities can be divided into three main categories: predictive reasonability, option reasonability and commitment reasonability. The first strives for accuracy in prediction, the second aims at finding new possibilities, and the third examines the degree of stakeholders' commitment to the realisation of new possibilities. (Kuusi 1999a, 116-120 and 128-129)



already analysed and conceptualised, which is seldom the case in the service sectors.

All in all, it can be concluded that the specific strength of the interview method lies in eliciting opinions. On the other hand, the specific challenge lies in the interpretation of the results in a generally applicable way. In the interview method the risk of subjective interpretations is more present than in many other approaches. The role of the researcher is more emphasised than in structured surveys and in interactive methods based on team work. Bilateral interaction - the interaction between the interviewer and the interviewee - plays a key role in this method (cf. Kvale 1996, 35-36). The interviewer's participation in the knowledge production process sets high demands for his or her actions. Kvale lists e.g. the following as the interviewer's important skills and tasks (ibid., 148-149): having extensive knowledge of the interview theme; posing clear and understandable questions; being sensitive and open to answers of the interviewees; remembering what interviewees have said; being critical, i.e. not taking everything said at face value; steering, structuring and interpreting the discussion. Finding a balance between openness and structuring is one of the greatest challenges. In the worst case, the interviewer may ignore the way in which the interviewee has structured the topic and may replace it by his or her own ideas based on knowledge provided by earlier studies. It is important that the interviewer is aware of his or her conduct and analyses its impacts. Furthermore, the role of the researcher is central not only in information acquisition but also in combining and analysing the results and drawing conclusions. The material produced by face-to-face interviews is often very extensive and of varying precision; the essentials must be extracted and condensed from this first-hand material.

In the present study, reduction of the risk of subjective interpretation was attempted by going as thoroughly as possible into the theoretical issues and into previous research results available on the topic before the actual interviews. Another way of attempting to reduce the risk of subjectivity was submitting the results, after their preliminary collection, for evaluation by a larger group of experts in several workshops. This procedure played a central role in validating the results, and it will be further discussed in connection with the evaluation of validity in Chapter 8.2.3.

## **8.2.2 Sampling and application of the interview method**

As stated above, the future development of KIBS was mapped out on the basis of views of companies at the leading edge in their own sub-sector. Also in this part of the study the sub-sectors examined were determined according to the KIBS definition specified in Chapter 3.3. Before the company visits, interviews of professional associations were conducted. The nomination of the companies selected for the study was preliminarily made in this connection, i.e.

recommendations were requested from the associations for the companies to be interviewed in their own sector. The sample was supplemented during the course of the study based on the new hints obtained from the companies interviewed. Thus the method applied in the study was the so-called snowball sampling method (Arksey and Knight 1999, 4). When asking the proposals for the interviewees, the selection criteria were stated to be, besides general innovativeness, successful development work in some special, promising field. For instance, in legal services the sample comprised firms specialised in intellectual property rights, environmental legislation and in international transactions, as well as firms that had developed commodified services.

The number of the companies interviewed (87 in all) was determined on the basis of four factors. Firstly, the study aimed to cover all the central KIBS sub-branches and also the most important specific fields inside them. For instance in technical services, the sample included different types of engineering firms (community planning, building services and industrial engineering), as well as architectural and design firms. In the advertising and marketing sector, the sample was composed, besides actual advertising agencies, of communications offices and media offices, of contractors performing market surveys and of offices specialised in client bulletins. Secondly, the study looked for versatility in the size, age and geographical location of companies. Thirdly, as the study was about foresight, the new activities were weighted, which meant that in computer and related services the sample was extended beyond the scope that would otherwise have been necessary. In addition to companies providing more "traditional" software products and services, many of the so-called new media companies were included, i.e. companies operating in the areas of Internet consultancy and digital contents production, (production of contents for Internet and mobile terminals). Fourthly, within the above framework, firms were included according to the common practice of the snow-ball sampling until the confidence was gained that there was little new to be learned from subsequent interviews (cf. Rubin and Rubin 1995, 73).

Of the professional associations, all the major associations were included in the study. The number of professional associations varies, however, by sub-branch in the Finnish KIBS sector. Thus, there were three associations interviewed in computer and related services and two in auditing services. Legal services, accounting services, advertising and marketing services, management consultancy and technical services were each represented by one association. The division of the companies interviewed by sub-branch appears in the summary column of Tables 13 and 14 that illustrate the size and age distributions of the companies. In the Tables the grouping by sector differs from the one used in statistical examinations in that the smallest KIBS sub-sectors have been included in the bigger branches close to them: R&D in technical services, labour recruitment and private-sector training in consultancy services. Due to the small size of the sub-branches mentioned, only a few companies representing them were included in the study: R&D companies and training companies with one each, and three firms providing recruitment services. As stated in the research design, a specific aim in the study was to pay attention to

the previously little studied non-technological KIBS. Thus, non-technological KIBS were included in the sample slightly more (46) than technologically oriented KIBS (T-KIBS), the number of which was 41.

Table 13: Companies interviewed in different KIBS branches by company size (number of personnel)

Branch	Number of personnel						Total
	1-9	10-49	50-99	100-249	250-499	500+	
Computer and related services		6	8	5	5	2	26
Technical services (incl. R&D)	1	8	2	2		2	15
<b>T-KIBS total</b>	<b>1</b>	<b>14</b>	<b>10</b>	<b>7</b>	<b>5</b>	<b>4</b>	<b>41</b>
Legal services	5	1	2	1			9
Accounting and auditing	2	5	2	3	1	1	14
Advertising and marketing		5	1	3	1		10
Management consultancy (incl. recruitment and training)	7	3	1	1	1		13
<b>Non-technological KIBS total</b>	<b>14</b>	<b>14</b>	<b>6</b>	<b>8</b>	<b>3</b>	<b>1</b>	<b>46</b>
<b>All interviewed companies</b>	<b>15</b>	<b>28</b>	<b>16</b>	<b>15</b>	<b>8</b>	<b>5</b>	<b>87</b>

Table 14: Companies interviewed in different KIBS branches by year of establishment

Branch	Year of establishment					Total
	Before the 1970s	1970-1979	1980-1989	1990-1994	1995-1999	
Computer and related services	1	1	8	10	6	26
Technical services (incl. R&D)	5	4	5	1		15
<b>T-KIBS total</b>	<b>6</b>	<b>5</b>	<b>13</b>	<b>11</b>	<b>6</b>	<b>41</b>
Legal services	4	1	2		2	9
Accounting and auditing	5	2	4	1	2	14
Advertising and marketing	3	2	5			10
Management consultancy (incl. recruitment and training)	3	3	6	1		13
<b>Non-technological KIBS total</b>	<b>15</b>	<b>8</b>	<b>17</b>	<b>2</b>	<b>4</b>	<b>46</b>
<b>All interviewed companies</b>	<b>21</b>	<b>13</b>	<b>30</b>	<b>13</b>	<b>10</b>	<b>87</b>

Table 13 shows that companies which met the criteria set and were willing to participate in the study were found in all size classes. Companies in the size class of 10 to 49 employees form the biggest group. Nearly of the same size with each other are the groups of micro firms with less than ten employees, of companies with 50-99 employees and of companies with 100-249 employees. In the size classes of 250-499 and of more than 500 employees there are fewer companies. Yet, these larger companies were in the study “over-represented” compared to the general size distribution of the Finnish KIBS companies due to

the study's objective of acquiring a diversified, not random, sample. In terms of their operational lifetime, too, the companies interviewed represented a wide variety: from a century old law firm to Internet consultancy companies established the same year as the interviews were made (Table 14). Regarding the geographical location, the study mainly focused on the Helsinki Metropolitan Area, where nearly half of the KIBS establishments are situated. The Metropolitan Area was emphasised in the study even more than the area's share of the KIBS sector would warrant, for two reasons. Firstly, the KIBS companies in this area met most often the criterion of a forerunner company. Secondly, it was difficult to find KIBS companies that would have represented various sub-branches in a versatile way elsewhere in the country. Companies included in the study from outside the Metropolitan Area were from two such regions where KIBS are relatively strongly developed: the Tampere and Oulu regions. Even in these regions the highly advanced KIBS companies were mainly T-KIBS. However, examples of dynamically developing legal, accounting, advertising and consultancy companies were found in these two regions, too; 1-3 companies from each sub-sector mentioned were included in the study. All in all, the sample consisted of 67 companies from the Helsinki Metropolitan Area and of 10 companies from both the Tampere and the Oulu regions.

The interviews were performed between December 1999 and August 2000. When contacted for the actual interview, all professional associations and most companies expressed a positive attitude; only three company contacts out of 90 did not produce the desired result. The scarceness of previous research into KIBS in Finland may have contributed to the positive interest in the sector. At the beginning of the session, the background of the study was briefly described to the interviewees, and a statistical report concerning the Finnish KIBS sector was given to them. This report made by the researcher as a basis for interviews treated the development of KIBS in different sub-branches in the whole country and in the geographical areas included in the study. Providing the interviewees with concrete benefit from participating in the study right at the beginning was one way that was intended to overcome the initial barriers of the situation. The positive attitude towards the study that the majority of the respondents showed became stronger as the interview progressed. The experiences gained were in line with the common advantages of the interview method identified in previous studies. Some respondents described the interview session as a rare opportunity to concentrate and systematically reflect on the developments of their own field. Also the new ideas obtained were repeatedly brought up. The usefulness of interviewing compared to postal surveys was stressed; a few interviewees even stated that they would not have responded had the study been carried out with such a survey.

The interviews were based on broad themes. In the interview sessions a semi-structured outline, where each theme had been specified by more detailed questions, was used as supporting material. The outline of the themes was, however, applied flexibly in the interview situation - not by progressing from item to item. The themes or the questions were not sent beforehand to the

interviewees. In the acquisition of futures information, the opinions of the interviewees were elicited especially regarding the whole KIBS sub-sector they represented. Besides the professional associations, in which this approach is self-evident, the company interviews did not primarily chart the prospects of the company. Naturally, the status, experiences and development potential of the company came up and influenced the way in which the more general trends were seen. Basic facts about the companies interviewed were also needed to describe the sample. However, as little time as possible was spent on this basic information during the interviews; company-specific facts were collected beforehand from their homepages and only supplemented at the beginning of the interview, if necessary.

In the elaboration of the interview themes, the research questions formulated for the empirical part of the study functioned as the starting point. However, it was hypothesised that expert opinions concerning strong prospective trends and weak signals, as well as views related to innovation activities and know-how in the KIBS sector cannot necessarily be elicited by direct questions. Thus the interview themes included, besides questions mapping out directly these issues, other themes charting the various sides of the development of KIBS. It was planned that strong prospective trends, weak signals and characteristics of innovation and know-how would be “dug out” of this indirect material in the analysis of the results. The findings of previous KIBS studies and the research needs brought up by them were utilised in the selection of the themes and in formulation of the related specifying questions. As it was expected that the concepts of futures research were unknown to many of the interviewees, the direct questions concerning strong prospective trends and weak signals were put only after the other themes, as a summary of the discussion. At the very end of the session the interviewees were still given a chance to present such points of view that the interviewer had not come to think of asking. The themes of the interviews are listed below, and the related specifying questions are given in Appendix 2:

- A : Basic information on a company
- B: Company’s views on the development prospects in the branch
  - 1) Development of the outsourcing process
  - 2) Nature and development of innovation activities
  - 3) Client relationships and co-production of services
  - 4) Networking between service companies
  - 5) Interdisciplinary activities, multisectoral companies
  - 6) Expressions and influences of internationalisation
  - 7) Location patterns of companies
  - 8) Increasing and decreasing sub-areas in the branch
  - 9) Needs for professional skills
  - 10) Special problems and development needs in the branch
- C: Strong prospective trends and weak signals in the future of the branch
- D: Other aspects considered important by the interviewees

The main length of an interview was from one to one and half hours; in some cases the session, however, lasted clearly longer. The time horizon the interviewees were asked to think about in their evaluation of the future developments was about ten years (when asking directly about trends, ten to fifteen years). The researcher herself carried out all interviews and the compilation and analysis of the data received. A recorder was not used in order to ensure confidentiality (cf. Arksey and Knight 1999, 52); instead, the material was transcribed as soon as possible after the interview. The interviews were mainly conducted branch by branch. In addition to original interview reports, a summary was drafted of the interviews of each branch. The summaries were sent to respective professional associations, from which comments were invoked in order to confirm that the researcher had correctly understood the "technical" details.

### **8.2.3 Data analysis and evaluation of the reliability, validity and generalisability of the results**

As face-to-face interviews in general, this study, too, provided a large amount of detailed material. The analysis of the material was started by identifying the strong prospective trends. In the operationalisation of a strong prospective trend, the following three criteria included in the definition of the concept were utilised: a strong prospective trend is identifiable on the basis of development realised, it is significant and likely to continue at least for some time (cf. Chapter 2.2). Thus in the expert opinions attention was paid to such broad development features that came up in numerous interviews in the various KIBS sub-sectors and whose development course the majority of the interviewees were quite sure and unanimous about. The fact that central experts in the field uniformly recognise a phenomenon, consider it significant and evaluate that it will develop in a certain direction, speaks as such in favour of the existence of a strong prospective trend. In this study the experts were also central players in their sector, having both the will and the resources to take development in the direction in question. However, to meet the criteria of a strong prospective trend, supporting evidence was sought in earlier studies and in theories on KIBS, besides empirical material. Firstly, the study aimed to corroborate that the trends identified are not only opinions generally prevailing in the Finnish KIBS companies, but that they are at least in some form recognised in other studies as well. Secondly, the trends found on the basis of interviews were compared with the driving forces identified in the theoretical part of the study: in the case of each trend, analysis was made to determine whether one or more general driving forces, effective on the level of the entire society, were raising the significance and supporting the continuity of the trend.

The primary aim in the study was to identify strong prospective trends that are common to the entire KIBS sector. In addition, the specific forms these trends receive in the different sub-branches and the significance they bear for the

development of these sub-branches was studied. Branch-specific summaries made of the original interviews were utilised for this. As it had already been expected while planning the interviews, strong prospective trends had to be sought in the whole interview material; the same trend came up with different interviewees in connection with different themes. The answers given to the direct question concerning the strong prospective trends were typically rather general in nature and contained mainly descriptions of the most widely known phenomena.

The purpose of identifying the strong prospective trends was to create an overall picture of the future development of KIBS, i.e. to collect together those central lines of development that would seem the most probable in the light of current knowledge. In accordance with the research design, another perspective to the future of the sector was the possible unexpected turns. These were examined by seeking such individual views from among the interview material that deviated from the common line and might mean the breakdown of a trend or a weak signal of some entirely new phenomenon. However, the starting point was that even weak signals are not mere opinions. Therefore a phenomenon that was interpreted as a weak signal had to show itself at least in some concrete actions corresponding to its contents. Direct questions were also put concerning the weak signals, but the results were even fewer than in the case of the strong prospective trends. All in all, finding weak signals turned out to be a much more difficult task than the trend analysis. It was particularly difficult to meet the criterion of relevance, which means that phenomena identified as weak signals will, if realised, be essential for developments; an unexpected finding is not as such a weak signal (cf. Chapter 2.2). Despite the difficulties, this criterion was retained in the study, i.e. the aim was, not to list a great number of more loosely interpreted "weak signals", but to find even a few that might have a decisive meaning.

In addition to mapping out strong prospective trends and weak signals, the future development of KIBS was analysed specifically from the standpoint of innovation activities. Interesting examples of the innovation activities in the various KIBS sectors were looked for in the material and analysed in the light of theories regarding the nature of service innovations and the role of KIBS. The interviews brought up numerous descriptions of both new product ideas and novel processes. Particularly the themes concerning outsourcing, client relations, networking, internationalisation, and growing sub-areas within KIBS led to discussion about novelties. For instance, outsourcing of expert services is often connected with important imperatives for change. Thus the KIBS companies described the new solutions they had provided for their clients when telling the interviewer how a service previously produced in-house came to be purchased from them. On the other hand, the interviewees themselves only rarely called their new solutions innovations, and as in the case of strong prospective trends and weak signals, direct questions provided only little concrete and new material. The question of the role of the respondent's branch in innovation proved especially difficult to grasp, although the research results of KIBS as sources, carriers and facilitators of innovation were referred to as a

background to the question. The interviewees considered the results interesting, but the idea that different types of expert companies would play a similar important role in innovation activities was wholly new to most of them.

The experiences described above correspond to the previous studies, which have proved that service companies often have difficulties in identifying their innovations (Preissl 2000, 132). The experience gained also shows that the foresight-related conceptual tools as well as the research findings concerning innovation activities should be made more widely known in the KIBS sector before the methods based on direct questioning can be successfully applied. In other words, the "seeding of the expert's mind" mentioned earlier turned out to be essential. The need for background knowledge, which can be used for structuring thoughts, was in this case more extensive than what it was possible to offer in just one interview session.

The theme for which direct questions were, however, a fruitful approach was future needs for professional skills. Many of the interviewees could not only describe in detail the central needs for expertise in their own field but also crystallise these into core competence areas and analyse the development processes that create the needs for specific skills. This readiness was based on the fact that improving the personnel's know-how occupied a central position in the future-oriented activities of many companies, especially in the activities targeted to the development of new services. Some companies used systematic and continuous monitoring of how the existing skills match the development of skills needs. From the viewpoint of this study, the skills needs are as such an important piece of information depicting the future challenges to KIBS. Secondly, they were utilised as an additional source when examining the direction to which the innovation activities of KIBS companies are developing. This approach was based on the idea presented in previous studies according to which innovation activities are reflected in new skills needs. Thus services innovations, which are otherwise difficult to identify, can be studied from this angle. (cf. Miles 2001, 16).

A rather detailed description was given above of how the empirical study has been done and on what basis the decisions have been made. This procedure is essential when the implementation of the study and the research findings are evaluated from the viewpoint of credibility and trustworthiness. In the following, the conditions of fulfilment of these requirements will be discussed both generally - in studies that have been carried out by a qualitative interviewing method and that include a future dimension - and concretely by taking into account the special characteristics of this study.

The central criteria of scientific knowledge - reliability and validity - are in traditional, especially quantitative, research defined as follows: Reliability pertains to the consistency of the research findings; two researchers studying the same arena will come up with compatible results. Validity refers to the extent to which the observations done indeed reflect the phenomena that have been the objects of the study. (Arksey and Knight 1999, 51-53; Rubin and Rubin



1995, 85) In the present study both the object of the study, which involves still unrealised phenomena, and the face-to-face interview method applied mean that these definitions cannot be adopted as such. In the case of phenomena concerning the future, valid information is to be understood more broadly than as a mirror of reality. Correspondingly, in a face-to-face interview, in which producing rich and versatile material is emphasised over standard answers, inconsistencies cannot, and should not, be wholly avoided.

However, what has been said above does not mean that the verification of knowledge would be less important in a study like this. It only emphasises that such a way that takes into account the nature of the contents and of the method of the study has to be found for verification. In the methodological literature on qualitative interviewing, two principles that well suit this study have been highlighted: craftsmanship and transparency. The former refers to the fact that both validity and reliability must be kept in mind at all stages of the study; verification is built into the research process and demands continuous checking and questioning (Kvale 1996, 241-243). The principle of transparency in turn requires that the sources of bias are realised and that it is made possible for the reader to follow how problems have been tackled during thematising, sampling, interviewing, transcribing and analysing (Rubin and Rubin 1995, 85-87). It is this particular procedure, called "thick description" in qualitative research (Arksey and Knight 1999, 54), which has been strived for in this study.

As for reliability, one important problem identified in the interview studies is intersubjective variability, when there are more interviewers or when the transcription is made by someone else than the interviewer (Kvale 1996, 235-236). The solution of this study, in which the researcher herself performed all the stages of the study, reduced the problem. However, the interviews do not remain unchanged even when conducted by one and the same person: during the process the interviewer learns more about the topic and this is inevitably reflected in the way the discussion is going on. As for validity, besides careful implementation of the study, a strong theoretical basis, which lays the ground for positioning the questions and interpreting the results, has to be emphasised (Kvale 1996, 244). In this study, the future-oriented nature of information acquisition places some restrictions on the application of the above-mentioned principle. However, theories and previous studies have served as a basis for understanding the phenomena examined in the form they have appeared so far.<sup>89</sup>

In the case of validity, a separate "validation stage" is also necessary. This includes judgement as to what forms of validation are relevant to a specific study and a decision on what constitutes the appropriate community for a

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<sup>89</sup> The term "triangulation" is used in the literature of qualitative methodology to describe procedures that aim to improve validity by using multiple information sources and different approaches. Earlier, triangulation was often understood as the use of multiple methods; today the emphasis is on the overall strategy of the study, including not only methodological triangulation, but also data triangulation, investigator triangulation and theoretical triangulation. (Arksey and Knight 1999, 22-23; Stake 2000, 443) The strengths of this study can be considered to lie especially in data triangulation and in theoretical triangulation.

dialogue on validity. (Kvale 1996; 237) Pragmatic and communicative forms of validation, which in qualitative methodology have been placed on a par with correspondence and coherence as legitimation criteria of knowledge, are especially important for this study. Pragmatic validation means that the trustworthiness of knowledge has to be tested through its applicability, i.e. knowledge becomes the ability to perform effective actions. Communicative validation signifies that knowledge claims have to be submitted for discussion in relevant communities. The stronger the falsification attempts that a proposition has survived, the more valid the knowledge. (Kvale 1996, 238-241) In this study the results were submitted for the evaluation of a larger expert group in several workshops, in which representatives of KIBS companies and researchers familiar with the KIBS sector participated. Some workshops encompassed specific KIBS sub-sectors, others the KIBS field as a whole. The workshops were especially important because the “one researcher model”, mentioned as a strength in connection with reliability, increases the risk of subjective interpretations inherent in face-to-face interviews.

Besides reliability and validity, an important criterion of scientific research has been considered to be generalisability, which most often has been understood specifically as statistical generalisability. In a foresight study carried out by qualitative methods, the possibilities for this kind of generalisation are very limited. The concept of generalisation can, however, be understood in two other ways, both of which well suit this study: naturalistic generalisation and analytical generalisation. In the case of naturalistic generalisation, it is a question of verbalisation of tacit knowledge: rendering personal experiences into the form of explicit propositions. Analytical generalisation involves a reasoned judgement about the extent to which the findings from one study can be used as a guide to what might occur in another situation. (Kvale 1996, 232-233)<sup>90</sup> One form of analytical generalisation is seeking precursors; it corresponds to the idea of this study of seeking such phenomena in the leading KIBS companies that in the future can be expected to become relevant in a wider scope in the entire sector. The aim to achieve naturalistic generalisation has also played a role in this study: as stated earlier, an important reason for choosing face-to-face interviews as the research method was that tacit knowledge can be elicited by means of this method.

When speaking about generalisation, what matters is not only in what sense and to what extent generalisation is possible, but also what the purpose of generalisation is. Schofield has suggested three targets: the first is studying *what is* - attempting to establish the typical, the common, the ordinary. The second is describing *what may be* - seeking the future possibilities. The third target - *what could be* - concerns desirable alternatives. (Schofield 1990, 209-210, 215 and 217) This study aims to meet the second of these targets, to describe KIBS as they may become. As mentioned in the research design, the

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<sup>90</sup> Stake in his analysis of the generalisability of case studies makes a division that includes largely the same idea as Kvale's division into naturalistic, analytical and statistical generalisations. Stake uses the terms “intrinsic”, “instrumental” and “collective” case studies to describe the differences in the nature of generalisation. (Stake 2000, 437)

basis of this study is explorative, not normative. Thus generalisation aimed at desirable alternatives is not the target of this study, although it is as such an approach that can well be applied to futures research. In practice mapping out future possibilities often leads to the same approach as analytical generalisation: to the assumption that the most advanced cases might provide findings generalisable to the future development of the phenomena studied.

The issues of validity and generalisability of the present study will be returned to in the presentation of the research results in the next chapter and in the overall evaluation of the study in the concluding chapter. There are two points in particular that need further discussion. The first is how the results have retained their relevance and “anticipatory power” up to now, i.e. have some circumstances changed to the extent that the results would be different if the interviews were made today. This issue concerns both the results on trends, weak signals and innovation prospects. The discussion about it will be started in connection with the trends and will be continued in the concluding chapter. The second issue is important specifically in the case of strong prospective trends. As the trend analysis aims to map the main lines of the future development of the KIBS sector, the requirement of generalisability is inherent in it to a much greater extent than in the case of weak signals or innovation prospects. The latter are often useful even though they are only indefinite “hints” of the future. The specific challenges of the trend analysis have been taken into account in two ways in the present study. Firstly, in addition to the description in this sub-chapter, the data analysis has been described in a still more detailed level in the case of trends in Chapter 9.1 before the presentation of the research results concerning them. This procedure aims to show as clearly as possible how the trends have been identified in order to facilitate the evaluation of their validity and generalisability and to promote further discussion about them. Secondly, the concluding chapter provides some suggestions on how the generalisability of the trend analysis of this study could be improved through further studies.

## **9 STUDY RESULTS I: STRONG PROSPECTIVE TRENDS AND WEAK SIGNALS IN THE DEVELOPMENT OF KIBS**

This chapter examines the main development features in the KIBS' future, as well as such new phenomena that might form into alternative, new development tracks. In other words, this chapter aims to answer the fourth research question: What kinds of strong prospective trends and weak signals can be found in the future development of KIBS? The empirical material collected for this study forms the most important source for the examination. The literature analysis of the previous chapters is used in the identification of trends and also as reference material in the description of the trends and weak signals. The main part of the present chapter is devoted to the analysis of the strong prospective trends. First, in Chapter 9.1 a detailed description of the process of the trend analysis is given. The analysis resulted in eight strong prospective trends; each of these will be discussed in Chapter 9.2 as a separate sub-chapter. Chapter 9.3 will present a summary of the trends. Weak signals that will, if realised, change the picture provided by the trends or bring essential new elements into it, will be discussed in Chapter 9.4. Examples of the original interview material will be found in the case of trends in an appendix (Appendix 4). Due to the nature of weak signals, there are not many interview statements referring to them; the few quotations have been included in the text.

### **9.1 Description of the process of trend analysis**

The contents and operationalisation of the concept of a strong prospective trend have been discussed in Chapters 2.2 and 8.2.3. In summary, all the three components of the concept are important for its operationalisation. In order to be a trend at all, a phenomenon must have a direction, i.e. it must have existed for some time. To be prospective, it must be connected with factors that make its continuity probable in the future. In order to be strong, a phenomenon must be extensive and important. In the case of all of these three requirements, the starting point of this study was that evidence is sought not only from interviews, but also from the literature analysed in the previous chapters. The significance of empirical and written material is, however, stressed in slightly different ways in the three above-mentioned aspects. As for the first question of the existence and main direction of a trend, studies describing the history and present situation of KIBS play a very important role as supporters of the interviewing material. In the second question of the trend's continuity, recurrent and consistent expert evaluations hold the key position; they are, however, complemented by literature-derived information on driving forces. In this study, the interview statements showing the continuity of a trend are especially important, because they are not only statements of experts, but also statements of influential actors. Thus, the probability of the trends' continuity is increased by the fact that both the driving forces influencing at the level of the whole society

and the central actors within the KIBS sector are taking the development to the direction observed. In the third question of the scope and importance of a phenomenon, uniform views of the interviewees are also crucial. Former studies supplement the picture by showing in which forms the strong prospective trends have manifested themselves in earlier times.

The actual process of the trend analysis was carried out as a “dialogue between literature and empirical material”. The process of analysis comprised four stages:

- preliminary views included in the outline of the interview themes
- identification of the trends in the interviewing material
- utilisation of the literature analysis: verifying the existence and direction of the trends in the KIBS studies and joining the analysis of the driving forces with the assessment of the continuity of the trends
- more detailed examination of the continuity and nature of the trends on the basis of the interviews; the use of literature as reference material in the identification of the changes occurred in the contents of the trends.

When drawing up the interview themes, it was already anticipated that enough information on prospective trends would not be obtained by direct questions, but that it would be necessary to look for information in the material as a whole (cf. Chapter 8.2.2). Hence the aim in the structuring of the interview outline was that the main themes would correspond to the issues that on the basis of literature seemed essential for the future of KIBS. Thus the selection of the main themes reflects the topics in which strong prospective trends were expected to lie (in addition, innovation activities and know-how formed main themes of their own). On the other hand, the free form of the interviews was to ensure that those views and issues which would not have been hit on or appropriately structured on the basis of literature would also be brought up. In fact, restructuring turned out to be necessary based on the material obtained. Some strong prospective trends had been anticipated quite well in the formulation of the main interview themes and of the questions specifying them. In the case of these trends, the question was, above all, about obtaining concrete evidence and illustrating the phenomenon (e.g. the interviewing theme “interdisciplinary activities, multisectoral companies” corresponded largely to the phenomena linked with the trend of convergence). In some other cases, several trends could be identified within the same original theme (e.g. the theme of client relationships produced material regarding both the trend of tightening linkages of KIBS to clients’ strategies and the trend of the increasing importance of client-specific business know-how). Opposite cases occurred, too: after the interviews, some original main themes were considered more appropriate to examine as a partial phenomenon of a larger trend (e.g. geographical concentration as one manifestation of the general concentration trend).

When going through the empirical material for the first time, the aim was to identify the phenomena which recurrently came up in some form or another in the interviews, and which the interviewees considered important and expected to continue in general outline in the future, too. After this, descriptions of these

phenomena were sought in the literature analysis. Firstly, it was ensured that the phenomenon had been recognised in the literature and that it had been found to have a direction. The time when the trend had been identified for the first time, and the kinds of factors that had previously supported its development were also analysed. As actual futures research has hardly been carried out earlier in the KIBS sector, support for the trends identified in the empirical material could be obtained from literature mainly in terms of their realised or ongoing development. However, the analysis of the driving forces offered the opportunity to find support also for the continuity of the trends. The linkage of driving forces to trends is one factor that tends to promote the continuity of the current trends, i.e. to make them future trends as well.

After the first survey of the interview material and the survey of the literature analysis, the empirical data was reverted to again. At this stage, the strong prospective trends were identified in their final form. In the analysis of strong trends, the aim is often to get the future picture of the research object into a compact and crystallised form by using a limited number of the most important trends and by collecting other phenomena around them. This so-called "top ten" -method (cf. Chapter 2.2) was applied in this study in the "top eight" form. The eight strong prospective trends identified are the following:

- trend 1: increasing demand for external expert services and growing emphasis on their qualified use
- trend 2: tightening linkages of KIBS to clients' strategies
- trend 3: increasing importance of client-specific business know-how
- trend 4: broadening of the content of the service provided to the client
- trend 5: spreading of consultative working procedures
- trend 6: convergence among the KIBS sub-sectors and between KIBS and the neighbouring sectors
- trend 7: concentration tendencies
- trend 8: diversification of international activities.

Table 15 and Appendix 3 summarise the use of the interview material in the identification of the trends. Table 15 illustrates how many interviewees in the different KIBS branches brought up, in some way or another, the existence of each of the trends. It shows that all of the eight above-mentioned trends were generally recognised among the KIBS companies participating in this study. The trend describing the growth of the KIBS sector (trend 1) and the trend describing internationalisation of KIBS (trend 8) received the strongest support, but also in the cases of the least support - trends 3, 5 and 7 - a clear majority was found.<sup>91</sup> In Appendix 3 the way in which the identification of the trends has been made on the basis of the interview statements is described in more detail. Five types of statements have been differentiated: a respondent may have himself stated the existence of a trend or he may have described phenomena or

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<sup>91</sup> The qualitative nature of this study should be kept in mind when reading Table 15 and Appendix 3. The data do not allow any detailed statistical comparisons between the trends or between the different KIBS branches regarding the significance of the trends. The main purpose of the numerical presentation of the data is to demonstrate that the trends are widely recognised among KIBS. In addition, it serves the purpose of showing concretely how the trend analysis has been made.

practical operations that conform to the trend. The description of the phenomena conforming to the trends may have occurred at the level of the whole KIBS sector, at the level of the respondent's own branch or at the level of his own company.<sup>92</sup> Appendix 3 shows that even though the interview questions mainly focused towards the level of the branch of the respondent (cf. Chapter 8.2.2), the respondents themselves often described futures phenomena at the level of their own company - either by analysing how specific phenomena may influence their firm or by telling about some practical activities they had done in order to keep up with the development. A few interviewees commented about the development at the level of the whole KIBS sector and still fewer stated explicitly the existence of a trend. The level of discussion, i.e. whether more general phenomena or practical experiences and operations were emphasised, varied both by trend and by KIBS sub-sector.

Table 15: The number of interviewees in different KIBS sub-sectors supporting the existence of each of the strong prospective trends

Branch	Trend 1	Trend 2	Trend 3	Trend 4	Trend 5	Trend 6	Trend 7	Trend 8	Number of interviewed companies
Computer and related services	26	21	18	20	16	20	15	24	26
Technical services (incl. R&D)	11	11	11	11	8	8	9	13	15
Legal services	9	8	7	7	6	9	5	9	9
Accounting and auditing services	13	11	11	11	14	11	14	13	14
Advertising and marketing services	9	10	7	8	7	9	9	7	10
Management consultancy (incl recruitment and training)	11	11	9	11	11	10	10	11	13
<b>All interviewed companies</b>	<b>79</b>	<b>72</b>	<b>63</b>	<b>68</b>	<b>62</b>	<b>67</b>	<b>62</b>	<b>77</b>	<b>87</b>

After identifying the trends, the gathering of more detailed information on them from the interviewing material was started. On this basis, the continuity of the trends was first evaluated in more detail. Secondly, a more accurate picture of the nature of the trends and of the changes in their nature was formed, the focus being particularly on the new emerging features. As for the continuity of

<sup>92</sup> As this typification is reasonable only in the case of companies, the interviews of professional associations have not been included in Table 15 and Appendix 3. However, the interview results obtained from professional associations were consistent with those obtained from the KIBS companies: a clear majority of the representatives of these associations supported the trends. The opinions mostly concerned the level of the respondents' own branches, in a few cases the level of the whole KIBS sector.

the trends, interview statements reflecting the development pace of the trends and factors that promote the trends or cause inertia were sought at this point. In the case of the factors promoting the trends, views complementing the survey of the driving forces, e.g. views about the mutual interaction of the trends, were especially looked for. On the other hand, the mutual interaction of the trends can also function as a factor that decelerates the pace of their development; this, as well as other inertia factors and the possibilities of turnings and breakdowns in the trends were included in the study.

Regarding the nature of the trends, their manifestations in the various KIBS sub-sectors and the partial phenomena included in them were examined. Further, the analysis contained the consequences of the trends and the changes that had occurred or were expected to occur in the trends. The precondition for defining a phenomenon as a strong prospective trend in this study was that it was visible, in some way or another, in the whole KIBS sector. However, the forms of its occurrence could vary by sub-sector. As the trends that are here in question are strong by nature, they often contain sub-trends and partial phenomena. Development of these partial phenomena, as well as the factors enhancing or weakening them, were found to be essential for understanding the changes taking place in the trend as a whole. They are especially important for the anticipation of the future development of trends, to allow, among others, the differentiation of a change of the content from the breaking of a trend. In the examination of the changes in the trends, the literature analysis was utilised in addition to the interviewing material. The forms in which the strong prospective trends and their sub-trends had appeared in the previous development were examined. Some phenomena already have a long history and some can also be expected to continue on much the same lines. Others have been detectable for only a short while: they may mean a big change compared to previous development or they can be wholly new. However, identifying a phenomenon as a strong prospective trend or as a partial phenomenon of a trend implies that it is so clearly discernible that it can no longer be considered a weak signal.

In the following, the results of the trend analysis will be presented in two different ways: as trend-specific descriptions and as a systematised summary. The central reason for this bi-level reporting is the aim to bring up detailed and illustrative material, on one hand, and, on the other, to clearly show that the case involves strong prospective trends, which can be described according to one and the same "formula": to depict their central contents and effects, their previous forms of appearance and new features, factors promoting the continuity and strengthening of the trends and, on the other hand, the inertia factors and the break-down possibilities regarding the trends. As the interview material was collected some years ago, the summary also includes an evaluation of the extent to which the results have retained their relevance for the future up to today. This issue will be tackled again in the concluding Chapter 11 where an overall evaluation of the results of this study will be given.



In the trend-specific descriptions the structure of the analysis varies. This results above all from the fact that some trends manifest themselves in a rather similar way in the various KIBS sectors (e.g. the growing demand for KIBS and the significance of the client's know-how), whereas in other cases the consequences of a trend are different in different KIBS sectors (e.g. the concentration trend). In the former cases it has been most appropriate to carry out the description at the level of the KIBS sector as a whole according to central issues, with sector-specific interview statements serving as examples. In the latter cases, sector-specific analyses play a key role, although conclusions common to all KIBS are also drawn. Appendix 4 presents a sample of the interview statements related to the trends as direct quotations. By using an appendix instead of quotations in the text, a more comprehensive and versatile illustration of the interview material - which in the case of the trends is very abundant - has been sought for. The quotations aim to follow, as far as possible, the same order in which the text describing the individual trends is written. In addition, each quotation includes a reference to the way in which it has been used in the interpretation of the trends; a summary table of these uses has also been given. The quotations have been selected so as to illustrate both the opinions of the interviewees and the prevailing practices in the forerunner companies represented by the interviewees. Appendix 4 also aims to supplement the information given in Table 15 and in Appendix 3: it illustrates the wide range of occurrence of the trends in the various KIBS sectors.

## **9.2 The “top eight” strong prospective trends in the KIBS sector**

### **9.2.1 Increasing demand for external expert services and growing emphasis on their qualified use**

As the statistical data in Chapter 4 showed, the rapid quantitative growth of business services has been a prevailing trend for several decades now. Already the early studies discussed in Chapter 5 came to the conclusion that the most important underlying factor in the growth has been the increasing demand for expertise, based on the development of division of labour. Recent KIBS studies (Chapter 6) have corroborated the increasing need for expert services and indicated their central role in innovation activities as a further ground for this need. However, not only specialised business service companies, but the client companies themselves with their own internal activities can meet the demand for expert services. Thus, an essential question in view of the future of KIBS is the extent to which the growing demand for expertise will focus on separate service companies and to what extent on in-house services.

The interviews of this study support the results obtained in other KIBS studies, according to which specialised expert companies have certain competitive advantages compared to the in-house production of knowledge-intensive services (cf. Gallouj 2002, 261; Kox 2002, 24; Strambach 2001, 62). Above all,

the interviewees considered the versatile and up-to-date contents of expertise, which supports the high quality of service, to be such an advantage: a KIBS firm that is in contact with many clients receives plenty of influences from society and is capable of forming such an overall view that enables benchmarking. The perspective of experts operating inside one single company is inevitably narrower and they often "reinvent" things that are already in use elsewhere. Although the interviewees themselves only seldom used innovation terminology, the above description largely corresponds to the ideas presented in earlier studies of KIBS' innovativeness and of their role as facilitators of clients' innovation activities (cf. Chapter 6.5).

The interviewees estimated that the quality of expertise is a central factor that contributes to the increase of services purchased from KIBS - partly in parallel with the increase of internal services - but also at their expense. In other words, the interviewees expected outsourcing to continue. Outsourcing of expert services conducted previously in-house can be regarded as a sub-trend in the increasing use of KIBS. Like the previous studies (e.g. Elfring and Baven 1994, 43), also the interviews of this study emphasised the different nature of outsourcing of expert services compared to subcontracting in manufacturing: in the former case cost factors are less important and quality factors more decisive compared to the latter. Striving for economic efficiency plays, however, a role in the outsourcing of expert services, too. According to the interviewees, the need for improving the efficiency is in the case of expert services often connected with the situation in which client companies have abundantly "unspecified development activities" and they desire to get rid of these by means of outsourcing. Economic motives are also clearly present in the outsourcing of the expert services of the public sector, i.e. in privatisation.

The estimates by KIBS companies on the increase of the use of external services and on the continuity of the outsourcing phenomenon are presumably partly positively biased, as it is a question of the growth prospects of the respondents' own future. The plausibility of the estimates is, however, increased by the fact that the interviewees also identified inertia factors in the development, and considered the external and in-house services to form a continuously changing whole, where flows can be found to both directions. The views presented were in many parts concurrent with those research findings - obtained since the early producer service studies (cf. Chapter 5.3) - that have stressed the multiplicity of the factors influencing the balance between external and internal services. Based on the interviews made for this study, some new points can be brought up; especially interesting are the results that describe how the use of external services varies according to the sector of KIBS and to the life cycle of the client companies.

Firstly, the different development history of the various expert services, mixed with national characteristics, lies in the background of the variation by sector. Those sub-branches in the Finnish KIBS sector that have mainly been outsourced during the past few decades are advertising - except for advertising in retail trade - and, of the engineering activities, building services. Legal and

engineering services in the public sector and the accounting services of large companies are sub-sectors with a great number of in-house activities. These activities were anticipated by the interviewees to become outsourced to a significant extent in the years to come. In the case of services in the public sector, the above mentioned privatisation tendency was expected to create pressure for outsourcing. Accounting provides an interesting example of how outsourcing depends on the availability of services conforming to the clients' requirements. In Finland accounting firms have traditionally been very small, focusing on basic accounting; they have not so far been able to provide sufficiently diversified services for the financial administration of large companies. However, in recent years, the development in this sector has accelerated; the changes taking place will be discussed in more detail in later sub-chapters. The example of accounting shows that the deficiencies of KIBS' services may as such be one inertia factor in the increase of their use.

Secondly, the different KIBS sectors are connected with the core business of their client companies in different ways, and this connection, too, changes over the course of time. R&D services have traditionally been considered to be especially close to the core functions of companies and therefore difficult to outsource. Many of the interviewees in this study also thought so. However, there were engineering companies, especially in the electronics and telecommunication sectors, which had succeeded well as providers of outsourced R&D services. These companies had strong faith in the future growth of this KIBS sub-branch. On the other hand, it was found out that certain expert services which have previously been regarded as easily outsourcable are now becoming more tightly linked to the core activities of the client companies. An example is provided by legal services: according to the interviewees, bigger companies rapidly producing new product innovations, and having enough resources for acquiring their own legal staff, prefer in-house expertise in safeguarding intellectual property rights.

Besides variations according to the sector of KIBS, the services that the clients consider to be part of their core functions, or that they for other reasons want to retain in-house, vary from one company to another. They also vary within one and the same company from one point of time to another. It has been argued that at the initial stage of their life cycle companies are under pressure to purchase many services from external providers, because the material and knowledge resources for producing services in-house are scarce at the beginning. Contrary to that, the interviewees of this study pointed out the significance of "doing it yourself" as a prerequisite for successful outsourcing; this opinion was linked with the observation of the importance of skilled service purchasing that many of the interviewees emphasised (cf. below). Thus outsourcing should, if possible, be connected with a later phase in the company's life history, when the company's own experiences serve as the basis for an accurate definition of its service needs and evaluation of the quality of service.<sup>93</sup>

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<sup>93</sup> Like other companies, also KIBS themselves purchase services from other KIBS. The view mentioned was presented by IT service companies in particular. Some of them had experienced failures when they

The central driving forces in today's society support the increased use of external expert services and the continuity of outsourcing. Both the development of ICT and networking practices increase the possibilities for the successful use of purchased services. The interviewees in this study emphasised particularly the significance of intranet/extranet systems as the infrastructure for the relationships between clients and service providers. These systems offer possibilities of an entirely new level for managing the whole formed by the company's internal and external activities. According to the interviewees, observing this aspect in the potential provided by ICT, as well as the utilisation of ICT for this purpose, are still in many companies at rather an early stage. Taken as a whole, know-how in managing open organisational structures and multiple cooperation relations is, however, increasing along with the generalisation of networks. This means that the external KIBS activities, too, can be successfully linked to the company's own functions.

Skilfulness of client companies in the purchase and use of expert services has a central effect on the success of the service, continuation of cooperation and thereby on the future development of KIBS. The interviewees in this study also emphasised that the improvement of the purchasing know-how of clients functions as a positive coercive force for the further development of KIBS' own expertise (cf. the significance of demanding clients for knowledge-intensive services in Elfring and Baven 1994, 43). Despite positive development features, there are still deficiencies in this know-how. Part of the clients considers the statutory services, such as accounting, as constraints. In addition, some services, like advertising, may be seen as "a necessary evil". A competent recipient party that can evaluate the need for and the quality of services is also often lacking on the clients' side. In these cases it is difficult to form an interactive relationship between the service provider and the client, which is essential for an innovative service process (cf. Miles 1999a, 69-70). Some of the KIBS companies interviewed had made active efforts to improve the situation, i.e. to increase the purchasing know-how of clients by telling them what kinds of services are available, how the services can appropriately be made use of in different situations, and what kind of a quality standard can be expected. On the basis of the interviews, the need for *training clients in the use of KIBS* can be anticipated to grow in the future.

The present study also brought up a growing demand for *planning services for outsourcing*. Still in the 1980s and at the beginning of the 1990s, researchers of producer services found that the client companies usually decide whether to produce services in-house or outsourced case by case - even arbitrarily (MacPherson 1988, 966; Wood 1986, 40). The use of planning services may indicate that the situation is changing. In quantitative terms, planning services for outsourcing were not yet significant in Finland at the time of the interviews with respect to either demand or supply. Together with the training services for the clients, the planning of outsourcing does, however, represent an interesting

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had purchased external services soon after the establishment of the company, and some services had been taken back to be provided in-house.

new service type: a kind of “meta service” contributing to the qualified use of KIBS. In Finland the multi-sectoral consultancy firms, and IT houses providing management consultancy services have been the first KIBS companies selling planning services for outsourcing.

### **9.2.2 Tightening linkages of KIBS to clients’ strategies**

The strategic significance of KIBS for productivity and innovation is one of the central arguments of studies carried out on these services, and the term “strategic business services” has sometimes been used synonymously with KIBS, as stated in Chapter 3.2. Quite a different question is the extent to which the client companies have in practice integrated the acquisition of these services into their own strategies, and the extent to which KIBS themselves have thought they are serving the basic strategy of their clients. In the earlier studies of producer services, the growth of these services was seen to spring from the increasing specialisation, on the one hand, and from the necessity to integrate specialised functions, on the other. Thus, besides expert services linked with various stages of the client’s production process, there have already long been services that have been connected with the general management functions of clients. (Martinelli 1991a, 22-24) The management functions have also included the formulation of strategies for companies, an activity in which a part of management consultants has specialised since the end of the 1950s. As stated at the end of the previous sub-chapter, the acquisition of services more arbitrarily, has, however, been typical of many other business services.

The interviews for this study indicate that, at the same time as more careful planning in service purchase is gaining ground, the strategy connection of services is also becoming tighter. Besides the actual management services, also the services directed to the different stages of the production process are being closely linked to the client’s basic strategy. On the basis of the interviews, the tightening of the strategy linkages of KIBS can be seen in the activities of both KIBS themselves and their clients:

- KIBS companies themselves - in an increasing number of sub-sectors - aim to consider their services from the perspective of the client’s basic strategy and to support this strategy.
- Clients have formulated - on the basis of their general strategy - specific strategies which are also used in the purchase of business services (competencies strategy, IT strategy, brand strategy, and design management, among others).

Linking a service to the client’s basic strategy means in practice that KIBS companies do not only provide individual expert solutions for certain specific problems, but aim to examine how the service supports the client’s entire business and helps to create new business activity. Of the companies interviewed, particularly IT companies, legal companies and accounting firms

stressed the strategy linkage of their services in this sense. In connection with the reforms of IT, the need for the strategy linkage of services already arises from the fact that these reforms are often highly expensive. Although the application of strategic thinking is not simple even in this case, it is all the more challenging in the cases of legal and accounting services, where it often means great changes to the prevailing practices of both KIBS and their clients. In legal services the question is above all about the transfer of focus from solving problems already emerged over to planned prevention of problems, for instance in product protection and in contractual matters between companies. In accounting services, the adoption of a strategic perspective means that the new opportunities provided by information technology are used effectively. The advancements of IT enable considerable improvement in the companies' internal accounting and reporting systems, due to which financial administration has the potential to become a management tool at a wholly new level.

Advanced clients base their acquisition of important services more and more often on a specific strategy drawn up for the service concerned. These specific strategies are derived from the company's basic strategy and aimed at supporting it. Personnel strategies can be mentioned as an example of sub-sectoral strategies that have already been in use for quite long. These have in recent years often turned into competence-based analyses of the company's human resources, which form the starting point, when services are purchased from personnel training firms and labour recruitment companies. Other specific strategies include IT strategies that companies have formulated for the full exploitation of the opportunities provided by the development of information technology, especially the Internet. Furthermore, the growing importance of brand-related strategies was emphasised in the interviews. Client companies' striving for an overall management of their outward image has meant that advertising and communications, which were previously two separate service branches, have formed a new, larger whole: marketing communications. The interviewees expected development to require all the more consistent brand presence in the entire value chain, starting from design and ending in the act of purchase. The messages that the client company wants to communicate on itself in its logos must also be reflected in advertisements, planning of packaging, and shop marketing. According to the experience of the interviewees, the application of strategic thinking to industrial design - design management - is not yet very widespread among clients, but the need for it will clearly increase in the future (cf. Wilenius 2004, 104).

The tightening linkages of KIBS to the strategies of clients increase the significance of KIBS in the eyes of their clients, and the expectations placed on them will rise. Close cooperation between the client and the external expert in service provision - the co-production of service - is one of the central findings of KIBS research (e.g. Miles and Boden 2000, 261-262). The generalisation and tightening of the strategy linkages of KIBS mean that, besides individual services, co-production concerns more and more the client's strategy as well. The relationships between KIBS and their clients are changing towards deeper and more permanent relationships of strategic partnership (cf. Rothery and

Robertson 1995, 7). This considerably reinforces the position of KIBS, but at the same time raises the requirements as regards the content of the service. In addition to precise performance of the assignment in hand, a service company is expected to possess a broad, up-to-date and anticipatory view of its own sector and to apply this view to the client's situation. For instance, personnel-recruiting companies stated in the interviews that the clients expect them to be capable of offering information on the basic trends of skills needs; company-specific skills requirements are then fitted into this framework. Companies recruiting business leaders (the so-called "head hunters") go even deeper into their clients' strategies, acting, besides the recruitment function, inside the company as the management's sparring partners.

A client company often does not exactly know what general issues are connected with the assignment, but presumes that the service firm brings up the relevant issues on its own initiative. In fact, own initiative is becoming a more and more central factor illustrating the high quality of an expert service. The interviews indicated that in the case of new issues the role of KIBS might be even more active. They are often "alerting" their clients to see such important changes taking place in the business environment that the clients have neglected or in some cases are even reluctant to take into account. For instance, legal firms considered information dissemination on intellectual property rights important, especially among small-scale software producers. IT service providers were worried about the superficiality of the information on consumer behaviour and on human behaviour more generally, too, in connection with development of information technologies. In the community planning sector, a major future challenge was regarded to be the issue of how the social environment is conditioned by the physical environment, e.g. how building solutions support the new kinds of learning models developing along with the information society.

The more the activities of KIBS resemble strategic partnership, the more the meaning of trust between the client company and the service firm grows. The interviewees stressed the mutuality of the relationship of confidence: besides the fact that service companies can get to the very core of the client's business, their own business is vulnerable, because to some extent they must reveal the knowledge they possess in order to build up a client relationship. The confidential nature of strategic knowledge is a central inertia factor related to the strong prospective trend discussed here. It tends to reduce the use of external services or to limit their use to individual assignments. In order to diminish the problem, different KIBS sectors have developed various procedures and practices aimed at increasing the client's trust. In legal services and in management consultancy, activities are based on written rules of ethics (cf. Aharoni 1993, 10). In advertising, a general practice in the case of big clients is that an expert company does not serve the competitor of the client. Focusing on few clients, and various interim forms of external and internal services also serve as solutions for confidentiality issues. One interim form of an outsourced and an in-house service are experts that work on the client's premises (cf. Miles 1999a, 70). According to the present study, big consultancy companies apply

regularly this practice in longer projects. A procedure, in which the control clearly remains with the client, is the leasing of experts to the client. Leasing practices, which were characterised in one interview as “outsourcing inside the firm”, have become all the more common in the IT sector.

The tightening linkages of KIBS to clients’ strategies reflect the generalisation of networking practices and those new business models that aim at a better overall management of the value chain. When examining networking and new business models as a driving force at the societal level in Chapter 7.2, many development features were detected that are similar to the ones brought up by this study in the case of KIBS. Along with the networking practices, the significance of deep partner-type relationships has increased, not only between KIBS and their clients, but in business life in general.

### **9.2.3 Increasing importance of client-specific business know-how**

The basis for the service of KIBS companies is the knowledge they have of their own special field or profession. To some extent this knowledge includes universally applicable elements, such as facts about regulations and technology. However, the core of KIBS’ expertise lies in the application of knowledge to the client’s situation. To make this possible, knowing one’s own profession is not enough - the know-how must also extend to the client’s business. Along with the tightening of the linkages of KIBS to the strategies of their client companies, understanding the business of the clients becomes more and more important. The development is, however, challenging, as it is difficult to understand deeply the business of clients if the clientele is wide and composed of different kinds of companies. Thus, specialisation in a more limited group of clients is becoming common, and there are two main ways to do this: either specialisation according to the client industry or specialisation according to some other feature of clients.

In the KIBS sector, there are sub-sectors whose way of operating has always heavily leaned on specialisation according to the client’s business. Such sub-sectors are above all services closely linked with industrial processes: the engineering services and process consultancy for various manufacturing industries. It was already noted in some previous studies that the demand of the clients for sector-specific understanding has become all the more common in engineering services (Elfring and Baven 1994, 47). The interviews of this study showed that specialisation according to the client’s sector is spreading to many other KIBS sectors, too, and in these it is seen as both a new opportunity and a challenge. Of the companies that participated in the study, especially the big IT service companies and big multi-sectoral consultancy firms have placed in-depth expertise in the client industries as one of their prime goals. Due to their big size, these companies can acquire and maintain know-how of several client industries by means of work allocation among their service personnel.



Specialisation can also be carried out by focusing on a number of clients that are connected with one another by some feature other than their line of business. A usual way is specialisation in clients of a certain size. Here one end of the scale consists of large listed companies and the other end of small entrepreneurs. Specialisation according to the size of the client follows, to some extent, the size of the KIBS companies themselves, and is linked with the polarisation of the KIBS field, which will be dealt in the connection of the trend of concentration in sub-chapter 9.2.7. Polarisation, on the other hand, provides an interesting new possibility for specialisation: some of the interviewees had based their business idea on filling in the “vacuum” in the middle market. They believed that there is unused business potential in this particular area. Besides specialisation according to the size of the client, the interviews also brought up other ways of specialisation by company group. These features may be very specific; for example some interviewed KIBS were specialised in the financial advisory services for client companies undergoing a transition in ownership from one generation to the next. The interviews also indicated that KIBS companies are very actively looking for such new features in their client businesses that would allow specialisation. Besides specialisation by company group, the starting point can also be a few separate clients that are sufficiently important but that have no single feature in common. In this study, such specialisation was typical of firms engaged in industrial design.

The establishment of KIBS companies as originally independent firms on the one hand, and as spin-offs from the in-house departments of client companies, on the other hand, is intertwined with the specialisation development, and partly makes it more complex. The latter case, linked with outsourcing, is in a way a phenomenon opposite to specialisation: the intention is to provide services for a wider circle of clients. Especially in earlier days, the detachment of a service firm from the parent company often took place gradually, so that after outsourcing the service firm served first mainly its parent company and only then extended its activities over to other companies. On the other hand, if a KIBS company that has been established on the basis of earlier in-house services aims at client-specific specialisation, it has often more ready-made connections to certain firms (to the parent company and its cooperation partners), and thereby to a certain client sector, than a service company that starts “from scratch”.

The generalisation of the strategic way of thinking described in the previous sub-chapter, and the broader societal driving forces behind it are taking the development of KIBS to a direction where specialisation happens according to the clients, in addition to KIBS’ own professional field. But this study also showed that there are many obstacles in the way of the development. Being confined to a certain sector exposes the service company to the risks inherent in this sector, to economic fluctuation, among others. In-depth expertise in a certain client sector also requires plenty of resources, and if risks are to be avoided, specialisation would be needed in several sectors. Thus in many KIBS branches sector-specific specialisation is possible mainly for bigger companies. If smaller service firms specialise according to a client, the specialisation is

usually carried out according to some more restricted criterion, which allows a service of the niche type. All in all, the interviews indicated that in the Finnish KIBS sector client-specific specialisation is at quite an initial stage. Most often the specific needs of the client are sought to be taken into account by combining analysis of the client's situation case by case with the service company's own professional expertise.

One element in understanding the client's business is knowing the client's customers. In Chapter 7.2 it was noted that client-orientedness is an important part of those new business models that affect KIBS as a driving force on the level of the whole economy. As the client companies of KIBS base their own business more and more tightly on the needs of their customers, KIBS must find the means to support this goal. In the interviews, the role of the end-user was considered important in principle by many different KIBS sectors, but in practice the company's own service chain was analysed all the way to the end-user in few sectors only. In addition, the KIBS sectors differ from one another in how direct linkages they have to the client's customers. An example of a sector where activities in a large part are directly addressed to the client's customers, is marketing communications. Within this sector, market surveys have traditionally been the form of activity that has most direct contacts with the end-users. Nowadays, a dynamically growing end-user-oriented sub-sector is client bulletins, the growth of which results from the continuously generalising tendency to bind clients to a permanent relationship through regular customer schemes. Regarding the whole sector of marketing communications, the aim to cover the entire value chain means that the advertising and marketing companies have to take greater responsibility than before for the success of the act of purchase itself.

As regards other KIBS sub-branches, the IT enabled developments in accounting bring about, besides the effects mentioned in the former sub-chapters, the possibility of taking into account the end-users in a new way. Along with the development of data systems, it is possible to produce calculations according to specific client groups; these calculations will serve as the basis for focusing activities in the future. This kind of "anticipatory accounting" is one of the expert services that can, when realised, very concretely support companies in the application of life cycle thinking in their client contacts. According to the interviews of the study in hand, virtual accounting was, however, not yet at this level; it was centred on the general development of "rolling budgeting" together with a warning system about the possible problems linked with the economic situation of the client company. The group-specific calculations of profitability had mainly been made by product group without a systematic futures perspective.

The issues linked with the actual interaction of KIBS firms and end-users were brought up in the interviews in the first place by architectural and engineering firms, and some contradictory development features could be found in this respect. On the one hand, society develops new measures for the promotion of mapping end-users' opinions (e.g. the public inquiry procedures required by the

construction law). On the other hand, along with the new rapidly expanding forms of contracting (turnkey contracting and project management contracting), new intermediaries have emerged between planners and orderers. Also the so-called anonymous office buildings, in the case of which the planners have no information about the future users, are becoming general.

#### **9.2.4 Broadening of the content of the service provided to the client**

The generalisation of service packages was already noted in the 1980s in studies on producer services. An important background factor behind the development at that stage was internationalisation: large multinational clients preferred complete packages instead of separate contracts for each service. (Howells and Green 1986, 135) Later on the improved efficiency of information technology and the generalisation of networking practices have also played a key role in the development of service combinations. At the same time as internationalisation has created demand for more comprehensive services, advances in information technology and the emergence of networks of service companies have increased the possibilities of supplying such services. In recent years the development in KIBS, as in other sectors, has increasingly gone towards integrated solutions, which still more efficiently than packages aim to meet the more ultimate service needs that are in the background of the demand for individual services (cf. Howells 2000, 15-16). The generalisation of integrated service solutions goes in KIBS hand in hand with the tightening strategy linkages and with the emphasis on client-specific know-how. The success of service solutions requires that KIBS understand the core of their clients' business and the goals to which the solutions relate.

Many of the companies interviewed for this study had noted the clients' desire for a more comprehensive service, and the efforts to fulfil this desire were common. As the basic mode of operation, the packaging of own services or participation in the service packages provided jointly by several companies were, however, in use in a few KIBS companies only, primarily in major multisectoral consultancy firms. Nevertheless, the services of many other KIBS sectors are developing to this direction. One example is provided by the advanced accounting firms. Besides book-keeping, these firms offer electronic filing services, reports on the development of the clients' business, overviews of the central economic trends, surveys on the amendments to legislation, etc. From these, combinations according to the desire of the client are formed. In accounting, like in many other sectors, service packages have become possible only after information technology achieved its current stage.

Software and systems play an important role also in service solutions that aim to identify the more fundamental needs of the clients and answer them in an integrated way. One example of these kinds of integrated solutions brought up in the interviews was an overall steering and planning system for marketing,

which combines market studies, sales control, customer feedback and planning of marketing. All in all, integrated solutions were, however, even more at the initial stage in the KIBS companies interviewed than the service packages. The development prospects for service solutions will be returned to in Chapter 10, where innovations covering entire service systems and innovation combinations containing both technical and social aspects are discussed as emerging features in KIBS' innovation activities.

Packaging of services and broad service solutions usually call for commodification at least to some degree. Modularisation is also gradually penetrating into the KIBS sector. It means that the service package provided for the client is collected for the most part from distinct, varying "pieces". Along with the transfer from service packages towards service solutions, tailoring of commodified and modularised services to the client's situation is becoming increasingly important.

When performing the interviews for this study, the Finnish KIBS sector was undergoing a phase in which commodification was quite commonly discussed. Even many of those companies that had not participated in larger service packages had, however, one or more commodified services at their disposal. Commodification of services was found both in new and in traditional KIBS sectors. Of the new sectors, the services of digital content production can be mentioned as an example, among them entertainment concepts and teaching contents. In the more traditional sectors, commodified services have already long been used in management consultancy: different management schools have their own business development programmes. In Finland the public development organisations have supported the commodification of consultancy services, especially services intended for the clients in the SME sector. Commodification has been made, for example, according to the various stages of the company's life cycle. The firms engaged in marketing communications, too, saw potential for commodification. As an example the interviewees mentioned a profiling programme intended for clarifying the objectives of the company's image or brand building. The legal companies that participated in the study considered the discussion of commodification especially topical. In addition to simple service products, such as the formalities regarding the establishment of an enterprise, there are commodified services in use in business law for example for the follow-up of trademarks. Of future possibilities, the commodification of the inspections related to competition law and the commodification of the background studies needed in corporate acquisitions were mentioned as examples.

Some legal companies thought it also possible to move from individual commodified services over to collecting the service mainly or fully from modules that vary from one client to another. However, among the companies interviewed for this study, modularisation was in actual use only in the software sector and in some engineering companies. The result is quite natural: the modularisation thinking originates from manufacturing, and thus it is most easily applicable to services that contain industrial products. On the other hand, it was

in connection with the interviews of the software firms that the need for combining new kinds of tailoring with modularisation came up. Along with the development of information technology, a situation emerges where clients already have large IT systems. The renovation and complementation of these existing systems form a big part of the service of the software firms and require client-specific adaptation of products. The question here is not about conventional tailoring, in which activities are started all over again in the case of each individual client and which therefore has often been criticised for its unprofitableness. The juxtaposition of "modern" product business and the "old-fashioned" client projects in software is losing its meaning in parallel with the development of modularisation.

In expert sectors, the packaging of services and comprehensive service solutions are also connected with problems that tend to slow down their generalisation. The interviewees especially mentioned the risk of excessive simplification involved in commodification. Most client relationships are characterised by specific features and specific issues that must be taken into account, and all of these cannot necessarily be covered even with varying service modules. The scope and nature of the client-specific questions determine whether commodification can yield benefit that corresponds to the inputs made. Besides the commodified services themselves, another important question is which channels to use in conveying a service. Commodification provides the possibility of extending self-service, and today especially the possibility of conveying services via the Internet. The companies interviewed warned, however, about exaggerating these possibilities: many such features are connected with the nature of expert activities that can only be channelled through a human actor. Except for very simple situations, advisory services offered via the web include considerable room for error.

Service packages and integrated solutions require adequate resources of the service provider. Therefore the development towards more comprehensive service contents tends to increase the role of big multisectoral, and most often also multinational, KIBS companies. As stated earlier, the networking practices have, however, brought versatile service concepts within the reach of smaller firms, too. The development has had many important effects, which are reflected for example in the convergence of the KIBS branches and in the concentration and polarisation of the sector. These development trends will be discussed in more detail in the later sub-chapters.

### **9.2.5 Spreading of consultative working procedures**

As pointed out in the theoretical part of this study, the concept of knowledge-intensity has been introduced to emphasise that the service provided by KIBS does not consist of detached advice, but is based on interactive participation in the processes of the clients. The consultative way of working is thus already

included in the definition of KIBS. The term "consultant" is also widely used in practice, not only for actual management consultants, but also for experts working in other KIBS sub-sectors. The interviews of this study confirm that orientation, which is not based on linear transfer of information but includes more catalytic approaches, plays a central role among KIBS. A deep, interactive way of action is not, however, self-evident in the KIBS sector, but a trend that advances side by side the tightening strategy connections and integrated service solutions. In various KIBS sub-sectors and in different types of companies, the development has important special features, which are also affected by the nature of the clientele. In addition, a significant phenomenon is the intermingling of the consultative operating methods, which are spreading in all KIBS, with the actual management consultancy: the KIBS of the other sectors are penetrating more and more often into the consultancy business.

On the basis of this study, KIBS companies can be divided into four groups according to the significance of the role of consultancy in their activities and the kind of consultancy they provide:

- companies that mainly perform individual service assignments and do not usually intervene in the related processes of the client or provide more general advisory services
- companies whose services are fully or partly of the consultancy type, but whose core business is in some other sector than management consultancy
- multi-sectoral consultancy firms
- companies engaged in management consultancy.

Expert service companies that in their activities have mainly focused on individual assignments are small nearly without exception, and they also serve small-scale clients. The scarceness of resources of both the service provider and the client most often lies in the background of this way of working. As the joint learning process with the client occupies a secondary position, the individual service providers belonging to this group are not, strictly speaking, KIBS, even if they operate in KIBS sectors. However, their lifeblood in the future will be changing over to more consultative procedures, i.e. to a more in-depth facilitation of the client's activities. On the company level, these "potential KIBS" (cf. Tomlinson 2001, 99) can be found in all the KIBS sub-sectors. In some traditional expert sectors, activities have so far been based almost entirely on restricted assignments. Accounting is such a sector. It is also an example of a branch where the pressure for increasing the consultative way of action is hard, and the benefits to be gained from it are great; on the other hand, the inertia factors are also considerable. Along with the development of information technology, tasks related to recording numerical data will essentially decrease, which will not only enable, but also compel the finding of new tasks in order to safeguard the future of the companies in this sector. The advice and consultancy provided by accounting firms are important because accounting is often the only external expert service that small-scale clients use. On the other hand, adopting the consultative operating method means a very great change in the content of the expertise in the accounting sector. The know-how it requires

is partly even contrary to the traditional skills requirements in this sector, which has emphasised first and foremost accuracy.

In nearly all KIBS sub-sectors, there are also companies whose operating method is consultative, but the contents of the consultancy are based on expertise in a sector other than management consultancy. These companies represent all sizes. Communications consultants, legal consultants, technical consultants and IT consultants can be mentioned as examples. In all of these groups the deepening of the consultative approach is an important challenge. It is also often these particular groups that are extending their activities towards management consultancy. The strategy connection of services stimulates this development, and it manifests itself in three ways: firstly, advice related to the more general business issues is added to the service repertoire based on the company's original sector. These advisory services may play a very central role in the company's activities. For example, one legal firm interviewed described the change in its activities by saying that instead of juridical advice it nowadays gives "juridically anchored general advice". Another possibility is that management consultancy is added to the consultancy based on the company's original expert sector as a separate service. This multi-sectoral consultancy will be discussed in more detail in the next paragraph. The third phenomenon is that a company previously engaged in some other KIBS sector fully moves over to management consultancy. The fact that management consultancy is a multiple field providing other KIBS with such orientation alternatives that are close to one's earlier expertise makes the changeover natural. In the interviews, it was noted that becoming a consultant was common especially in the case of engineers, for whom quality consultancy, for example, offers this kind of a natural alternative. Besides the growing need for consultancy, the transfer of engineers into consultancy is also motivated by the low sensitiveness to economic fluctuations in consultancy, compared to engineering services (cf. Chapter 5.4). The effects of a recession can be seen in consultancy mainly as changes in the work content, not as a reduction in the need for labour.

Connecting management consultancy as an additional service with the activities of companies that operate in other business service sectors is an old practice. It was stated in Chapter 4.1 that the other main branch in the history of consultancy - besides the Tayloristic work-study - is consultancy by auditing firms, which began at the beginning of the last century. Multi-sectoral consultancy covering several KIBS branches started in the 1980s along with the development of information technology. At this stage, too, large international auditing companies were the engines of development: they became engaged in IT consultancy, besides management consultancy. In recent years multi-sectoral consultancy has been constantly changing: the number of actors has increased, new combinations of operations have emerged and some combinations have been broken up. At the time of the interviews, the combination of auditing and management consultancy was already drifting into an ethical crisis: auditing the client's operations impartially is difficult for a service firm that has participated in building up these operations. By the time of writing the report, the big global auditing firms have mainly given up their

management consultancy activities, but at the same time have looked for new business opportunities by expanding the range of their legal advisory services. Development has also signified notable tightening of the cooperation between auditing and the IT sector. Auditing firms have been merged with big IT houses, and the detached consultancy units have been integrated into these. Combining IT services and management consultancy has not proved to be problematic. In fact, large IT houses have become a new active group developing multi-sectoral consultancy.

The development tracks described above in the other KIBS sectors create a new kind of competitive environment for companies operating in the sub-sector of the actual management consultancy. Experts leaving the other KIBS sectors to become consultants increase the number of new companies in this sector, while there are also many companies that put an end to their operations due to the ever-tightening competition (cf. Kyrö 1999, 23). The companies interviewed for this study estimated that the firms operating in the field of management consultancy can survive the competition for example by specialising in certain client industries, or by strongly leaning on some consultancy school and its theoretical and methodological tools. The penetration of management consultants themselves to other expert sectors is also one possibility. Excluding the international multi-sectoral consultants, most companies in the Finnish consultancy sector are, however, very small (Kyrö 1999, 12), which restricts this possibility. The interviews brought up some examples of the diversification of the operations of small firms originally engaged in consultancy; in these cases communications and accounting services had been linked to consultancy.

The interviews showed that KIBS companies have recognised the importance of the consultative approach and aim to develop their activities in this direction - regardless of how their previous operations have been connected with consultancy. The above examples indicate that, besides the need of the client, this orientation is motivated by the new potential offered by the development of information technology and the necessities of maintaining a business. When the work phases related to the technical performance of assignments become faster in KIBS companies - in other sectors than accounting, too - companies have more possibilities for focusing on the interpretation of information and on deeper cooperation with the client (cf. Chapter 7.1). On the other hand, the decrease in operational work also compels KIBS to search for new business areas. This is connected with the risk of spreading of such operating methods that do not genuinely increase the consultative approach in work. It was stated in the interviews that all kinds of activities that include even minimal advice are easily called consultancy<sup>94</sup>; consultancy is even used as a title under which a service can be better sold. There are also problems on the clients' side in purchasing consultancy services. With small-scale clients the problems are

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<sup>94</sup> It is important to notice that a deep presence in the client's process is not self-evident in the actual consultancy business either. As in KIBS in general, a development process is going on in consultancy, where, besides and instead of the role of an outside adviser, firms are assuming more and more service practices that facilitate and catalyse clients' activities (cf. Bessant and Rush 1995, 101-102).



above all related to the scarceness of resources and general deficiencies in the know-how required in purchasing business services. The fact that planned acquisition of business services is not yet far advanced can also be seen in the consultancy purchases of the larger client companies: ordering a service in these companies is often assigned to a certain special department, leaving the department's own expertise to determine which kind of a consultant is selected (IT consultant, communications consultant, personnel consultant, etc.).

### **9.2.6 Convergence among the KIBS sub-sectors and between KIBS and the neighbouring sectors**

The penetration of companies representing different fields of expertise into management consultancy, as well as the related multi-sectoral consultancy, are one form of the more general convergence of the KIBS sectors. As the adoption of the tasks of management consultancy by other KIBS is closely linked to the generalisation of consultative working procedures, it was considered better to examine this convergence phenomenon in connection with the trend above. In other parts, the entanglement of activities that have their origins in two or more different KIBS industries, as well as the general characteristics of the trend of convergence, are analysed in this sub-chapter. The study shows that, besides management consultancy, IT services in particular are connected with many other KIBS sectors: engineering services, marketing communications services and financial administration services. Furthermore, sectoral boundaries are becoming blurred, not only inside the KIBS sector, but also between KIBS and some other service industries. The close cooperation of legal and accounting firms with banks was already noticed at the end of the 1970s (Stanback 1979, 86-87); this cooperation has in recent years gained new forms and is becoming increasingly closer. Real estate services are another main industry to which the KIBS sector is more and more closely tied.

To some extent the same reasons that were dealt with above in connection with convergence towards consultancy lie in the background of the general blurring of the sectoral boundaries. Such reasons are the broadening of the service contents and competitive factors. The generalising service packages were already considered to be a central factor behind the convergence at the end of the 1980s, when attention was for the first time paid to the fact that expert companies increasingly extend their operations beyond their original sectors to many different directions (Marshall 1985, 357; Ochel and Wegner 1987, 116). In addition to service packages, some individual expert services have always required combining the expertise of several branches; this situation, too, is becoming more common and important. For instance, personnel recruitment services call for cooperation with advertising, and the significance of this cooperation is growing along with the increased use of recruitment notices,

besides their original function, for making the company and its image widely known.<sup>95</sup>

During the past few years, the most important factor causing convergence has, however, been the development of information technology. The question is partly about the present development phase of the IT sector, which increases convergence in two different ways. Firstly, the structuration of IT services as an industry is still going on, which means that the operational entities and sub-sectors inside the industry are still taking shape. Due to this, they are linked to the other KIBS sectors in a way that will not necessarily remain permanent in all respects. Secondly, applying new technology requires a lot of advice, and actors in many different sectors have noted this market opportunity. This need will not necessarily be permanent in its current scope, either, and the service combinations that it has created have already at present proved problematic in some parts. When carrying out the interviews for this study, the so-called new media companies established around Internet services were in a strong growth phase and believed in the perseverance of the growth. These companies combined IT services focusing on technology, marketing and communications services for content production, and management consultancy related to the strategic use of the Internet. When writing the research report, a considerable part of the companies that had based their activities on this operational concept have had to terminate their business or to merge with other firms.

Besides the factors related to the internal structuration of the IT sector and to the great need for advice caused by the rapid development, convergence is increased by the presence of information technology in the processes of other sectors. Important changes in the KIBS sector are observable due to this. First, the role of information technology is very substantial in the production of certain services, and then the IT sector may become a provider of these services side by side the traditional actors. For instance, the automatization of accounting mentioned above has allowed the setting up of "virtual accounting offices", which instead of an external accounting service provide their client companies with accounting as an ASP service (Application Service Provider). Secondly, along with the development of information technology, contacts between other sectors are becoming tighter. The closer contacts between R&D services, industrial design and engineering services were especially brought up in the interviews for this study, i.e. the links between design, product development and the putting of products into production. Computer modelling has made it possible for design to take into account on a wholly new level issues related to installability and usability of products, as well as their maintenance during their entire life cycle. The tightened interaction in the research - design - manufacture -interface due to the development of computer modelling has been noticed in other studies, too (Howells 1999a, 23). As mentioned earlier, in industrial design

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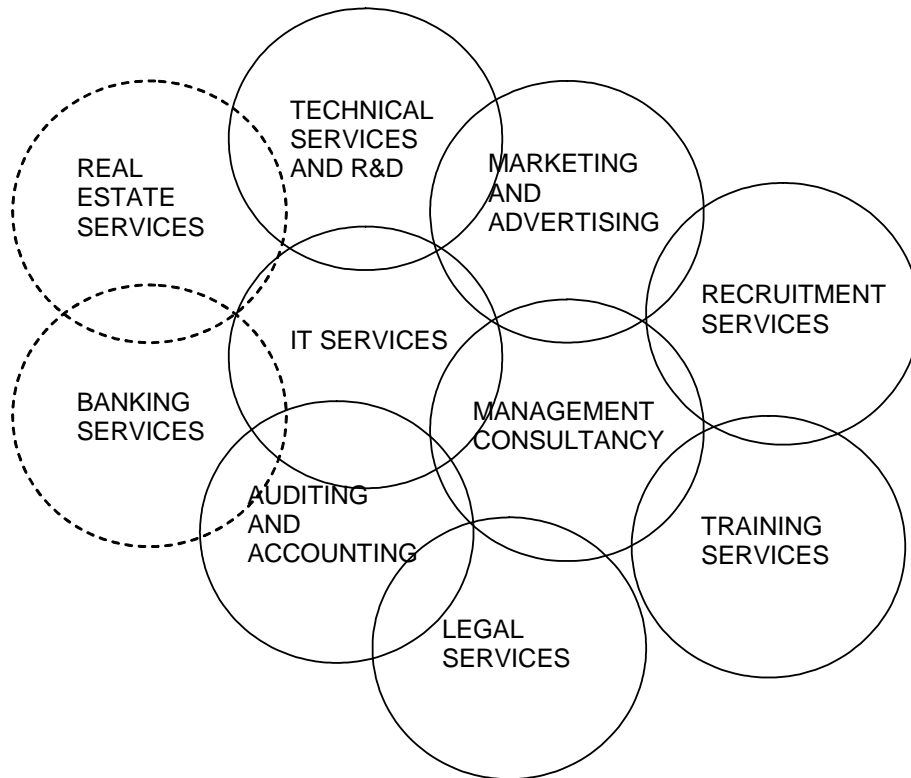
<sup>95</sup> As recruitment is one of the functions aimed at ensuring the human resources of client companies, the recruitment business is also closely connected with some parts of consultancy: the development of working communities and personnel training linked with it. There are also companies that function in a particular field and in addition to their specialism carry on personnel recruitment for their own field, or have moved totally to recruitment business. According to this study, such companies have been established e.g. in the IT sector.

convergence is also taking place towards marketing, along with the generalisation of the brands encompassing the entire value chain. This means that industrial design is becoming a more and more important bridge between engineering services and marketing.

Information technology plays a key role, not only in the internal convergence of the KIBS sector, but also in the blurring of the boundaries between the KIBS sector and the other neighbouring main industries. The banking sector, which has high computer capacity, is expected to become a more significant player in accounting services, as accounting and other similar services are more and more tended to electronically. The boundary between the financing sector and KIBS is becoming blurred in many other ways, too: for example in business advisory services, the scope of the advice given by banks and capital investors is clearly expanding from finance-related issues into broader business issues. The capital investors in particular often occupy a very central position in directing the client's business. Both the financing sector and KIBS also have increasing linkages to the main sector of real estate services: to facility management and to property management. Life cycle thinking, to the development of which IT has greatly contributed, creates interaction between engineering services and facility management services. In property management the cooperation partners are the actual real estate business, the insurance sector and house manager services. The last mentioned services are often provided by KIBS; for instance, legal offices and accounting firms. A summary of the convergence phenomena in the KIBS sector discovered on the basis of this study is presented in Figure 8 on the next page.

Recently, the concept of creative industries, closely linked with the concepts of cultural production and the experience economy, has been brought to the fore (Wilenius 2004). The concepts refer broadly to activities related to arts, culture and mass media; exact industrial classes are not usually identified in this context. Creative industries have been argued to be one of the most central growth areas in the future development of the networking economy. Some KIBS-sub-sectors - architectural, marketing, and industrial design services - are counted among these industries. The blurring of the boundaries between KIBS and cultural production manifests itself also in other ways, and here again information technology plays a central role. The new ways to produce, store and distribute cultural products in digital form have led to the emergence of the so-called contents production industry. To a great part this industry serves the cultural needs of end-users, but in some parts it is bound up with the activities of KIBS (e.g. in the communications services). There is also growing interest to "transfer" the creativity which manifests itself in arts and culture into the more technically oriented design and planning. (cf. *ibid.* 57, 80, 95 and 189)

Figure 8: Convergence among the KIBS sub-sectors and between KIBS and the neighbouring sectors



Considering the restrictions that have been made in setting up the research questions and in the selection of the interview themes based on them, it has been possible to examine convergence mainly within the service sectors in this connection. The important issue of blurring of the boundary lines between services and manufacturing, discussed in Chapter 6.3, was, however, brought up in the interviews, especially in the IT sector. When reviewing the history of IT (Chapter 4.1), it was already mentioned that equipment manufacturers are also one central group of service providers in the sector. While providing mobile technology and the related services teleoperators and IT companies increasingly penetrate into each others' areas. The embedded software inside electro-technical equipment connects the IT sector closely to the electricity and electronics industry. Even inside the software sector, manufacturing and services are intertwined. If the production of packaged software is interpreted as an industrial activity, the line can partly be drawn at the company level: companies that only produce software products can be counted among manufacturing, and companies that only provide software services can be counted among service sectors. However, a big part of the companies in this sector do both. In engineering services, too, there are firms that both develop and produce products. In the Finnish engineering service sector, these companies, which operate according to the "turnkey" principle, represent, however, a minority.

Convergence has been examined above from the standpoint of which functions are connecting with one another and to what kinds of underlying reasons this connection relates. In conclusion to the analysis, a brief description is given on the practical ways in which convergence advances. Convergence involves combining expertise of many different sectors in order to provide more efficient, competitive and versatile solutions. The interviews showed that KIBS companies employ a number of different methods with which they extend their know-how so that they can also assume services other than those of their original sector. Firstly, existing personnel can be trained to master issues of other sectors, too. Secondly, broad know-how can be aimed at by hiring employees representing many different occupations and having different kinds of educational backgrounds. Thirdly, know-how existing in a firm can be complemented with contractual cooperation, such as alliances, project cooperation and looser network-like modes of cooperation. Fourthly, new fields of expertise can be acquired for a company on a larger scale by means of corporate restructuring, i.e. acquisitions and mergers. Acquisition as an important means of crossing sectoral boundaries was already noted in business services at the end of the 1980s (Marshall et al. 1988, 195), but in recent years their meaning has become further stressed. Due to the economies of scale, acquisitions and mergers also serve the strengthening of the competitive position of companies; this has led to the concentration tendency to be discussed in the next sub-chapter.

### **9.2.7 Concentration tendencies**

Large international companies operating in the KIBS sector have already been referred to above in connection with multi-sectoral consultancy. Although small and medium-sized KIBS, too, can in principle offer - and a number of them also actually do offer - expertise of several different branches, wide-scoped service solutions and the related diversification are challenges that can still better be met by large companies. Along with internationalisation, the worldwide chains have strengthened and continue to strengthen their position among KIBS that operate in individual sub-sectors. The underlying reason for this is not only the general advantage of size amidst tightening international competition, but also the desire of international clients to operate with one and the same service provider, no matter in which part of the world their activities are performed. The same service provider can guarantee uniform quality of the service, and ensuring confidentiality is easier when cooperating with one service company only. Thus the KIBS sector is undergoing a process of concentration due to both internal factors - development of service contents - and external driving forces - globalisation of the economy. (cf. Bragg 1998, 351; OECD 1999, 46 and 113)

International chains are not, however, equally important in all the KIBS sub-sectors due to the nature of the sectors and their historical development. In some KIBS sectors concentration is taking place above all at national level: the

big domestic or foreign, but non-global, companies are strengthening their position. Furthermore, there are KIBS sectors where concentration is on the whole of minor importance, or is only beginning. Concentration is also connected with country-specific characteristics. On the basis of this study, KIBS companies and sectors can be divided into four main groups according to how concentration has progressed in them and how the interviewees expected it to develop:

- the "big five" companies: multi-sectoral international chains with origins in auditing
- KIBS sectors that are dominated by international chains specialised in the sector concerned: marketing communications, the IT sector (partly)
- KIBS sectors that are concentrating at a national level: technical services, legal services and the IT sector (partly)
- KIBS sectors with small enterprise dominance, where the concentration tendency is low: management consultancy (excluding multi-sectoral consultancy) and accounting.

International chains that have become multi-sectoral from a basis in auditing had by the beginning of the 1980s grown into the largest professional firms in the world. At that time they numbered eight, and due to their special position they were called the "big eight". (Stevens 1981, 2). Development since then has cut their number to five. In the 1990s these "big five" chains were: PricewaterhouseCoopers, KPMG, Ernst & Young, Deloitte & Touche, and Arthur Andersen (together with Andersen Consulting which was detached from it). The problems resulting from the interconnection of auditing and consultancy led at the beginning of the 21<sup>st</sup> century to the termination of the operations of Arthur Andersen. The dominant position of the other multi-sectoral chains has endured and even strengthened. Their units based on auditing control a major part of the auditing market - according to the interviews, around half of this market in Finland<sup>96</sup> - and increasingly also other business advisory services outside actual management consultancy. Consultancy units separated as companies of their own are central players on the market of management consultancy and IT services. Three out of the five management consultancy firms with the "big five" background belong to the "top ten" vendors in the global markets of IT services (OECD 2002b, 120)<sup>97</sup>.

The internal situation in the IT sector is dual with respect to chaining: big international companies play a central role in services connected with software products. Conversely, even the biggest companies providing merely IT services are either wholly Finnish or companies of a Finnish origin merged with foreign firms; they operate internationally but are not global.<sup>98</sup> Sector-specific

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<sup>96</sup> There is no systematic information available on the share of the "big five" companies on the auditing markets of different countries. That the situation in Finland is a very typical one is, however, indicated by the fact that already in 1993 the "big 6" companies - their number being six at that time - controlled about 40 per cent of the U.S. auditing market (Aharoni 1993, 10).

<sup>97</sup> These companies operate either independently, like Accenture (formerly Andersen Consulting) or merged with IT firms, like Cap Gemini Ernst & Young.

<sup>98</sup> Among large international IT houses providing services related to software products are Oracle Corp. providing databases and SAP AG providing enterprise resource planning (ERP) systems (OECD 2002b,

international chains have a strong position in the marketing communications sector, where chaining already began in the 1980s. The major international advertising agency groups developed during that decade and the market share worldwide of the “top ten” agencies rose by the beginning of the 1990s to over 50 per cent. (Roberts 1998, 107-108) Also in Finland advertising lies to a very great extent in the hands of these chains; except for two to three, all major advertising agencies belong to some global chain.

In technical services there are large globally operating companies, too (cf. Baark 1999, 55), but due to the scope and versatility of this sector they do not occupy a dominant position in the sector as a whole. Concentration of this sector has manifested itself in that enterprises specialised in a certain engineering sub-branch have expanded their operations to those sub-branches close to them. The Finnish Pöyry is a good example of this: initially it provided engineering services for the forest industry, but today it has expanded its activities to infrastructure and environmental planning and to energy issues. In the Finnish technical services sector Pöyry stands alone in its size class and is the only company that can be said to be actually global. There are also few engineering firms of foreign origin in Finland, and the interviewees estimated that the situation is changing slowly in this respect. Engineering services are linked with activities that require plenty of local presence, which again requires a certain size of the market before it is worthwhile for the larger companies to be established there. The interest in small markets like the Finnish one emerges primarily as “a secondary effect”, when the leading international engineering firms expand to medium-sized markets. All in all, engineering services represent one of the KIBS sectors where country-specific competition and concentration are likely to play an important role still for a long time.<sup>99</sup>

The share of foreign companies and foreign shareholding is very small in the Finnish sector of legal services, too, and so far there have not been any strong international chains dominating this sector (cf. Aharoni 1993, 10). However, the position of large domestic law firms specialised in company law has strengthened in Finland in recent years. The situation in legal services is clearly changing on the international level, too: chaining is about to start, and the interviewees anticipated that the development in this sector would follow the earlier trends in auditing. The role of the large international companies in this sector will be strengthened by the internationalisation of legislation: complex regulations governing global business and harmonisation of national statutes. A major part of the law linked with corporate activities is now drafted on the international level; competition law and environmental protection law were mentioned as examples by the interviewees.

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119). Of the enterprises providing solely software services, the biggest in Finland is Tieto-Enator, and the second biggest is WM-Data Novo (Federation of the Finnish Information Industries 2002).

<sup>99</sup> During the last two years some acquisitions of big Finnish engineering companies by foreign companies have taken place. However, it is too early to evaluate if the situation regarding the international chaining of technical services is changing more profoundly in Finland.

In management consultancy and in the accounting business micro enterprises constitute the majority of the firms in Finland, and self-employment is characteristic of these sectors. In management consultancy on the international level there are, besides the multi-sectoral companies mentioned above, also large sector-specific firms, and in accounting chaining has taken place inside countries to some degree in recent years. All in all, the concentration tendency is mainly reflected in these sectors in the form of competition coming from other sectors. In the internal development of the sectors the most important issues are not linked to concentration but to the fact that the sectors are only partly professionalised and have lots of unestablished business activity. In her study Kyrö (1999, 9) has referred to the generality of the intermediate forms between the existence and non-existence of the firm in management consultancy. Due to the lack of regulation on accessing this sector, there is a penetrable zone where new aspirants enter into business. The interviews for this study showed that in both management consultancy and accounting the incomers can stay in this flexible zone long perusing their market potential through a part-time job.

In an increasing number of KIBS sub-sectors, polarisation is connected with the concentration tendency: the position of large companies and international chains is becoming stronger, and there are also many small enterprises. Instead, the number of medium-sized KIBS companies is quite low. A small company size has advantages in the expert services, due to which some small enterprises consciously want to remain small or grow slowly. The representatives of many different KIBS sectors stated in the interviews that rapid growth is easily in conflict with quality and innovativeness. The quality of work in expert companies is largely based on a common working culture and learning process, which do not necessarily develop at the same pace with the growth of business. As an alternative to rapid growth, quality management and key-customer relationships can be turned into competitive advantages. A division of work between the large and small KIBS companies has also been formed, which supports the business opportunities of small enterprises. The clientele has partly been split into two parts, so that large service companies serve large clients and the small ones small-scale clients. The small enterprises also complement the services provided by the large companies in the niche areas and act as sub-contractors. When necessary, they can with their mutual networks increase their supply of services either quantitatively or by extending its contents and geographical coverage. (cf. Bragg 1998, 357-358) Law firms and management consultants in particular emphasised in the interviews the significance of the networking of small enterprises as a counterbalance to the spreading of international chains.

At the same time as small KIBS can be very innovative on the basis of a close joint learning process, the large KIBS have special strengths of their own, which enhance innovativeness. These are especially related to the fact that mainly large KIBS perform comprehensive international assignments, in which a lot of information can be accrued and versatile contacts formed. An example of this is provided by international corporate acquisitions and mergers where multi-sectoral consultants or big law firms most often act as designers and facilitators.



According to the interviewees, information is spread in these connections between competitors as well. Simultaneous competition and cooperation, which is a characteristic of today's business, can be seen in KIBS in many other ways, too. For instance, competitors are trained in the application of customised solutions in situations where the same client is served by several KIBS. To sum up, the large KIBS companies interviewed for this study considered their central role to be in acting as "development and training centres" in their own sector (cf. Maula 1999, 187 and 248).

Concentration and polarisation of the KIBS field do not, however, go without problems. A major problem is that concentration of the business structure often reinforces the already strong geographical concentration of KIBS. The division of work described above between large and small service firms functions well in big centres. On the other hand, the interviews confirmed that the areas outside the biggest cities suffer from a lack of services supporting innovation activities. This lack hampers, among others, regional development based on the centres of expertise. In Finland there is a scarce supply of marketing services and legal services in particular, even in the medium-sized centres. The only service companies in remote regions are often semi-professional accounting firms, whose position is weak and that are capable of offering only a minimum service to their clients. The problem of the "vicious circle" (cf. Martinelli 1991b, 81), which was already pointed out in connection with the studies on producer services, has become even more topical as the concentration tendency has continued. Few and one-sided expert services support poorly the clients' business, and this further cuts down the possibilities of buying such services that would facilitate entering a positive development track. In order to stop this vicious circle some interviewees suggested that accounting firms could be developed in a more consultative direction in areas that have no other services. As regards other KIBS branches, establishment in remote regions can be expected to be occasional at the most; it is realistic to aim to set up more services in a few centres outside the Helsinki Metropolitan Area and to support the surrounding regions from there. The interviews showed that subsidiaries of large companies in the regional centres are not only the conveyors of the services of the parent company, but they can, on the basis of the regional business structure, specialise in certain issues and become the leading experts inside the company in these issues.

### **9.2.8 Diversification of international activities**

One manifestation of the internationalisation of the KIBS sector - international chaining related to concentration - was already examined in the previous sub-chapter. Besides large multinational KIBS, internationalisation is progressing in small and medium-sized expert companies. Earlier studies (cf. Chapter 7.3) have shown that operating in international markets can be very versatile, and, similarly, the internationalisation process does not follow one and the same

pattern only. Especially the development of information technology and generalisation of network structures have brought new opportunities for international activities. The interviews conducted for this study supported the view that in the KIBS sector the diversification of internationalisation is one central prospective trend. On the basis of this study, the development features that are discernible in the internationalisation process of KIBS and in the ways of operating on the international arena can be put into three main models. The first one is titled in this connection a modern evolutionary model: gradualness to some degree is one of its inherent features, but the diversity of development is an important characteristic to be taken into account. Another model that is becoming common is very rapid internationalisation that is occurring in many simultaneous forms, the so-called "born global" -model (cf. Rönkkö 2001, 84). Thirdly, the international dimensions included in the activities of companies operating mainly on the domestic market are becoming more and more important; this is called in the present study a "think globally, act locally" -model. The central features of the models are summarised in Table 16.

Table 16: Three models of internationalisation in KIBS

Modern evolutionary model	Traditionally KIBS have been seen to initiate internationalisation through clients and to proceed gradually to their own operations. Serving foreign clients in the home country or serving internationally operating domestic clients are, however, important as such e.g. for specialisation and know-how in KIBS. Their own operations include, besides affiliates and exports, more and more wired cross-border activities. In the location of affiliates, both historical factors, development possibilities and "familiarity" with the market are important. The exports of KIBS are gaining ground in new branches along with commodification.
"Born global" -model	This internationalisation model is characteristic of IT firms and other KIBS whose activities are connected with development of new technologies. Orientation towards international markets begins immediately upon the establishment of a company. Internationalisation occurs simultaneously in many different forms: (wired) exports, affiliates, acquisitions and mergers, strategic alliances, networks, etc. Companies in geographically remote areas can also go global directly without attempting first to get a foothold in the domestic centres.
"Think globally, act locally" -model	This model is characteristic of firms operating mainly in domestic markets; awareness of the globalising business environment and of the international linkages in one's own area of expertise are essential in these cases, too. Domestic companies often have individual international assignments or assignments including an international dimension (e.g. foreign parties). Professional and other networks and different cooperation forms often extend outside the company's own country.

In the traditional evolutionary model a company's own activity in the international market has been seen as the goal, and serving international clients as a preliminary phase, the importance of which has not received as much attention. However, this study showed that serving international clients as such can be very important for KIBS companies. Firstly, focusing on foreign clients can be a way of specialisation for KIBS. Specialisation of this type was encountered in the interviews of, for example, some accounting firms that were specialised in serving subsidiaries of international companies domiciled in Finland. Secondly, serving international or internationalising clients is important for KIBS with respect to development of their know-how. Services to clients operating in foreign countries require that KIBS companies acquire know-how of international law and business procedures and familiarise themselves with different cultures. Supporting the clients in internationalisation includes wide-ranging and demanding tasks. According to this study, the activities of KIBS may comprise feasibility studies on the general applicability of internationalisation projects, country-specific surveys on the activity sectors, identification of marketing channels and sub-contracting potential, recruitment and training of personnel and technical and operational planning of production. The central position of service companies at preparatory stages related to exports has also been stressed in other studies (OECD 1999, 10).

As regards the establishment of affiliates, the export projects of engineering firms that are based on temporary presence at the project site are one of the oldest and most important forms of internationalisation of services in Finland. The largest Finnish engineering firms also carry out more permanent activities towards the major export countries, which are located in different parts of the globe. The establishment of international affiliates of IT companies, which started at the end of the 1990s, has primarily been directed to the leading Western centres of information technology. In non-technological KIBS, where the establishment of Finnish companies in foreign countries is clearly not so common as with T-KIBS, the few subsidiaries established are situated in the neighbouring countries. Here the selection of the locality follows the criterion of "short psychic distance", emphasised by the traditional evolutionary internationalisation model, i.e. companies penetrate first into such foreign markets that resemble domestic markets (Sharma and Johanson 1987, 21)<sup>100</sup>. As the internationalisation of the engineering firms and the IT sector indicates, in other KIBS historical reasons linked with clients and the development potential of the sector have, however, more influence on the locality.

Service exports that do not include local presence or travelling of experts usually require commodification at least to some degree. The interviews of this study showed that export-orientedness is most common in KIBS whose activities clearly include products, especially in IT firms focusing on product business. Also in the product concepts of non-technological KIBS, which were described in the sub-chapter 9.2.4, international marketing potential has increasingly often been taken into account at least in the longer term. Utilisation

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<sup>100</sup> Besides non-technological KIBS - e.g. legal services - architectural firms considered the "familiarity" with culture and the market important.

of communication technology in the cross-border delivery of services is on a continuous increase. For instance, the engineering firms stressed the meaning of the Internet in guidance related to the use of equipment and operational processes. On the other hand, engineering activities, too, include sub-sectors where the changeover to mainly electronic data transfer will still take years. Like previous studies, the interviewees in this study also considered that it is hard to replace on-site presence in the phases of construction and implementation.

Besides the fact that the gradually progressing internationalisation has obtained new features, a wholly different way of internationalisation has developed alongside it: companies are international right from their start-up. This "born global" -model can be considered a more advanced form of the acceleration of the internationalisation process detected as early as the end of the 1980s. For the KIBS sector, this phenomenon is particularly important, because one of the typical representatives of the model are the IT firms which act on the software product markets or develop software products. For instance, in all those IT firms interviewed for this study, whose activities included product business, orientation towards international markets had begun immediately upon the establishment of the company, simultaneously with the development of technology and business activities. In the "born global" -model not only the rapid entry to the international arena as such, but also the use of many simultaneous channels for this entry are essential. Exports (especially wired forms of exporting), establishment of affiliates, acquisitions and mergers, agreement and cooperation schemes and non-equity networking are all pursued simultaneously. The interview results received from the IT companies also question the universal applicability of the view on the dependence of the internationalisation on the domestic geographical location of firms. According to this view - included in the stages of development model - internationalisation is mainly occurring from the domestic centres, which is why companies located in more remote areas first try to get a foothold in these centres and only afterwards in foreign countries (cf. Roberts 1998, 187). However, this study shows that the new IT companies operating outside the Helsinki region often aim to penetrate into global markets directly from their original home district.

The general internationalisation of the markets can also be seen in the activities of KIBS that mainly operate on the domestic market. It was already stated above that not only KIBS' own international operations are significant, but also the serving of international clients essentially extends their possibilities for utilising the expertise and know-how. For a number of KIBS this indirect internationalisation is a sufficient solution. Unlike the evolutionary standpoint presumes, all companies serving international clients do not strive for moving over to the next step, i.e. to foreign operations of their own. Internationalisation also shows itself in that domestic firms obtain more and more often individual international assignments, or domestic assignments have international dimensions: a foreign financier may be involved and agreements between companies may touch upon foreign parties. Furthermore, companies operating in the home market are often participants in international networks and development projects. Cooperation forms can also be preparatory stages to

proprietary adjustments. More and more there exists a continuum between voluntary networks and closer forms of business cooperation. According to this study, the forms of networks vary from fully informal cooperation to a common brand, and further on to exclusive networks whose participant companies are liable to use the members of the network as partners in other countries. Networks of the latter kind can already be regarded as a hybrid form, between a network and a chain. Such networks were found in legal services, for example.

All in all, internationalisation should be examined, not only as an expansion and diversification of the forms of trade, but also as changes in the business environment. These changes also touch upon companies that do not directly operate in international markets (cf. Castells 1996, 95; Schienstock 1999, 11-12). As stated above on several occasions, national and local ties will continue to be important in many KIBS sectors. However, local orientation no longer means the same as traditionality or slow development, but it is gaining new, modern content. A skilful combination of the local and the global will become a central issue (cf. Wilenius 2004, 25; Wood 2002b, 68-69). In the case of KIBS mainly operating in the domestic market, the question is about extending know-how so that the capability to receive foreign assignments and to create transboundary contacts exists. In the study in hand this kind of orientation has been entitled with the somewhat worn-out slogan "think globally, act locally". Although the title has in this connection only been linked to companies that do not have much international activity, its message also concerns KIBS operating in the international arena. The interviews showed that the ability to combine knowledge about local circumstances with global activity and to tailor the services to the local needs is becoming an increasingly important "trump card" in competition for both big international chains<sup>101</sup> and small technology-based KIBS operating in the new sectors.

### 9.3 Summary and evaluation of the strong prospective trends

This sub-chapter summarises the central characteristics of the eight strong prospective trends analysed above, as well as the factors supporting or weakening the continuity of the trends. The summary is also presented in the form of a table (Table 17) at the end of the sub-chapter.

According to the first prospective trend, the use of external firms to fulfill the needs for expert services is continuously increasing. It can be anticipated that this long-existent trend will keep its basic course also in the future. A central underlying factor in the long-term development of the trend has been the progress of the division of labour; more and more specialised expertise has

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<sup>101</sup> In the "big five" companies, combining the global and the local also concerns the ownership base. The transnational companies include national firms (cf. Roberts 1998, 125), e.g. in Finland the oldest national auditing firms can be found in the background of chains. To simplify, it can be said that the "big five" companies follow the "act globally, think locally" -model.

been required due to this. The increased importance of innovativeness has stressed the role of services related to innovation activities. On the basis of their broad perspective, specialised outside firms can often support the activities of the clients better than internal services. Information technology and development of networking practices increase the clients' possibilities for linking external operations to their business whole. However, the balance between external and internal services will continue to vary by sector and by company. The core functions that companies do not want to outsource will change along with advances in technology and in business models. In addition, success in buying expert services and in integrating them into the company's own activities has a decisive effect at the company level on the extent to which external services will be used. Thus the clients' purchasing know-how is important to the future of KIBS. "Meta-KIBS" that support clients in planning the use of external services and that train clients in the use of these services are becoming an important new group of expert activity.

The second strong trend describes the tightening of the linkages of KIBS to the strategies of the clients. In the case of management services, this trend already has a long history. The interviews for this study showed that also the KIBS companies that serve some specific stage in the client's production process (IT service firms, legal firms, marketing communications firms, etc.) aim to consider and promote the client's business as a whole. Correspondingly, according to the experiences of the interviewees, clients acquire services more and more often on the basis of their overall strategy and the related specific strategies (competencies strategy, IT strategy, brand strategy, design management). The strengthening of the strategy linkages emphasises the significance of KIBS. At the same time it requires them to use more their own initiative: KIBS are expected to bring up issues which are important to the client and which, when tackled early enough, help to prevent problems. The trend means considerable changes in the present ways of thinking and operating in some KIBS branches; new thoughts and practices are not self-evident in all client organisations, either. This, like the deep trust required in the sharing of strategic information, may slow down the progress of the trend. On the other hand, partnerships based on close and longer-term cooperation are an integral part of the new business models gaining ground in the economy; this functions as a driving force which strengthens the respective development in the KIBS field as well.

Along with the tightening of the strategy linkage, KIBS must not only master their own profession, but understand more profoundly the business of their clients, too. The third strong prospective trend includes the phenomena that relate to the client-specific specialisation based on this. Specialisation is taking place both by sector and by other features that characterise a number of client companies. Except for the engineering and management consultancy services in manufacturing, many of which have originally developed on a sectoral basis, sector-specificity provides KIBS with a new opportunity and challenge. It is easiest for large service companies that have the resources to cover several client industries and that thereby can avoid the risks involved in commitment to one sector only. Small KIBS firms often aim to find a feature in their clientele

that is more restricted than their industrial sector and makes it possible to develop a service of the niche type. A division of work according to the size of the clients can also be detected to some degree between the large and small KIBS companies. An important contributory factor in understanding the clients' business is knowledge about the clients' customers. Parallel with the generalisation of the client-orientedness in all businesses, KIBS in different branches - not only in marketing communications - increasingly frequently examine their service chain all the way to the end-user.

A deeper understanding of the client's business and strategies also means that the service needs are perceived in a more comprehensive way. The fourth trend, describing the broadening of the content of the service provided to the client, goes hand in hand with the two previous trends. The generalisation of service packages and integrated solutions developed from these are expressions of the trend. The driving forces on the level of the entire economy promote the strengthening of the trend both on the demand and supply sides. Large international companies have since the 1980s purchased business services in packages rather than as separate services. The development of information technology and networking practices enhance the possibilities to combine services of different KIBS professionals. Combining services often requires commodification to some degree. Particularly in the KIBS sectors that are linked with technology, a service can be fully compiled from modules that vary according to the client. Here tailoring no longer means development of the service from the start all over again in each individual case. In expert services, commodification and modularisation include, however, the risk of excessive simplification. Consequently, these practices do not necessarily expand rapidly and in a straightforward manner. For instance, commodification in principle increases the possibilities of self-service, but in expert services only very simple solutions can be delivered without human interaction.

The fifth trend describes change in the basic approach that KIBS apply to their working. The concept of knowledge-intensiveness includes the idea that the service does not consist of detached advices, but means "living" in the client's processes. In other words, the consultative nature of the working process is inherent in the definition of KIBS. In practice, however, the degree of the interactiveness and involvement varies in KIBS, and the consultative approach is a growing trend rather than a self-evident fact. An important driving force behind the trend is the development of information technology, which enables KIBS to increasingly move from routine assignments to more in-depth service. On the other hand, this transfer is often also necessary in order to ensure demand. In some traditional expert sectors - e.g. in accounting - the change in the content of work is very extensive and challenging. Strictly speaking, it is only after this change that the companies in these kinds of sectors become KIBS. In many of the KIBS sub-sectors, the growth of the consultative way of working has also signified extending or transferring the activities from the original field to management consultancy. A new type of multi-sectoral consultancy is emerging, in which the central actors are big IT houses, whereas the traditional combination of auditing and consultancy is breaking up due to ethical problems.

Hard competition in the management consultancy sector may at worst slow down the spread of genuinely consultative approaches in KIBS.

The penetration of other KIBS into the consultancy business reflects, besides the fifth trend, also the sixth trend: general convergence, which is taking place both among the KIBS sub-sectors and between KIBS and the other main sectors. In some KIBS functions, crossing the sectoral boundaries is inherent in the nature of the activities. In personnel recruitment, for instance, marketing communications, training and management consultancy are natural cooperation partners. The actual convergence inside the KIBS sector accelerated at the end of the 1980s after the service packages had become common. The interviews of this study indicated that broadening of the service contents is still an important promoter in convergence. Tightening competition and especially the development of information technology are other factors furthering the development. The rapid growth and on-going internal structuration of the IT sector lure KIBS from different branches to look for business opportunities through the combination of their own sector and the IT services. Part of these linkages may prove temporary, but the presence of computer technology in the processes of other sectors has more permanent effects on the tightening of the connection between industries. For instance, in financial administration, the banking industry is becoming a competitor to KIBS. Another example is provided by the convergence of R&D, industrial design and engineering services which the development of computer modelling has promoted. In practice the convergence proceeds in four different ways: companies broaden the skills of their present personnel through training, increase vocational diversity through recruitment, complement their services with cooperation schemes, and penetrate into new fields through acquisitions and mergers.

The seventh trend depicts the concentration occurring in the KIBS sector both at the national and the international level. Besides the competitive advantages brought by size, the development is furthered by the wish of global clients to operate with the same service provider all over the world. The position of big KIBS is also strengthened by their better possibilities for offering wide-scoped services. However, concentration is advancing in different ways in different KIBS sectors. In some parts the dominance of big companies has already been formed several decades ago. The multi-sectoral "big 5" firms originating in auditing represent the concentration in its strongest form; the majority of these firms were already recognisable at the beginning of the 1980s. The advertising sector is an example of global sector-specific concentration; here the present-day international chains were mainly established in the 1980s, too. Domestic concentration is typical of the engineering services; in this sector global chaining is decelerated by the demand for local presence during the service process. In legal services, which have earlier operated in a highly atomistic structure, chaining is about to start along with the internationalisation of legislation. The least concentrated sectors are management consultancy and accounting, where micro companies predominate and the professionalisation process is incomplete. At the level of the whole KIBS sector, concentration is more and more leading to polarisation: the division into large and small KIBS



with a low number of medium-sized companies. Partly the large and small KIBS can, by means of the mutual division of work, develop their own strengths in a positive manner. It is problematic, however, that polarisation often increases further the regional inequality in the availability of services.

As global chains play a key role in the concentration, the seventh trend also describes one aspect in the internationalisation of KIBS. Internationalisation in the KIBS sector is, however, a larger phenomenon and concerns all the forms in which KIBS function on the international arena. The eighth trend depicts the diversification of these forms, a phenomenon that opens up new opportunities for small KIBS as well. The fact that exports and the establishment of affiliates are not the only ways to operate internationally was an important observation, which was made right after the internationalisation of the service sectors had become a more common research object towards the end of the 1980s. Among others, contractual relationships and services targeted to foreign clients in the home country were shown to be central in business services. The process of going global may also proceed in many ways; in recent years, the universality of the traditional evolutionary model has been questioned more and more often. The interviews for this study support these views and show that internationality appears in some form or another in the activities of an increasing number of KIBS. The advances of ICT and the progress of networking practices are central drivers in the development. Wired cross-border trade enabled by ICT is, however, restricted by the inherent need of expert services for face to-face contact. Furthermore, the local ties and national characteristics of some services slow down - not only chaining - but also internationalisation as a whole. On the basis of the interviews, KIBS can be divided into three main groups: KIBS following a "modern" evolutionary model, "born global" firms, and KIBS operating in the domestic market but having individual assignments and cooperation relationships that include international dimensions.

As general observations of the trend analysis, the following points can be brought up: Most of the strong prospective trends described above emerged in their present form in the 1980s. Especially in the latter part of the decade, many essential elements of the trends were already recognisable. The advances of ICT, the progress of networking practices in business life and the globalisation of the economy have, however, accelerated the development during the recent years. They have changed and will further change the contents of the trends: new features were found in this study in all of the trends. At the level of the whole trend, the future progress of the eight strong prospective trends identified seems very probable, at least as far as the interviewees of this study could anticipate. However, there are abundant factors that may slow down the pace of the development. Further, even though breaking or turning of the trends at the general level is not in view, there are sub-trends whose manifestations may radically change in the future and some of which may even lose their force. Some specific expressions of convergence between KIBS branches - especially those linked with the present stage of the IT development - are examples of such sub-trends. Finally, the interplay of trends is an important issue. In the above analysis, other trends were shown to strengthen the trend under

discussion in several cases. The possible contradictory features among the trends and the effects of these contradictions have not, however, been examined up to now. At least one of the weak signals found in the study seemed to be linked with this kind of trend conflict. Thus, the issue will be discussed further as weak signals are analysed in the next sub-chapter.

Before the examination of the weak signals, there is still reason to tackle the issue of the present relevance and “anticipatory power” of the results concerning the trends. Strictly speaking, the trends illustrate expert opinions as they were in the year 2000. When evaluating the extent to which the findings made are still valid today, attention should be paid to factors that within the KIBS sector or in their business environment have changed between performing the interviews and writing the report. Two important changes can be identified: a radical slowing-down in the pace of the development of the IT business (cf. European Information Technology Observatory 2003, 71), and the deepening of the ethical problems in the multisectoral consultancy. Regarding the former change, an assumption can be made that KIBS operating in close connection with IT, especially the Internet-consultants, might provide somewhat different opinions if they were interviewed today (cf. the former paragraph). More cautious views would be probable concerning both the rate of the development of the IT services and the role of these services within the whole of KIBS. This means that the results might differ from those actually obtained in the case of the growth trend, and to some extent also in the case of the trends that describe broadening of the service content, convergence and internationalisation. There are, however, many other KIBS sectors whose business is not directly dependent on the development rate of the IT industry, even though these other KIBS, too, are often active adopters of the advancements of IT. Thus, the reservations mentioned cannot be supposed to have an effect on the basic direction of the trends.

Another group of KIBS among which the situation has changed after the interviews are the “big five” -companies. As mentioned earlier, the combination of management consultancy and auditing has led to a crisis. Some respondents already anticipated some kind of ethical crisis at the time of the interviews, and some “big five” -companies had made preparations for detaching their consultancy units from the main activity. The discussion about the neutrality of auditing has, however, become more acute during the last years. This can be supposed to have some effects on the trends describing the tightening linkages of KIBS to clients’ strategies, the spreading of consultative working practices, and convergence. Concretely it has had effects only on the “big five” -companies, but on a more general level it may increase caution as regards combining of different KIBS activities and becoming involved very deeply in the clients’ business. As in the above case of IT, it can, however, be concluded that this phenomenon does not change the basic direction of the trends. Despite their important position, the “big five” -companies are only a part of the whole KIBS sector, and there are many KIBS sub-sectors that can draw close to each other, even to management consultancy, and develop strategic stances without ethical problems.

Table 17: Summary of the strong prospective trends in the development of KIBS

"Name" of the trend	General nature of the trend, sub-trends and effects	Earlier expressions of the trend and factors that have supported its emergence and development	Driving forces and other factors supporting the continuity of the trend in the future	Inertia factors and possibilities for discontinuities	Qualitative changes occurred in the trend
Increasing demand for external expert services and growing emphasis on their qualified use	<ul style="list-style-type: none"> <li>- the use of KIBS is on a continuous increase; outsourcing is here an important sub-trend</li> <li>- the trend is crucial from the viewpoint of the quantitative development of KIBS</li> </ul>	<ul style="list-style-type: none"> <li>- the development of the division of labour has increased the need for special expertise</li> <li>- the growing role of innovation has brought to the fore services facilitating innovation</li> </ul>	<ul style="list-style-type: none"> <li>- the development of ICT and networking promotes linking the external services to the clients' business</li> <li>- quality of service is a competitive advantage of external expert firms</li> </ul>	<ul style="list-style-type: none"> <li>- there are situations where in-house production of services is more functional</li> <li>- failures in the use of KIBS and the lack of adequate services retard the development</li> </ul>	<ul style="list-style-type: none"> <li>- service branches that show close linkages to clients' core business have partly changed</li> <li>- new types of KIBS are emerging; training of clients and planning of outsourcing</li> </ul>
Tightening linkages of KIBS to clients' strategies	<ul style="list-style-type: none"> <li>- both clients and KIBS apply strategic thinking in service production</li> <li>- the trend highlights the role of KIBS, but requires initiativeness and confidentiality of them</li> </ul>	<ul style="list-style-type: none"> <li>- some KIBS have always served the general management of their clients;</li> <li>- strategy consultancy is an old expert branch</li> </ul>	<ul style="list-style-type: none"> <li>- clients' striving for the overall management of the demand-supply chain and the generalisation of partnerships as a part of networking practices support the trend</li> </ul>	<ul style="list-style-type: none"> <li>- considerable change in ways of thinking is needed in some KIBS (focus on the long-term prevention of clients' problems)</li> <li>- building trust is not simple in practice</li> </ul>	<ul style="list-style-type: none"> <li>- also KIBS serving a certain phase in the production aim to understand the client's business goals</li> <li>- clients have specific strategies for service purchases</li> </ul>
Increasing importance of client-specific business know-how	<ul style="list-style-type: none"> <li>- in order to understand their clients' business, KIBS specialise (by client industry or by client group)</li> </ul>	<ul style="list-style-type: none"> <li>- in technical and process consultancy specialisation has traditionally been carried out according to client industries</li> </ul>	<ul style="list-style-type: none"> <li>- tightening strategy linkages of KIBS require client-specificity</li> <li>- the general growth of client-orientedness increases the significance of the end-user in KIBS, too</li> </ul>	<ul style="list-style-type: none"> <li>- commitment to one client industry means risk-taking; mastering of several industries requires lots of resources</li> </ul>	<ul style="list-style-type: none"> <li>- KIBS are actively looking for such common features of client companies that enable specialisation</li> <li>- acquiring knowledge of the clients' customers is coming to the fore</li> </ul>

Broadening of the content of the service provided to the client	<ul style="list-style-type: none"> <li>- KIBS aim to meet better their clients' needs by combining and integrating services</li> <li>- this often requires commodification</li> </ul>	<ul style="list-style-type: none"> <li>- service packages have been in use in the business service sector since the 1980s</li> </ul>	<ul style="list-style-type: none"> <li>- especially big global companies presuppose that services provided are wide-ranged</li> <li>- IT and networks increase possibilities to combine services</li> </ul>	<ul style="list-style-type: none"> <li>- commodification of expert services includes the risk of simplification</li> </ul>	<ul style="list-style-type: none"> <li>- service packages are developing towards integrated solutions and commodification towards a combination of modularisation and tailoring</li> </ul>
Spreading of consultative working procedures	<ul style="list-style-type: none"> <li>- instead of detached advices, KIBS aim to "live with" and catalyse their clients' processes</li> <li>- other KIBS penetrate into the consultancy industry</li> </ul>	<ul style="list-style-type: none"> <li>- the core of the idea of KIBS is in non-linear, interactive service</li> <li>- joining of management consultancy to other KIBS is in some parts an old phenomenon</li> </ul>	<ul style="list-style-type: none"> <li>- the development of IT reduces routines, which provides KIBS with new possibilities but also compels them to find substitute tasks</li> </ul>	<ul style="list-style-type: none"> <li>- consultative practices mean a big change in traditional KIBS</li> <li>- there is a risk that real changes are tramped by the competition on the consultancy market</li> </ul>	<ul style="list-style-type: none"> <li>- some services (e.g. accounting), which strictly speaking have not earlier been KIBS, are along with the new practices developing into "real KIBS"</li> </ul>
Convergence among the KIBS sub-sectors and between KIBS and the neighbouring sectors	<ul style="list-style-type: none"> <li>- the boundaries between different KIBS sub-sectors and between KIBS and some other main sectors (e.g. banking) become blurred</li> </ul>	<ul style="list-style-type: none"> <li>- convergence linked with service packages has been known since the end of 1980s</li> <li>- "trans-sectoral" co-operation is inherent in some services</li> </ul>	<ul style="list-style-type: none"> <li>- the need for broad services, tightening of competition, the advancement of IT and the structuration of the IT sector increase convergence</li> </ul>	<ul style="list-style-type: none"> <li>- some combinations of services are functional only temporarily or the need for convergence may be overestimated (cf. the development of new media services)</li> </ul>	<ul style="list-style-type: none"> <li>- the advancement of IT has enabled new links to emerge between different KIBS (e.g. between R&amp;D, industrial design and engineering services)</li> </ul>
Concentration tendencies	<ul style="list-style-type: none"> <li>- the role of big KIBS strengthens nationally and internationally; the KIBS sector divides into big and small firms</li> <li>- regional inequality in service offering grows</li> </ul>	<ul style="list-style-type: none"> <li>- the "big 8" (today "big 5") were discernible at the beginning of 1980s</li> <li>- also some individual branches (advertising) had concentrated far already in the 1980s</li> </ul>	<ul style="list-style-type: none"> <li>- big KIBS have better chances of providing broad service solutions</li> <li>- international clients' wish for globally equal service increases chaining in KIBS</li> </ul>	<ul style="list-style-type: none"> <li>- the need for local presence (engineering services) and lacks in professionalisation (consultancy and accounting) retard global concentration</li> </ul>	<ul style="list-style-type: none"> <li>- global chains occupy new areas (e.g. legal services)</li> <li>- both big and small firms aim to find their own strengths in the polarised KIBS sector</li> </ul>
Diversification of international activities	<ul style="list-style-type: none"> <li>- multiplicity in the forms of international operations and in the ways to internationalise is increasing in KIBS</li> <li>- also small KIBS may be international</li> </ul>	<ul style="list-style-type: none"> <li>- studies on services have shown that exports and FDIs are not the only forms and phased proceeding not the only model in internationalisation</li> </ul>	<ul style="list-style-type: none"> <li>- ICT enhances the tradeability of services and enables wired cross-border trade</li> <li>- networking provides new possibilities for international operations</li> </ul>	<ul style="list-style-type: none"> <li>- the need for face-to-face contact in KIBS restricts wired delivery</li> <li>- local ties and country-specific features are strong and change slowly in some KIBS</li> </ul>	<ul style="list-style-type: none"> <li>- the "born global" model is gaining a foothold</li> <li>- international links in domestic transactions and non-proprietary networks are important for internationalisation</li> </ul>

## 9.4 Weak signals

In the discussion about the content and operationalisation of the core concepts of this study (Chapters 2.2 and 8.2.3), the central features of weak signals as well as the criteria for their identification were already brought up. These can be summarised into three main points, which were used as guidelines in the search for weak signals in the research material:

- Firstly, a weak signal refers to a development possibility, which some people (experts) have faith in, but whose realisation is not - unlike that of a trend - unanimously anticipated and which is not even backed by a majority.<sup>102</sup> Thus, rarely expressed, deviant opinions of future prospects were looked for in the interview material.
- Secondly, a weak signal is not a mere random opinion, but such phenomena can be identified in the past or present on the basis of which the development indicated by the weak signal in question is possible, although not as probable as a trend. In order to meet this criterion, real-life practices compatible with the opinions identified as weak signals were sought in the interview material. In addition, support for weak signals was sought in previous studies.
- Thirdly, in order to be a weak signal, the small symptom observed today has to be associated with important impacts in the future. In the examination of impacts, too, both the interview material and earlier studies were utilised. The ways in which weak signals are linked to the strong prospective trends identified earlier, and the ways in which they possibly change the picture of the future of KIBS, created on the basis of the trend analysis, played a central role here.

The previous sub-chapters showed that the existence of trends was directly mentioned by only a few interviewees. In the case of weak signals, such direct statements were not obtained at all. Thus, the weak signals identified in this study are observations of the researcher, “dug out” from the interview material and the literature. By nature, the weak signals found are manifestations of broad process-like development possibilities in the KIBS-sector and in the client relationships of KIBS. These development possibilities cannot be expected to eventuate in specific events, but little by little, i.e. the time of their final realisation is more difficult to identify than that of technological innovations, for example.<sup>103</sup> Following the procedure described above, three weak signals could be identified in the study:

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<sup>102</sup> When explaining the difficulty of perceiving weak signals, the idea of the filtering of information has often been applied. According to Ansoff, a central developer of the theory of weak signals, there are three kinds of filters that a piece of information has to go through before reaching the receiver. The first stage, the surveillance filter, requires the receiver to choose what kind of information is needed and what kinds of techniques should be employed to procure it. At the second stage, the receiver of information uses the mentality filter: he evaluates the messages arrived and decides what to accept and what to reject, because they are unrealistic, unnecessary, of little use, or otherwise irrelevant. The third stage, the political/power filter, determines what information is allowed to influence decision-making. (Ansoff 1984, 334-335)

<sup>103</sup> A classical example of weak signals often cited in futures studies are the embryonic forms of the Internet, e.g. ARPANET (Mannermaa 1999, 89).

- the development of the KIBS sector towards a two-layered structure, so that a layer of KIBS specialising in the coordination of services will be formed in-between branch-specific KIBS and the clients
- the strengthening of the position of KIBS so far that they will, clearly more than today, direct the business of their clients or provide services from their own starting points, which means that the clients will have to adjust their business to the services available
- the possibility that firms in client industries start selling their in-house expert services to each other to a considerable extent, which would cause a notable change in the competitive environment of specialised expert services, i.e. KIBS.

As the study offers more material for the discussion on the content and impacts of the first weak signal than of the other two, the first signal will be treated in the following as a sub-chapter of its own and the other signals after that together in one sub-chapter.

#### **9.4.1 The prospect of a two-layered structure in the KIBS sector: specialists and coordinators**

Of the strong prospective trends described in the previous sub-chapters, the third and the fourth place somewhat contradictory demands on the firms engaged in the KIBS sector. The former implies that KIBS firms should in their service be capable of specialising according to their clients. The latter means that KIBS should develop ever more comprehensive expertise to be able to fulfil the clients' wish for overall integrated solutions. Both trends are so strong that the one cannot be expected to give way to the other in the foreseeable future. Thus a solution that reconciles these differing demands has to be found. In the case of the largest KIBS companies, the direction of the solution is, in fact, already observable: it is a combination of industrial diversification and in-house allocation of work described in the trend analysis. With diversification, expertise from several KIBS branches is gathered to the service firm; with in-house allocation of work this expertise is then adjusted to meet the needs of a client industry, a group of clients formed in non-industrial basis, or of an individual client.

However, big multi-sectoral KIBS cover only a part of the entire service supply of KIBS. As stated earlier, they also mainly serve large-scale clients. A central question is how the services intended for SMEs can keep up with development, i.e. how client-specificity and broad service content are combined in smaller KIBS whose clients usually come from the SME sector. The need for a new kind of service is most acute in those small client firms that operate in new, dynamically developing fields, such as the software product business and biotechnology. As far as these sectors are concerned, the lack of KIBS possessing branch-specific knowledge has been recognised as a problem; for example in Finland, the ways of resolving this problem have been discussed to

some degree during the past few years (Culminatum 2003). However, the problem applies to development of the SME sector on the whole. Furthermore, the question is not only about how the special nature of client sectors could be taken into account, but also about how the service need arising from this special nature could be met in a comprehensive manner by means of multi-sectoral service solutions.

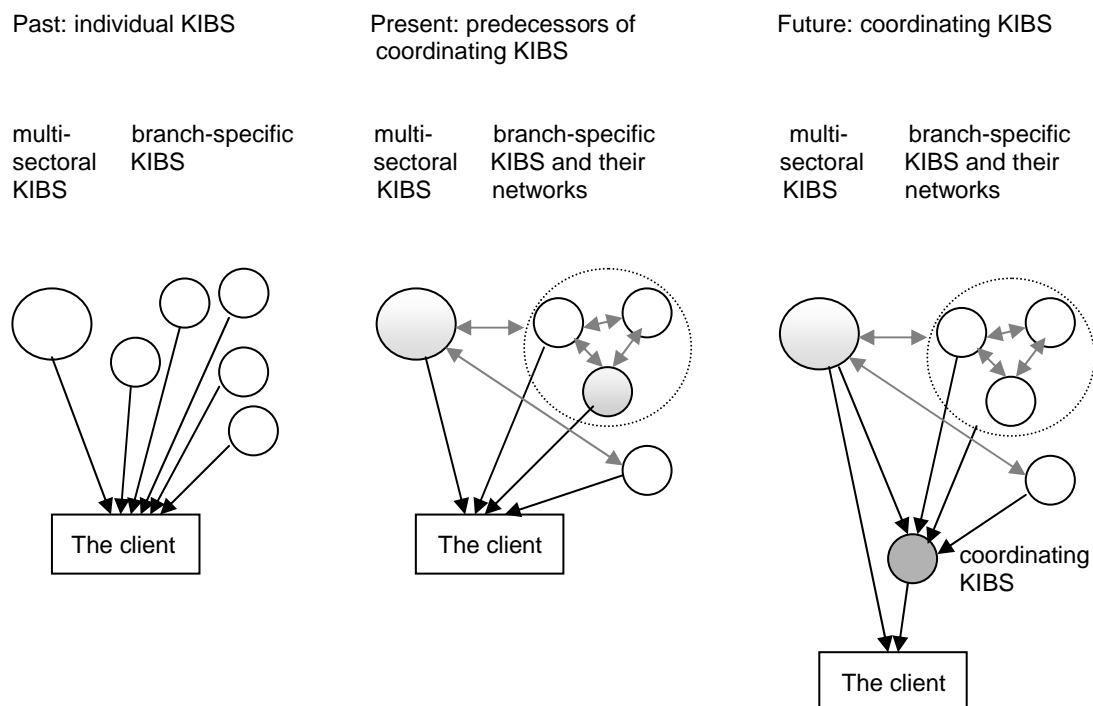
The development of the KIBS sector into a two-layered service system - a weak signal which this study gave some hints about - may be one answer. It means that some KIBS would specialise in combining services from small KIBS operating in various sub-sectors into one package or into an integrated solution, and convey the final outcome to the client. The expertise of these KIBS must contain plenty of knowledge of the special features of various client industries and groups of clients; the service packages and solutions are compiled according to these special features. "Combiners" or "coordinators" must also be capable of finding the necessary services from KIBS operating in different sectors, managing the services and of marketing them to the client. If a sufficient number of such combiners or coordinators of services emerge, then small branch-specific KIBS can concentrate on expertise of their own profession, expand and deepen it and, nevertheless, be actors in multi-sectoral solutions. The differentiation of know-how requirements related to the two-layered service system will be discussed further in Chapter 10.3.

Some interviews made for this study gave indications of the development possibility as described, and it is also included in some previous studies. The interviews showed that when KIBS companies jointly provide multi-sectoral service packages and solutions, a responsible party which is to manage the project as a whole must be appointed. One interviewee described the change caused by the transfer from profession-specific services to joint offerings as follows: "Earlier ADP houses, consultants and advertising agencies only met in the client's lobby, but now they sit at the same table working together for the client. The compositions are unique and the group selects from among its members the actors whose task is to carry forward the common project." Some other studies have expressly emphasised the necessity of one lead supplier in connection with service packages and solutions; this lead supplier takes care of managing the other suppliers. (Bragg 1998, 358; cf. also Elfring and Baven 1994, 45). In fact, the whole idea of packages and broad solutions is that the clients can avoid the hassle of going to a large number of suppliers to request services. The pressure of finding more effective practices for the combination of comprehensiveness and client-specificity of services is high. Solutions in which the management of service offering is organised on an ad-hoc basis and carried out in addition to the branch-specific service of the manager, may turn out to be insufficient. Certain firms that have operated as lead suppliers in individual projects could then develop into companies specialised in combining KIBS' services.

If this development is realised, it will mean that the large and small-scale KIBS will have more clearly a different model in the provision of their services. Large

multi-sectoral KIBS offer, even in the two-layered service system, another chance to resolve the problem of a service that is at the same time wide-scoped and specialised: they coordinate their services themselves. Besides the services that they provide with their own personnel, they use small KIBS as sub-contractors, especially in niche areas. On the other hand, an opposite situation is also possible in the two-layered system: large KIBS may be suppliers of some parts of the service packages provided by small KIBS and be parties of the networks formed by them, i.e. specialised combiners of services may acquire part of the services from large multi-sectoral KIBS. Figure 9 shows how the two-layered structure might develop on the basis of the current situation and what the relationships between large and small KIBS and branch-specific and coordinating KIBS could be like in this structure. The Figure also describes the development stage preceding the current situation. In this stage there already were multi-sectoral KIBS side by side with small KIBS, but clearly different operating models, which would be similar to those of today and which possibly will differentiate even more in the future, between the multi-sectoral giants and the branch-specific small firms had not yet emerged.

Figure 9: Development towards a two-layered structure in the KIBS sector: specialists and coordinators



In the Figure, the original services of KIBS are uncoloured and the coordination services are coloured grey: "part-time" coordination is light grey and specialisation in coordination dark grey. For the sake of clarity, the activities linked with combination of services are marked with black



one-way arrows and the mutual relationships of service providers with grey two-way arrows; due to co-production, the combinatory activities also involve two directions in reality. At the development stage preceding the current situation, each service was mainly provided separately and the client coordinated the services he needed himself. There were already multi-sectoral companies side by side with branch-specific firms, but packaging of services and service solutions were not yet typical practices in them, either. In the current situation, the client continues to combine services from various sources: multi-sectoral KIBS often provide coordinated services, some of the smaller KIBS have formed networks, and some operate individually. The networks may have a lead supplier that combines services, but members of the networks may also provide services directly to the client. Both the networks as a whole, KIBS participating in the networks, and KIBS operating individually may function as sub-contractors to large multi-sectoral KIBS. In the future suggested here, the service system will mainly be two-layered: the service providers which are in contact with the client are either KIBS specialised in combining services or large multi-sectoral KIBS that coordinate their services themselves. The former compile services both from the networks of small KIBS, from individual KIBS inside the networks, from KIBS operating outside the networks, and also from multi-sectoral large service providers. There will be many kinds of cooperation relations between large service providers and small KIBS or their networks, just as today.

A service combination can be tailored for each individual client, but the coordinators, too, can apply commodification and modularisation. Here, the “skeleton” of the service package can be formed according to the typical needs of certain client industries, firms of a certain age, etc., and company-specific applications need not be made all over again in each individual case. If KIBS combining and coordinating services become more common, they will probably have connections to other KIBS that do not provide branch-specific service. The question is about connections to those “meta-KIBS” which give guidance to clients in the use of KIBS or provide planning services for outsourcing. On the basis of this study, the development of meta-KIBS themselves cannot be regarded any more as a weak signal, but - as stated in Chapter 9.2.1 - as a part of a prevailing trend. It is also possible that clients, too, besides KIBS, set up organisations that combine services and advise in using services. Bragg (1998, 360-361) has presented the idea of industry-specific outsourcing advisory groups, which small client firms could set up together. These groups would support the selection of service suppliers and the management of supplier relationships in small firms that do not usually have a proper organisation for receiving expert services. The interviews of this study did not, however, give any indications of this kind of initiative by clients.

The two-layered service system offers one solution to the question, brought up in the interviews: “How could efficient ‘specialised boutiques’ stay alive in the field of expert services dominated by ‘high-class department stores’ and how could these two types of enterprises work together?” The development possibility described is not, however, without problems. An important issue is whether the development - at the same time as it may resolve some trend conflicts - will be contradictory with some other trends. For instance, the linkages to client’s strategies, as well as the partner relationships with clients, will probably loosen in small branch-specific KIBS, if they mainly operate in interaction with service coordinators. This, again, could have negative impacts on the development of the content of expertise. Although the two-layered

service system externally resembles the structure of sub-contractor - systems supplier, which has proved successful in manufacturing, the case with expert services is far more complex and a straightforward analogy should be avoided. The weak signal discussed here touches upon the very basic issue of how and to what extent the service result can be detached from the service activity.

#### **9.4.2 Other weak signals**

##### *KIBS as shapers of their clients' business*

While the first weak signal may in some parts influence the strong prospective trend of the tightening strategy linkages of KIBS, the second one can be regarded more as a result of this trend. In the trend analysis, the consequences of the tightening strategy linkages were found to be the growing importance of KIBS, the change of the relationships between KIBS and their clients from service relations into partner relations, and the increase in KIBS' own initiative. A weak signal associated with these developments was discerned in the study. It suggests that the position of KIBS in client relationships may become even essentially stronger than it is today. This means firstly that KIBS would, based on their expertise, more determinedly seek to influence the basic directions of the business of their clients. In a cautious form this aim is included in the following interview statement: "An expert company cannot serve, unless it knows its client's thoughts of business. On the other hand, we have been able to take the client's thoughts to a certain direction." In another statement the idea was put in a more straightforward way: "An advantage of consultancy (compared to more specific KIBS - author's comment) is that the situation of the client firm can be examined in a versatile way, and thus, it is possible to create needs for clients." As mentioned earlier, in certain previous studies it has also been noted that especially at the regional level business services may be the party that steer and organise the activities of industrial companies on the basis of the demand they have detected (Illeris 1989a, 58).

The aim to direct the business of clients reflects the concern of KIBS, associated with their increased own initiative, for that the clients should take the important changes occurring in their environment into account. However, shaping the clients' business also aims at promoting the sales of services of KIBS themselves. The latter motive is even more clearly evident in the second aspect of the weak signal discussed here. This aspect is linked with the commodification of services and manifests itself in the aim of getting the client to adjust his business so that the commodified services of the KIBS concerned fit the overall set. In such a situation, clients may become dependent on their service provider even to a large extent. The study gave indications of this aspect of the strengthening of the KIBS' position only in the case of some large IT houses where the commodification of services has progressed far. All in all, the considerable strengthening of the role of service providers is a development possibility that mainly concerns large KIBS. However, becoming dependent on

a service provider is a very difficult solution for the client. Thus, if this weak signal becomes strong, it may be one factor that will make smaller, not as strong KIBS, a relevant alternative, i.e. slow down the concentration tendency in the KIBS sector. According to one interviewee, even big multinational clients prefer small KIBS on some occasions, as these service providers can be hired for specific tasks without a commitment to using them always and everywhere - "without a fear that they will capture the whole group of companies".

#### *In-house services as competitors to KIBS on external markets*

The third weak signal that came up in this study is linked with the change in the competitive environment of the KIBS sector. It involves the possibility that client companies do not provide in-house services for themselves only, but undertake to sell them to other client companies. This weak signal is opposite to the one discussed above in the sense that it would mean strengthening of the clients' position in relation to KIBS.

At present, the KIBS companies interviewed considered primarily the firms representing the other KIBS branches and the neighbouring sectors to be their competitors, besides the firms in their own sector. The development of the competitive environment of KIBS in this sense was examined above in the trend analysis in connection with trends depicting convergence and concentration. Besides private expert services and the neighbouring sectors, expert organisations of the public sector providing business consultancy were mentioned as competitors in two interviews. As advisory services of these organisations are cheaper than those of the private sector, partly even free, the matter was discussed in a critical spirit, i.e. the competition distorting effects of development organisations were brought up. On the whole, the problem seemed minor in the light of the interviews of this study and the interviewees did not expect anything drastic to happen either in the future in the division of work between the public and private sectors as regards business guidance. Instead, the weak signal of clients' becoming competitors of KIBS in the expert services market may even considerably change the present competitive situation at least in some KIBS sub-sectors. In this study the idea came up most concretely in the case of accounting services. When stating that major client companies have "big in-house accounting offices", i.e. big accounting departments, one interviewee said to wait with interest "when these start to sell out their services".

In earlier studies the transfer of in-house services to be sold on the market was always connected to a situation in which these services were outsourced. However, it was considered that outsourcing could vary in degree: a separate company can be formed of the services, where the parent company holds the controlling share or in a more far-reaching outsourcing a minority share. Final outsourcing means setting up an independent spin-off. (Howells and Green 1986, 126) Elfring and Baven were among the first researchers who paid attention to direct selling of services from in-house units to "outsiders". While studying engineering services they found out that forming a separate service

subsidiary was not the practice of all firms. (Elfring and Baven 1994, 44-45) It can be thought that the operating model based on direct selling of in-house services is supported by the blurring of the boundaries between manufacturing and services. When traditional industrial companies begin partly to identify themselves as service firms, the question naturally arises of why they would not also sell, besides their industrial products, services that they may have long experience of providing for their own needs. On the other hand, there are many obstacles in the way of such a development possibility. It is particularly problematic that it hampers the identification of and focusing on the firm's core business and core competencies, which today form the cornerstone of business strategies according to the mainstream of both researchers and practitioners (e.g. Prahalad and Hamel 1990).

## 10 STUDY RESULTS II: INNOVATIONS AND LEARNING IN KIBS

The role of KIBS in innovation activities has been a central reason for the interest that has been shown in this sector during recent years (cf. Chapters 6.4 and 6.5). In the present study, too, the notions of the linkages of KIBS to innovation have formed the central theoretical starting point, together with the broader views of the knowledge and learning economy. The methodological basis of this study - the foresight approach - is also tightly linked with the innovation perspective: exploration of promising areas for innovations has been one of the most important aims in foresight (cf. Chapter 1). Thus, besides the strong prospective trends and weak signals, which have mapped out the development prospects of KIBS in general, there are grounds for complementing the study with an analysis that examines KIBS' future specifically from the perspective of innovation.

Indirectly, the theme of innovation already came up in the trend analysis. Outsourcing as a situation which often gives birth to innovations, as well as the need for alerting clients to see changes in their business environment, are examples of interview statements that clearly concern the functioning of KIBS as supporters of the innovativeness of their clients. All in all, the material of the study in hand is not, however, primarily suited to exploration of the innovation facilitation activities of KIBS, because proper examination of this aspect would also call for an interview of the clients, which is not included in this study. Instead, a theme on which the present interview material can shed some light is the development prospects of the KIBS' own innovation activities. Hence the following analysis is restricted to the perspective of innovation *in* KIBS; analysis of the future prospects of innovation *through the use* of KIBS has to be left to further studies (of the dichotomy, see Gallouj 2002, 256). In sub-chapter 10.1 promising new innovation possibilities in the KIBS sector are identified, and in sub-chapter 10.2 the generality of innovation activities in this sector are examined. According to the research design, the connection between innovation activities and know-how is also examined in this context. Sub-chapter 10.3 analyses the development of the learning challenges in KIBS and uses information about the new spheres of skills as a complementary indication of which are important future-oriented activities, i.e. promising innovation areas. Thus this chapter answers to the fifth research question: What types of new innovation activities are emerging in the KIBS sector, how widespread is innovativeness in the sector and what kinds of new know-how and learning requirements does the development impose on KIBS?

### 10.1 Promising topics for future innovations in KIBS

In Chapter 6.1 the central arguments of the so-called broad innovation perspective were presented. This perspective, which is nowadays gaining more

and more ground, emphasises the embedded and recursive nature of innovation, instead of the earlier science-based and linear conception. The interviews made for this study supported the broad view in several respects. They provided examples of the innovation activities inherent in everyday operations of firms, and the more general reflections produced by the interviewees about the nature of innovation activities also showed that a broad view is needed. For instance, the following statement of a representative of the IT sector confirms the observation of recent innovation research according to which the main problem does not often lie in the creation of new insights, but in their implementation: "New ideas are overemphasised in the IT sector. Still, an idea represents only about one per cent of the process of launching a product onto the market and of developing business around it. Pricing, marketing, distribution channels, sales, contract law and management are often bigger bottlenecks than the idea."

One of the central arguments of the broad innovation view concerns the diversity of innovations: besides radical technological inventions, incremental improvements, which are especially typical of the service sectors, are important for progress. The nature of the innovation activities in the service sectors was dealt with in sub-chapter 6.3. It was stated in this connection that the commonly applied divisions into product and process innovations, and further into organisational, market and delivery innovations, are difficult to apply in the service sectors because these innovation types are closely intertwined in services. There are some innovation categorisations that have been developed specifically for the service sectors (e.g. Kuusisto and Meyer 2003, 22), and some categorisations have also been drawn up for innovations in the KIBS sector. Of the latter, the categorisation by Gallouj (2002, 280) is particularly well suited for the purposes of this study. Gallouj divides the innovations in KIBS into three main groups: ad-hoc innovations - new fields of knowledge innovations - and formalisation innovations. The contents of the categories and the theoretical framework of the categorisation were discussed in more detail under sub-chapter 6.4. In the following, those promising new innovation areas in the KIBS sectors, which were brought up by the interviews of this study, will be dealt with on the basis of the categorisation by Gallouj; a summary of these is presented in Table 17. Some of the themes have already been discussed in the trend analysis, and in these cases only the innovation aspect related to the themes will be taken up here. The focus will be on the issues that earlier have only been referred to shortly, or are now under discussion for the first time.

*Ad-hoc innovations* refer to those elements and to that expertise developing in connection with tailored solutions that can be transferred to new situations, even though the solutions as such cannot (Gallouj 2002, 280). The interviews for this study brought up three types of examples of such innovations. The first one is related to situations in which a KIBS firm, that had earlier served one client or one sector, shifts to serve a larger clientele or many sectors; the case may also involve establishment of a KIBS spin-off on the basis of an in-house department of a company. Among the KIBS that participated in this study, there were a number of companies, T-KIBS in particular, that had discovered that

they were capable of applying their tailored service to wider contexts. An example is provided by an IT house, which had originally made enterprise resource planning solutions for travel agencies and had thereafter become a general producer of ERP solutions. In engineering, particularly interesting was the shift to high technology sectors of KIBS that had acquired their expertise in traditional sectors; for example, extension of the activities of a KIBS firm specialised in the planning of spaces which require exceptionally high hygiene from the dairy business to the biotechnology industry.

Table 18: Examples of promising fields for innovations in KIBS according to this study; the categorisation adopted from Gallouj (2002, 280)

Type of innovation	Examples of promising fields for innovation
Ad-hoc innovations: tailored solutions including reproducible elements	<ul style="list-style-type: none"> <li>- extension of activities of KIBS serving one company or one sector to many clients or many sectors</li> <li>- best practice -based activity in new issues, e.g. in IT contract law and intellectual property rights</li> <li>- big, individual service assignments, including much to be learned, e.g. consultation linked with big international acquisitions</li> </ul>
Intentional innovations - type 1: new fields of knowledge innovations	<ul style="list-style-type: none"> <li>- KIBS functions related to technological innovations</li> <li>- new service needs and opportunities based on the development of ICT ("ICT-KIBS", life cycle services, new intermediaries, new functions found at the interfaces of industries, coordination services, service systems)</li> <li>- business-derived innovation areas (integration of value chains, combining local and global ways of thinking, new cooperation models of the public and private sectors)</li> <li>- innovations concerning human behaviour and social factors and their connection to technological innovations (changes in consumer behaviour, man as user of new technology, integration of societal objectives into practical technical solutions)</li> <li>- innovations related to anticipatory and preventive activities (e.g. proactive legal services, management consultancy using futures tools)</li> </ul>
Intentional innovations - type 2: formalisation innovations	<ul style="list-style-type: none"> <li>- innovations concerning the form of services: separation of new services from the existing ones (specialisation, niche areas), combination of services at different levels (packages, solutions), increasing the visibility and "stability" of services (commodification)</li> <li>- innovations concerning the delivery of services, especially the use of the Internet (e.g. electronic transfer and archiving of documents, self service through Internet, opportunities provided by multimedia)</li> <li>- innovations concerning organisation of the client interaction (e.g. developing practical forms of partnership, increasing the know-how of clients in the service use, increasing the commitment of clients to the co-production of the service)</li> <li>- innovations concerning KIBS' internal organisation (e.g. allocation of work according to client industries, organisational implications of the adoption of information technology)</li> </ul>

Activities based on best practices can be regarded as a second type of ad hoc innovations, especially when the case involves the emergence of wholly new kinds of practices. In this study, solutions based on best practices had the most distinct innovative content in the legal services, in which precedents were needed while actual statutes were still lacking, as in services linked with IT contract law and intellectual property rights. The third type of ad-hoc innovations brought up by this study are individual big assignments in which large amounts of knowledge is accrued. The interviewees stressed the significance of big international acquisitions and mergers in particular. Tailored consulting solutions - e.g. services connected with the act of purchase, value appraisements and demanding computational tasks - that non-technological KIBS produce in connection with major acquisitions contribute in an important way to their knowledge base. International assignments bring together experts from different countries, and the broad experience gained can be utilised in future in new service tasks at both the international and the domestic level.

*New fields of knowledge innovations* are the first of the two types of intentional innovations in KIBS, according to Gallouj (2002, 280). In these it is a question of the new service opportunities that the emerging spheres of knowledge in the business environment of KIBS offer. The examples provided by the material of this study can be divided into five main groups: services related to technological innovations, new services enabled by information technology, business-derived innovations, social innovations and new possibilities for anticipatory and preventive activities. General technological innovations and information technology are separated here, because the latter is important in all KIBS sectors, whereas the former concerns the activities of engineering offices in the first place. In the interviews of engineering offices, developing technologies as such were often described as promising new fields of innovation - building automation, control engineering, technologies related to the cleanliness of indoor air, the field bus etc. - without making any particular distinction between the technologies and the related service component, i.e. design and consultancy work.

The innovations enabled by information technology are also related in some KIBS - especially in some firms engaged in the software and telecommunications engineering sectors - almost purely to advancement of the technology itself (in the Table above, these are called "ICT-KIBS"). Technology-based innovation potential was considered important by the interviewed industrial design firms, too; specialisation in virtual technology was mentioned as one promising example. However, many T-KIBS, in addition to the non-technological KIBS, examined the new potential related to ICT from the service point of view, often primarily in this way. In the case of KIBS, a big part of the innovation fields linked with ICTs involves connecting things and issues in a novel way, this novel way being possible due to these technologies. The first example that came up in the interviews was life cycle thinking, which was already dealt with in the trend analysis; engineering offices in particular saw many new opportunities for the application of life cycle thinking. The second



example is provided by the new intermediary functions created within the Internet and mobile services: besides producers of services, there are separately collectors of services and providers of services to clients (cf. Howells 2000, 28). The possibilities for new combinatory services that can be found at the interfaces of different KIBS sectors are the third example. As stated in connection with the convergence trend, ICT development very often lies behind the cross-sectoral combination of services. An illustrative case is a firm interviewed in this study, which had found new business opportunities at the interface of the software and accounting branches. The fourth example is provided by coordination activities; the growing amount of dispersed information continuously increases the need for these activities at different levels. In the coordination within KIBS companies the question is more about a formalisation innovation; this type of innovation will be dealt with later in this sub-chapter. Indications of coordination as a new specialised service were also noted in this study, but at the level of a weak signal only. The fifth and final new service area related to ICT that came up in the interviews of this study concerns development of whole service systems. A case example is provided by a company that strived for such system-level development work in the health care sector. The idea was to develop a service system that by utilising the Internet would combine the data on preventive and medical health care covering the entire human life cycle, and that thereby would enhance the patient's self-treatment and the opportunities for collaboration between all the actors in the health sector. The longer-term target was to use the system also for the monitoring of the quality of care, for information dissemination to the citizens, and for collecting various statistical follow-up data in order to increase proactivity in health care.

The business-based innovation areas important for KIBS also often involve examination of issues in a more comprehensive way than earlier, as well as novel kinds of combinations of issues. Two development features that have relevance also from the viewpoint of innovation were already discussed in the trend analysis. The first one is integration of value chains, which was shown to be important especially for KIBS operating in marketing communications. The second one is linking the global and the local perspectives with each other. In this area, both the very traditional KIBS in financial administration and the newest KIBS operating in the digital media sector saw potential for innovative solutions. A theme that has not been dealt with earlier in the analysis of the empirical material, but that the interviewees also brought up, are the new business models that have emerged, or are emerging, along with the intensifying cooperation between the public and private sectors. Particularly the engineering and architect's offices engaged in community planning emphasised the change taking place in the field of design, when in big projects ordered by the public sector both the implementation, supervision and the long-term maintenance responsibility are being transferred to the private side. The linkage of business-based innovation areas to the advancements of information technology also came up frequently in the interviews. As regards e-business and e-commerce, the interview results complied with the view of rapid progress, which prevailed at the time of carrying out the study. Several interviewees also

underlined the significance of those innovation opportunities that the transfer of the public sector to the "e-world" offers, for example in the fields of public e-services and teledemocracy. Moreover, the interviewees welcomed the possibility provided by ICT of bringing technical engineering and business planning closer to one another in practice, i.e. in the words of one interviewee: "to make up a cost estimate while drawing".

Besides technology and business, the new comprehensive approaches extend more and more often to the third sphere, too: to human behaviour and the functioning of society, the ideas related to these producing social innovations. The need to interconnect all the three above dimensions can be shown e.g. in the statement of a representative of an engineering office, in which he describes the new orientation in manufacturing: "At the take-up stage of the Internet we were living in a situation where integration of the various sub-sectors of technology played a central role. Now we have to go on, to see technology as one sub-sector and integrate the understanding of business and human behaviour into it." Concretely, the area of social innovations was discussed in the interviews from three main viewpoints: changes in consumer behaviour, man as a user of new technology, and the integration of societal objectives into practical technical solutions. KIBS operating in marketing communications talked about consumer behaviour most frequently; one of them described the related changes as follows: "Previously advertisements provided news, but nowadays, when people get information all the time and from everywhere, it is no use trying to carry out this task with advertising. You also have to take into account that today's consumers are consumers of the 'experience economy'; they have left the physical characteristics of products far behind and use uncomfortable things in order to be categorised in a certain way." (cf. Wilenius 2004, 74) Man as user of new technology came up in many interviews of IT firms and engineering offices. As an example can be mentioned discussions on how the use of mobile phones changes people's travel habits and what kinds of needs for change this creates for traffic planning. Innovative solutions that aim to put the goals and norms of society into practice were discussed mainly in connection with technical engineering aiming at ecology and naturalness (cf. Miles 1999b, 9). In energy balance surveys, which the interviewees brought up as one example, the business perspective was also included, besides the technological aspect and that of societal values.

It was already noted in the trend analysis that future-orientedness to some degree is connected with the tightening strategy linkages of KIBS. KIBS aim to get their clients to think about their operations over the longer term, and thereby to preclude problems in advance. Some activities of legal KIBS were mentioned as an example of preventive orientation in connection with trends. In strategy consultancy, a starting point based on visions is often built into the mode of operation. The interviews indicated that in the field of anticipatory activities there are also innovative possibilities for developing tools based on information technology. Software tools related to the "anticipatory accounting" mentioned in the trend analysis are one example. Management software products can be cited as another example; one of the IT firms interviewed for this study was

specialised in these products and the related services. In the firm's products, elements supporting anticipation were scenarios that can be created based on the modelling of business processes, and forecasts that can be drawn up in the budgeting context. At the time of the interview, the company had mainly developed systems for monitoring the internal state of a firm; as part of further development, it planned to include also monitoring and forecasts concerning the external environment and markets.

The second type of intentional innovations in KIBS identified by Gallouj (2002, 280) are *formalisation innovations*. In these, innovativeness does not primarily refer to the content-related novelty of a service, but to those new ideas that are linked with the form of the service and with the mechanisms of the service production, like methods, process and organisation. The present study showed the significance of these kinds of innovations: the interview statements included many examples of the improvements that KIBS had introduced in order to make service products and their production processes more functional. A great part of the examples already came up in the trend analysis, when the developments related to the operating practices and client relations of KIBS were dealt with. In the following, these cases are referred to, but not repeated. The focus here is on searching for different types of formalisation innovations among the examples and on grouping of the examples according to these different types. Four main groups of formalisation innovations can be found in the interview material of this study: innovations concerning the form of services, innovations concerning the delivery of services, innovations concerning organisation of the client interaction and innovations concerning KIBS' internal organisation.

Innovations concerning the form of services can include either the separation of a more specific component of an existing service or, vice versa, the extension of the service content by combining existing services. The third important way of improving the form of a service is to clarify its boundaries, and by that means to increase the visibility and "stability" of the service (cf. Gallouj 2002, 280). The interviews of this study provided examples of all these three kinds of innovations regarding the form of a service. Examples in different KIBS sectors were mentioned in the trend analysis especially in connection with the third and fourth trend - client-specific specialisation and broadening of the service content. KIBS that specialise according to a certain feature of their clients aim to find new innovative possibilities by separating some area, even a niche area, from the existing whole of services and by focusing on it. On the other hand, many innovations in KIBS relate today, and will relate in the near future, to the combination of the services into larger packages and integrated solutions. Commodification and modularisation of services facilitate their combination and are also as such an example of innovative activity clarifying the boundaries of the service. Innovations in the fields of service combinations and commodification are linked to the application of these practices to new services, on one hand, and to the diversification of the concrete implementation methods of these practices, on the other. Some interviewees spontaneously pointed out the innovation perspective in connection with the specialisation, combination and commodification of services. According to a representative of a legal firm:

"innovation in legal services means commodification and standing out on the basis of your know-how". A representative of an R&D service firm described the issue more broadly from the standpoint of the whole KIBS sector: "innovations in expert firms often relate to the ability to clarify services, by commodification for example, and to the ability to apply and combine services depending on each particular situation."

As regards service delivery, most of the promising innovation areas brought up by the interviewees relate, in one way or another, to making the use of the Internet more effective. Some of these concern situations in which delivery forms rather clearly a specific stage in a service process, in some others delivery is closely intertwined with the whole service process. The electronic distribution and archiving of documents needed in the course of the service - different kinds of paperless practices and the related "document hotels" - can be mentioned as an example of the former. In certain KIBS sub-sectors, as in engineering offices and in financial administration services, documentation plays a central role in everyday work. The firms interviewed considered that the basic solutions in electronic distribution and archiving are well advanced, but that the implementation of details will take years and require the solving of many smaller practical problems. One of the firms described the situation as follows: "It will take at least ten years to shift to paperless financial administration. Operating without receipts presupposes that all client companies have a computer and that they have ADP skills. In practice, there are still many small-scale entrepreneurs that have just learned how to use a fax machine. On the other hand, when large companies move over to paperless financial administration, they will not any more accept paper invoices even from their small-scale cooperation partners." Living in this kind of a development phase demands of the KIBS companies themselves creative solutions - incremental innovations - even more than usual. In fact, many firms that participated in this study had made their own "interim applications", by which new opportunities were utilised, but which realistically took into account both the general incompleteness of the solutions and the development rate of the company and that of the clients.

The situation is clearly still more complex in those delivery innovations that are closely intertwined with the whole service process. In the trend analysis, it was already referred to the danger of excessive simplification of issues in the case of self-service provided via the Internet. The interviews showed that there are pressures in the KIBS sector for developing self-service above all in legal and accounting services; in the latter, providing book-keeping as an ASP service has become one noteworthy alternative. Application of the increasing self-service opportunities brought by the Internet requires, however, that in the case of each service it is carefully evaluated whether the client's own competence alone will be enough for using the service or whether the interpretation of an expert would be needed as well. On the other hand, the interviews showed that electronic service delivery should not be considered only from the viewpoint of those problems that the possible know-how deficiencies of clients bring about, but also those new opportunities should be seized that the electronic tools

provide for teaching clients. This point was emphasised in particular by those engineering offices that had been involved with building automation systems. These systems are developing very fast, and as one interviewee put it, they "could do much more", but development must be adapted to the traditionally low educational background of the building maintenance workers. Multimedia-based instruction of maintenance and service has turned out to be one way of giving a clear and sufficiently simple picture of the building services systems.

Innovations concerning organisation of the interplay with the clients focus on the question of how the co-production of services could be carried out even more successfully than before. The present study brought up three key areas of innovation in this context: promotion and concretisation of interaction relationships of the partnership type, improvement of the know-how in using services, and increasing the commitment of the clients to the service process. The first two topics have already been discussed in the trend analysis. When examining the second trend, which describes the tightening of the linkages of KIBS to clients' strategies, it was noted that relationships of the partnership-type are becoming more general between KIBS and their clients. Innovations in this context often concern the practical forms of showing partnership or of building the related trust. One example is KIBS' operation in the client's premises during the service process - a phenomenon also mentioned in the trend analysis. Another example is provided by the framework agreements concerning the service; these can be used especially when a KIBS company has only a few large clients. The second innovation area linked to client relationships - improvement of know-how in the use of services - was referred to in connection with the first trend; this know-how and the related success of the service process were found to be significant for the future growth of the KIBS sector. Here the emergence of meta-KIBS can be regarded as an innovation: KIBS themselves have started to support successful purchases of services by training their clients and by providing planning services for outsourcing. As the development of meta-KIBS is still at quite an initial stage, this area will probably continue to be promising for innovations in the future, too. Besides development of partnership and purchasing know-how, the third innovation area that came up in this study regarding client relationships are the measures by which KIBS aim to enhance the client's input in the service process. Particularly small management consultancy firms with a long operational background stressed the importance of commitment, as it is a prerequisite for the continuation of development on the basis of clients' own initiative after the end of the service process. There also exist some consultancy tools targeted to support this kind of an approach, but according to the interviewees there would still be room for innovations in this area.

The last group of formalisation innovations discerned on the basis of the interviews of the present study are innovations concerning the internal organisation of the KIBS companies. New kinds of work allocation solutions provide one concrete example of this innovation area. Allocation of work according to the client sectors was found in the trend analysis; especially large KIBS were shifting to this system according to the interviews. Thus the trend of

client-specificity has laid the ground for this organisational innovation, in addition to the contribution that it has had to the above-mentioned innovations linked with the form of the service. Another field of organisational innovations brought up by the interviews are the different new solutions that the development of information technology enables and requires in the internal working practices of KIBS companies. In this respect, too, allocation of work is one critical issue. Several interviewees in various KIBS sectors stated that a special challenge in their firm is the fitting together of the work of the "old masters", who are well versed in their work, with that of the "young bloods", who have grown up in the e-world. As in the case of delivery of services, also in the internal arrangements of companies there were different kinds of "interim solutions" that aimed to promote utilisation of information technology, but at the same time realistically took into account the factors slowing down the development. Besides the reduced readiness for change of the older employees, the deficiencies in the IT facilities of the cooperation sectors were mentioned among such factors. These factors had decelerated the take-up of 3D modelling in engineering offices, for instance. In addition to issues related to allocation of work and the development pace, a changeover to electronic practices often demands even more comprehensive re-evaluation of the firm's organisation. Particularly the large consultancy houses underlined that, while KIBS facilitate their clients in organisational development, they also should detect the needs for change in their own organisation: the "e-world cannot be brought in on top of the old organisational structures".

The above analysis has mapped out the promising innovation areas in the KIBS sector in the light of the interviews made for this study. The examples given also provide illustrative material on the various innovation types characteristic of KIBS companies that have been distinguished in the theoretical literature. In the following, the views created in the course of the analysis of the generality of innovation-oriented activity in the different KIBS sub-sectors will be summarised. In addition, it is examined in which ways KIBS in various sectors aim to maintain their innovativeness, and to what extent and how they themselves think about issues related to innovations and innovation activities.

## **10.2 Innovativeness in different KIBS branches**

When entering into the comparison of innovation-oriented activity in various KIBS sectors on the basis of the material of this study, it is once again to be kept in mind that the study is qualitative by nature and focused on leading companies; it does not allow statistical generalisation. From the statistical point of view, the propensity to innovate and the innovation intensity in the different KIBS sectors were examined in Chapter 6.4 on the basis of the literature. However, the material of this study provides the possibility to illustrate innovation activities, not only in the KIBS sector in general, but also in the various KIBS sub-sectors. A preliminary identification of points where sector-

specific differences might be found is possible, too. The forms of manifestation of innovativeness can be examined from three perspectives: innovation outputs, innovation inputs and the significance of the viewpoint of innovation in firms' way of perceiving their operations and environment. A division into the output and input perspectives is common in innovation research (e.g. Kleinknecht 2000, 169); discerning the third perspective is a solution made specifically in this study.

In the preceding sub-chapter innovativeness in KIBS was studied from the output perspective: the fields in which KIBS typically produce innovations and the nature of their innovations were under the spotlight. The study shows that if such a concept and categorisation of innovations are applied that allow for the special characteristics of KIBS as a service industry, examples of different types of innovations can be identified abundantly in all KIBS sub-sectors. No striking sectoral centralisation in innovation activity was perceived. From the viewpoint of the interests of this study, it is especially important that in the case of most innovation types examples could be found equally in non-technological KIBS, which are less studied, and in T-KIBS, whose innovativeness several previous studies have already corroborated. The need to see technological innovations, business innovations and social innovations as a mutually complementing whole offers new innovative potential especially for non-technological KIBS; this need became apparent in the interviews. From the typifications presented in the previous sub-chapter, the following examples can be picked to illustrate individual innovation areas that have a non-technological focus and that are typical of non-technological KIBS:

- innovations emerging in auditing and legal firms when these firms act as consultants in big international acquisitions (ad-hoc innovation)
- social innovations created by marketing communications companies regarding the behaviour of consumers (new fields of knowledge innovation)
- methods by which management consultancy companies aim to increase the commitment of the clients in the service process (formalisation innovation).

A perspective that was not included in the analysis of the previous sub-chapter are the ways in which KIBS attempt to promote creation of innovations and to maintain and develop their innovativeness, i.e. the perspective of innovation inputs. On the basis of the interviews, these inputs can be divided into four main groups:

- R&D activity
- training of personnel
- innovative contacts
- innovation viewpoint included in everyday business activities.

As in earlier studies (cf. Chapter 6.4), in this study, too, separate R&D activities proved to be much more common in T-KIBS than in the non-technological KIBS sectors. Of the engineering companies interviewed, around two thirds, and of the IT companies nearly one half, described either the activities of their product development unit or individual product development projects, or mentioned the share of product development of the personnel or turnover. The shares in some

IT houses were very high: 25 persons of 70 worked in product development in the firm where the share was biggest; of the turnover product development accounted for 10-15% in the firms where it was stressed most. In the non-technological KIBS - legal services, financial administration, marketing communications and management consultancy - typically one interviewed firm in each sector mentioned research and development as a separate activity. Then the case usually involved development projects carried out in cooperation with universities and research institutions.

Training of personnel was very common and wide-scoped in all KIBS sectors. Due to the close link between innovativeness and know-how, training is an important innovation input, but its role deserves a somewhat more detailed analysis. It was noted in this study that a major part of training in KIBS aims at initiation of new personnel and is often connected with different kinds of master-apprentice, tutoring and coaching systems. Particularly the representatives of architectural services, marketing communications and of management consultancy considered these systems to be an integral part of acquiring professional competence together with formal education. Although initiation of new employees has no doubt a role to play in maintaining innovativeness, it is considered important in this study to separate it from training that clearly aims at further development or renewal of activities. Training of the latter type was also found abundantly in KIBS companies - especially in new IT firms on the one hand, and on the other hand in sectors where a clear transition was taking place from traditional statutory activity to more wide-scoped consultative work (legal, accounting and auditing services). Part of the training is organised by firms themselves; the largest KIBS have company universities of their own. Part is purchased from external providers, and professional associations in the KIBS sectors also organise training. Among KIBS participating in this study, training organised by professional associations was especially important in accounting and auditing services.

According to the broad conception of innovation, adopted in this study, the client and cooperation relationships embedded in everyday business activities are as such essential for innovativeness. These innovation inputs will be discussed in the next paragraph, which examines the ways in which KIBS link the striving for innovativeness with their ordinary business operations. The interviews indicated, however, that KIBS also maintain contacts that are expressly intended for developing and renewing activities. In the study in hand, "innovative contacts" have this more limited meaning. There are two kinds of innovative contacts: contacts to universities and research institutions, and contacts to other firms maintained with an eye to developmental work. The contacts to universities and research institutions are often connected with R&D and are therefore common in T-KIBS - in this respect the present study confirmed the observation made in earlier studies (Leiponen 2001, 110-111; Kautonen 2001, 41). R&D contacts vary in T-KIBS from contacts related to individual development projects to established cooperation relationships. Of the latter, an example is provided by an IT firm that had applied the traditional linear innovation model: the firm had been set up on the basis of university research in



linguistics, when possibilities for developing commercial software applications had emerged. The contact to the university was still continuing at the time of the interview. The few university contacts of non-technological KIBS included - besides the earlier mentioned development projects - lectures, whose mutual benefits the interviewees emphasised: the representatives of firms provide information to students, and at the same time they themselves get an impression of the thoughts of young people, which is important for understanding the future. Contacts maintained with other firms specifically for the purpose of developing and renewing refer to horizontal networks outside the actual business activities. According to the interviews, participation in these kinds of networks was common in all KIBS sectors. There are networks at both the national and the international level, and they vary from regular, most often profession-specific, club activities to fully informal "business fraternity". The significance of the latter in creating an innovative culture was emphasised in the IT sector in particular.

Linking the viewpoint of innovation to everyday business is a complex issue and can be achieved in multiple ways. Based on the interviews of this study, three practical examples can be raised to illustrate it. The first example is provided by companies that consciously aim to specialise in new topics and thus "force" themselves to be innovative. In the interviews, such firms were found in all KIBS sectors, both in the new and traditional sectors, as well as in the technological and non-technological ones. The following quotation from a representative of a legal firm depicts this orientation: "Our firm has always tried to be there where something new is going on. At present we have concentrated especially on corporate arrangements and the new types of contracts related to information technology; such contracts are for example those between a service provider and an operator, hosting-contracts and contracts related to e-commerce." The second example is provided by firms that consistently consider their client and cooperation contacts from the standpoint of learning, and develop their operating model so that it supports this orientation. The following comment of a personnel training company illustrates this case: "Our operating model is that first we study new topics within our firm - at present e-learning, for example - and then we apply new material and methods in our client contacts, first in pilots, and later regularly." The third example is provided by companies that have made specific organisational arrangements inside the company in order to promote learning. The meaning of these is conveyed by the interview statement of a "big five" -company: "In development of know-how the share of personnel training is only minor; it is first of all a question of organising the work so that it supports continuous learning." The following description of a marketing communications company illustrates the many ways in which learning can be supported by internal arrangements: "In our company, we use one third of time for studying new things. In order to develop our personnel, we operate in many fields, both in the field of professional skills and in the field of more general skills, like skills concerning acquisition and management of information. Participation in domestic and international seminars is active. Sharing of information, sparring and doing things together play a central role. We have a rewarding system as regards information sharing, a databank for seminar

presentations, morning meetings where we discuss experiences gained in cases, etc.” At the same time as support systems for learning were underlined in the interviews, readiness to learn was demanded of the personnel: very many interviewees in the various KIBS sectors stressed the importance of self-study, active follow-up of topical issues and active gathering of relevant information.

The above examples and typifications of innovation outputs and inputs are interpretations, which the researcher has “raised” from the interview material and analysed on the basis of innovation and KIBS theories. These interpretations should still be supplemented with an analysis of the extent to which KIBS themselves explicitly consider their activities and environment from the innovation perspective. The first question related to this is how KIBS talk about issues connected with innovativeness. As already stated earlier, the firms interviewed only seldom used innovation terminology. Instead, they used words like “raising quality”, “development activities”, “inputs in learning”, “seeing new tendencies”, “renewal”, “readiness to change”, “keeping abreast with the change”, “creativity” and “unprejudiced thinking” (cf. Sundbo and Gallouj 2000, 45)<sup>104</sup>. The terminology used also included some interesting differences between sectors. The marketing communications agencies emphasised creativity clearly more than the other sectors; law firms in particular talked about renewal, and financial administration firms about keeping up with change.

Another interesting question is the level at which KIBS examine the innovation topic: from the viewpoint of their own company, or also more generally as a factor affecting the competitiveness of their sector or the economy as a whole. The interviews showed that all the participating firms discussed, in one way or another, the innovativeness of their own firm - if the broader terminology described in the former paragraph is accepted as the starting point. A few companies in each sector mentioned innovativeness as a central strategy of their firm. Similarly, a few companies in each sector dealt with the general significance of innovation activities in the economy. The new challenges posed by the development of the information society and the importance of lifelong learning were the most common themes in the context of which this general viewpoint was brought up. Analysis of the nature of innovation activities in one’s own sector, and evaluation of the sector’s innovativeness and innovation challenges were clearly more common than discussions on the level of economy as a whole. Interview statements concerning the nature of innovation activities in various KIBS sectors have been presented all along above; hence, only the standpoint of innovation challenges is raised here. The general situation regarding innovativeness in one’s own sector was discussed most often by engineering offices, on the one hand, and by accounting and auditing companies, on the other. Both were concerned about the innovativeness of their sector, but in somewhat different ways. In the accounting and auditing branches, the concern was about the real situation, unwillingness to develop, and “a sense of laggardliness” in some of the offices. In the engineering

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<sup>104</sup> Many of these words and phrases belong to the basic terminology of the discipline of business administration. Business professionals have often adopted them already during university studies, which may be one reason for their wide use.

branches the interviewees were more concerned about the traditional image of the sector, which does not correspond to the real situation, but diminishes the job seeking of the youth in this sector. For instance, heating, plumbing and ventilation engineering is in the minds of young people still an unpopular sector - "the engineering of sewage pipes"; the development of building automation and other high-technology solutions is known inside the sector only.

Some of the interviewees also analysed the means to promote innovativeness in their sector. The means mainly concerned development of training, and they will be discussed in the next sub-chapter in connection with the skills needs. Some interviewees had made personal inputs, too, in promoting innovativeness in their sector, for instance by participating in the activities of various associations and through university cooperation referred to above. Finally, it must be noted that even when the interviewed firms analysed innovation issues from a perspective wider than that of their own firm, they seldom thought about the different expert sectors as a whole. As stated earlier, the concept of KIBS was new to the interviewees, but it aroused interest. When the idea of KIBS came up in the discussion, the professional associations were most often the ones who seized this perspective and analysed their own sector in comparison to the general role which KIBS have been suggested to play in innovation. One interesting point that came up in these analyses, and was already mentioned in the trend analysis, was that belonging to the KIBS sector does not as such make an individual company a KIBS in the strict sense of the word. The point is well depicted in an interview statement of a professional association in engineering services: "There are three kinds of engineering offices - drawing offices, genuine design and planning offices and genuine expert firms. There is lots of routine engineering, but also other, more demanding work."

### **10.3 Challenges to the development of expertise**

Although the linkages between innovation and learning have received a strong emphasis in recent years both in general innovation studies and in the literature on services and KIBS, more detailed research concerning the development of know-how and skills requirements in KIBS is lacking. Similarly, categorisations that could be used in examination of the different fields of expertise in this sector are scarce. Most of the existing categorisations are useful in throwing light on certain issues related to know-how, but they are not sufficiently comprehensive when the aim is to map out the development of skills needs as a whole. An example is provided by the division between functional and application capabilities, which Elfring and Baven (1994, 47) have made in their study targeted to the development of engineering services. This dichotomy focuses on the description of the difference between the special expertise linked with the service provider's own professional field (functional capability) and the knowledge needed about client industries (application capability). The interviews made for this study confirmed that these two dimensions of know-

how are important, but they also brought up other capabilities that are essential from the viewpoint of KIBS' future.

In his study of the determinants of service capability in manufacturing, Kuusisto (2000, 167) has made a categorisation where service activity has been divided into three hierarchical levels: the business level, the production process level and the personal interaction level. This categorisation serves well as a basic outline also when the scope of analysis is know-how required from KIBS. Kuusisto has, however, developed his categorisation in the manufacturing framework and primarily for the examination of the nature of service activity, not for the analysis of skills requirements. When this categorisation is transferred to the KIBS framework and used specifically for mapping the central areas of skills, the terminology used must be adapted to suit the service sector, and the perspective of know-how and skills has to be brought to the fore. The more detailed sub-grouping has to be done in a new way, starting from the characteristics of KIBS. In this study, such a sub-grouping has been made on the basis of empirical material. As stated in Chapter 8.2.3, the interviewees not only listed individual skills, but they also discussed about how the individual skills should be grouped together in order to identify the central fields of expertise. The sub-grouping has been made by utilising these views. By modifying Kuusisto's categorisation and by supplementing it with new sub-groups in the way described above, the following division of the skill areas in KIBS has been produced:

- skills needed at the business level: understanding the basics of economy and business, understanding the on-going changes, combining of expertise and entrepreneurship, overall management of one's own value chain
- skills needed at the service process level: mastering the contents and methodology of one's own profession, know-how concerning client industries, skills needed in the management of actual service processes
- skills needed at the personal interaction level: marketing and sales skills, cooperation skills, social and personal skills.

As the present study is a foresight study, the changes happening are under the spotlight also in the case of know-how, i.e. the essential question is to what extent and how the various skill areas are changing in the KIBS sector. Thus in the examination which follows, two kinds of elements in the above-mentioned skill areas are differentiated on the basis of the interviews: the elements that have already earlier been important and seem to remain so in the future, and the new elements with growing significance. A summary of the results is presented in Table 19; in the following they are analysed in slightly more detail.

*Business level skills* concern general knowledge of economy and business and the ability to see one's own business as part of a larger whole. On the basis of this study, the general knowledge of economy and business can be divided into mastering of the facts concerning the basic regularities of business, and into the ability to recognise changes that are taking place. In the current situation, these two fields of competence are strongly linked with each other. Many interviewees underlined the necessity to adopt a new kind of business logic, brought by the

global networking economy and characterised by features like openness, quick reactions and constant change. On the other hand, the interviewees were also worried about the swearing in the name of the "new economy": it often results in neglecting the study of business basics as something which belongs to the realm of the "old economy". However, without this knowledge the new operating models cannot be utilised in a sustained manner. Combining the old and the new, and discerning real changes from seeming ones, were considered important skills. Extending the analysis of changes from the present to the future, i.e. the development of anticipatory abilities, was seen to be a growing challenge. Particularly in engineering and in management consultancy, the need for foresight training was brought up: only the largest international companies are nowadays engaged in foresight; the smaller ones lack systematic methodology that would allow tackling futures issues.

Table 19: Lasting elements and on-going changes in the central skill areas of KIBS according to this study; the three main categories adopted from Kuusisto (2000, 47)

Area of skills	Lasting elements	New elements
<b>Business level</b>		
understanding the basics of economy and business	much unchanged in the basics of business	new business models of the global networking economy
understanding the on-going changes	differentiating real changes from apparent ones	growing need for anticipatory abilities
combining of expertise and entrepreneurship	a difficult skill that has always been required from KIBS	"entrepreneurial spirit" is increasingly required
overall management of one's own value chain	positioning of one's business in the whole	more complex value chains, need for systematic integration
<b>Service process level</b>		
mastering the contents and methods of one's own profession	mastering one's own profession is the core of KIBS' activities	deepening and broadening of expertise; balance between contents and methods
know-how concerning client industries	knowledge of the client sectors has always been required to some degree	systematic information gathering about clients' sectors
skills needed in the management of actual service processes	planning, coordination and administrative skills; project management skills	planning of service processes grows in importance - numbers of actors, fastening cycles
<b>Personal interaction level</b>		
marketing and sales skills	sales skills in particular are important at this level	there are still deficiencies in practical sales skills
cooperation skills	skills regarding cooperation with clients, other KIBS and other stakeholders	partnering, networking, and expectations placed in KIBS highlight cooperation skills
social and personal skills	e.g. ability to utilise one's skills in a versatile way, social sensitivity	e.g. mastering of one's own work in the midst of changes, ability to encourage others

The ability to see one's own business in a larger context also includes two areas of skills: combining expertise and entrepreneurship, and knowing and managing one's own value chain. The latter has already been discussed on several occasions and the on-going changes have been brought up. The increasing complexity of value chains as well as their expansion, which often means some international linkages, are important changes from the viewpoint of skills requirements and demand a more determined integration of the chain. Part of the increasing complexity is the growth of the number of different actors; this will be discussed further when analysing the skills needed at the level of the practical service process. The second skills area connected with the overall command of one's own business is combining of expertise and entrepreneurship. Attention has already been paid in earlier studies to the fact that it is a question of combining two very different, partly even opposite, orientations (Sveiby and Risling 1986, 49-51; Tordoir 1995, 2). When a professional sets up a business, the rationale behind the establishment is usually a deep interest in the substance itself, and not "entrepreneurial spirit". In the interviews of the present study, this attitude became evident both in the work of architects, with tens of years of work history, and in the work of software specialists who had just started operations. The secondary role played by entrepreneurial spirit often means that there are little pre-existing entrepreneurial skills, and developing these skills is not sufficiently emphasised either. On the other hand, the interviewees pointed out that there is also little information available on the specific issues of managing an expert firm; these issues have become a research topic only recently. At the same time, the challenges are increasing: along with the lowering of organisational hierarchies, entrepreneurial spirit is required also from other experts, besides the management. The interviews indicated that the related orientation towards marketing and selling is a difficult issue e.g. in engineering offices and in legal and accounting services, in which the attitude has been that "work that is well done also sells itself".

At the *service process level*, important areas of skills are mastering of the content and methods of one's own profession, knowledge of the client sectors, and know-how related to carrying out the service process in practice. Mastering of the content and methods of one's own profession is that skill area on which the whole activity of KIBS is based. The interviews showed that important new, partly contradictory, requirements have emerged in this area. On the one hand, deeper knowledge and specialisation in some sub-sector are required regarding one's professional core competence. On the other hand, along with the broadening of the service contents and convergence of the KIBS sectors, the demand for horizontal, multidisciplinary expertise is becoming more pronounced. The concern that one development need becomes tramped on by the other was brought up in many interviews. Some respondents considered deepening of one's own professional knowledge less problematic and horizontal expertise a greater challenge. These respondents argued that barriers between different scientific fields are still high and the ability to combine expertise of different professions is deficient; considerable increase in interdisciplinary education was desired. On the other hand, an opposite problem also came up:

it was feared that unclearly defined multidisciplinary brings with it the danger of deterioration of core competence. The following interview statement illustrates this fear: "Graduates in the new sectors, such as environmental technology, receive in their training information from here and there, but nothing in depth, which leads to intellectualised daydreaming." In addition to the issue of deep vs. broad knowledge, mastering one's own profession also includes another aspect which requires careful balancing: knowledge of the content vs. knowledge of methods and tools. In all KIBS sectors, IT skills have risen to an important role, and according to the interviews this has in some parts led to excessive focusing on methods. As a representative of an engineering office put it: "Education should include more teaching of professional basic skills, not only Java coding. Training should also be given away from IT, for field work."

The importance of knowledge of the client sectors already came up in the trend analysis; the third strong prospective trend, i.e. specialisation according to clients, reflects the increasing significance of this area of skills. However, the issue is broader. Knowledge of the client sectors is needed to some extent also when actual specialisation is not at issue. The interviews showed that KIBS use three main ways in acquiring knowledge of clients: monitoring the development of the client sectors on the basis of written material, placing their employees for a fixed period of time in the client companies to take a closer view of them, and recruiting persons who have worked in the client sectors.

In the practical implementation of the service process, various management skills, like planning and coordination capabilities, are important. Administrative know-how supporting the processes also plays a key role. Furthermore, much of project-type work is done in KIBS, and the know-how related to this - know-how in project working and in project management - came up as a central requirement in many interviews. An important new challenge for skills related to the implementation of the service process emerges from the diversification and complexification of value chains: more actors and new kinds of actors are participating in the processes. For instance, the highlighted role of the end-user and the new forms of cooperation between the public and private sector have already been referred to. Another important challenge is linked to the changes that the advancement of technology causes in work processes. These, too, have been dealt with above when discussing the service processes based on IT applications and the adoption of IT-tools among KIBS and among their clients. Besides IT, the improvement of the efficiency of other technologies, too, changes the work processes of the clients and causes corresponding changes in the design of these processes. For example, the engineering and architect's offices pointed out the changes that more efficient construction has brought about: design and the site phase have changed from consecutive processes into parallel ones. All the challenges described above are well crystallised in the statement of one interviewee: "Earlier we designed products and processes; nowadays it is all the more important to also design the design process itself."

When mapping weak signals, one development possibility was found to be that coordination of KIBS' services develops into a special field of its own. If such a

development is realised, a partly new kind of work division emerges in the KIBS sector, and along with it a new kind of differentiation as regards skills at the service process level. It could be thought that as the coordinating KIBS take care of the horizontal combining of services and adjust them to the client's needs, the other small and medium-sized KIBS can focus more on their specific professional expertise. The coordinating KIBS are required, instead of deepening their profession-specific knowledge, to possess strong skills in three other areas (cf. Bragg 1998, 354-355). The first is competence of "know who" and "know where" -type: the ability to recognise the potential clients for different KIBS and, correspondingly, the ability to recognise the KIBS that can meet the needs of different clients. The second is strong integration capacity, the ability to combine individual services into appropriate wholes. The third is marketing and sales know-how, the lack of which was found above to be a problem characteristic of the KIBS sector, together with the lack of other general entrepreneurial skills. KIBS specialising in marketing and sales skills could make the situation easier, but it cannot be expected that the other KIBS could in this way wholly avoid the challenge concerning the development of this skills area.

Service skills at the *personal interaction level* include, on the one hand, skills closely connected with professional basic expertise, and on the other hand, general personal and social capabilities. Of the former, above all the sales skills and cooperation skills were emphasised in the interviews as important for KIBS. Thus the significance of marketing and sales came up on all skill levels; on the personal interaction level the importance of practical sales skills was especially stressed. The know-how deficiencies, which were much discussed in this context, may, however, partly reflect national characteristics: the lack of marketing and sales skills has been demonstrated to be a general problem in Finnish enterprises especially in the SME sector. Cooperation skills are crucial from the viewpoint of the basic role of KIBS and of the changes that are going on in this role. These skills are required both in the co-production of services together with the clients, in the horizontal cooperation between different KIBS, and in the brokering activity which has been considered to be one important function of KIBS (cf. Chapter 6.5). New challenges for cooperation skills are emerging in all the three respects. In client relationships the challenge is the change of these relationships into partnerships requiring deep trust. In cooperation between KIBS, the challenge is the mastery of flexible network-type relationships. In the brokering activity, i.e. promotion of the connections between various actors, the challenge is the expectations towards KIBS as an important node in the innovation systems. In all three points, the challenge is made still more substantial by the international linkages that the cooperation more and more often includes.

Personal and social skills are skill areas that are to a great extent based on values, attitudes and ways of action gradually developing along with one's life history. It is difficult to achieve rapid effects in this area of skills by means of education and training, because the area has not much to do with facts and know-how that can be acquired with systematic learning methods. (cf. Schienstock 1999, 38) The interviewees of this study emphasised in personal



skills first and foremost the willingness to learn and the willingness to use one's abilities in versatile ways. With the words of one interviewee: "No matter how extensive knowledge you have gathered - if you do not get it out of yourself, it is of no use." Personal skills related to the overall management of one's own work are becoming more and more important. The interviewees emphasised the ability to bear the flood of information, the ability to concentrate on the essentials, preparedness and planning skills, and flexibility and adaptation to quickly changing situations. Social skills are closely linked with cooperation skills, but they also include sub-sectors that - like personal skills - are difficult to teach. As examples of such skills, social sensitivity and the ability to encourage others can be mentioned; the growing importance of the latter was especially underlined in the interviews. The following quotation describes these skill areas: "The ability to get along with other experts, representing different sectors and schools, is often a more critical factor than professional competence. As work is increasingly team work by nature, even perfect performance of one's own is not enough - the ability to encourage others for common good performance is decisive." The importance of personal and social skills, taken as a whole, is crystallised in the following statement by a representative of a "big five" - company: "In expert work, developing as a human being is important. An expert's sophistry with his own knowledge hardly benefits the client."

All in all, the interviews showed that although KIBS function in many different fields of expertise and their competence naturally has a core related to their own field, the skills required of them also have much in common. The convergence trend detected in the trend analysis still strengthens the common base of skills. The concept of "a horizontal learning community" has been used in innovation research to describe the networking of experts on the basis of similar know-how. "Vertical learning communities" for their part are focused on the development of products or processes having similar functions (Kuusi 1999b, 159). Rather limited, often profession-specific, communities of experts, for instance communities of designers, marketers, educators and financiers, have usually been examined as horizontal learning communities (ibid., 160). In the light of this study, it seems, however, justified to analyse the KIBS sector as a whole, too, on the basis of the concept of a learning community. The analysis above shows that reconciling opposite development needs is one challenge common to the different KIBS sectors: you have to understand both the "old" and the "new" economy; you must be capable of combining entrepreneurship and expertise; you have to develop your expertise both deeper and broader; you have to master both the contents and the tools; and you have to increase knowledge both on your own profession and on the client sectors. In terms of creation of innovations, the analysis of skills needs emphasises particularly development of business-derived innovation areas, for instance understanding of new business models. The significance of formalisation innovations also became stressed in the examination of skills: among others, know-how regarding the planning of the service processes, where an increasing number of stakeholders are taking part, requires an innovative orientation.

## 11 SUMMARY AND CONCLUSIONS

### 11.1 The scope and conduct of the study

The purpose of this study was to examine the long-term development and future prospects of knowledge-intensive business services (KIBS). In recent years, KIBS have aroused broad interest, because they have been argued to be highly important as supporters of other sectors, especially as facilitators of the innovation activities of companies and as disseminators of innovations. Studies indicate that KIBS companies themselves are innovative, too; in fact, the KIBS sector has been found to be one of the most innovative sub-sectors within the services.

This study belongs to the field of futures studies and is based on the so-called foresight approach. Instead of predicting the most probable development track, this approach emphasises that there are many possible futures and many paths leading to them. Creating views of these different possibilities forms the essence of futures studies and enables people to prepare for several alternatives and to “make the future”. The standpoint of foresight is made reasonable by the fact that the certainty of information is in any case decisively weaker as regards the future than when studying either the past or the present. On the other hand, even a slight increase in understanding in which direction the development is going is invaluable, which in turn means that the relevance of information is an important criterion for successful futures studies.

It does not follow from what was said above that the basic requirements of scientific research could be neglected when studying the future. Thus the guiding principle in this study has been that practices well established in science are applied as far as possible in both theoretical analyses and in collection and interpretation of empirical material. This has meant above all three things. Firstly, when defining the central concepts used, the starting point has been the definitions prevailing in the relevant scientific communities - communities of futures studies and KIBS research. In addition, each concept has been further specified, and a detailed description has been given about the operationalisation of the concepts. Secondly, the futures analyses in this study are based on an in-depth examination of long-term historical development. Thirdly, the acquisition of empirical material was founded on the theoretical background, and while collecting the material, reliability and validity were considered at each stage. In addition, accurate description of the nature and analysis of the material has been aimed at, including the presentation of the ways in which the conclusions have been made based on it; the problematic aspects of the material have also been raised to allow critical evaluation.

The most central concept in the study in hand is the concept of KIBS. Specifying the earlier definitions, it has been defined in this context as follows: *KIBS are business service companies, i.e. private service companies which sell their services on markets and direct their service activities to other companies*

or to the public sector. They are specialised in knowledge-intensive services, which means that the core of their service is contribution to the knowledge processes of their clients, and which is reflected in the exceptionally high proportion of experts from different scientific branches in their personnel. The operationalisation of KIBS has been made on the basis of the standard industrial classification. By using the most accurate level of this classification, the categories in which the degree of expert labour is especially high have been included from the category of business services. The following categories have been included: computer and related activities; R&D services; legal, financial and management consultancy; advertising and marketing services; technical services; labour recruitment services; training in the private sector. Other researchers, too, have been largely unanimous in counting these industrial categories among KIBS.

The analysis of the future development of KIBS has been built on three concepts: *driving forces*, *strong prospective trends* and *weak signals*. In the concept system of futures studies, driving forces refer to the most central phenomena prevailing in society at a certain point of time. A trend is the general direction found in the long-term development of the phenomenon studied, and a weak signal is the first indication of such a change which will be, if it is realised, of crucial significance. In this study, the concept of trend has been refined into the form of *strong prospective trend*. With the first attribute - strong - the examination is restricted to the most significant and probable developments. The second specification - prospective - emphasises the future-oriented nature of the trends sought for. These kinds of trends cannot be examined as a direct continuum to past development, and information concerning them differs by nature from information depicting past development. The concept of driving forces is used in this study for the analysis of those phenomena at the level of the entire economy that constitute the essential framework for the future development of KIBS. The concepts of strong prospective trends and weak signals are used to outline the internal development of KIBS: the main lines of future development on the one hand, and unexpected outturns on the other.

Due to the different nature of historical and future information, this study has been divided into two separate parts. It is based on five research questions, the first two relating to the historical part and the last three to the future part. The historical part examines firstly the long-term development of KIBS and the factors that have influenced this development. Secondly, the role of KIBS in today's economy has been analysed, especially in terms of innovation activities - a theme that constitutes the core of KIBS research. Also in the future part of the study, the innovation activities and the related development of know-how in KIBS have been addressed, besides the afore-mentioned driving forces, strong prospective trends and weak signals. The questions on which this study has been based are the following:

- Q1: *How have KIBS developed quantitatively and qualitatively, i.e. in terms of their nature and role, in the long-term and with which kinds of general developmental phenomena in the economy and society has their development been associated?*

- Q2: *What is KIBS' role today in the economy and society especially in view of innovation activities?*
- Q3: *What are those driving forces in today's economy that can be expected to be the most crucial for shaping the futures of KIBS, and what kinds of starting points do these driving forces offer for the future development of KIBS?*
- Q4: *What kinds of strong prospective trends and weak signals can be found in the development of KIBS?*
- Q5: *What types of new innovation activities are emerging in the KIBS sector, how widespread is innovativeness in the sector and what kinds of new know-how and learning requirements does the development impose on KIBS?*

The historical part of the study is based on statistics and literature analysis, the future part mainly on interviews of experts. However, the analysis of the driving forces has been conducted on the basis of the literature. Also elsewhere in the futures analyses, literature has been used as reference material, which has supported the finding of linkages between the past, the present and the future. In the interviews, representatives of the Finnish KIBS sector were used as informants; the sample was collected from the companies at the leading edge in the sector. Before the company visits, interviews of professional associations were conducted. The nomination of the companies was preliminarily made in this connection, and the sample was supplemented by the so-called snowball sampling method. The number of interviews was 97 (87 companies and 10 professional associations). The sample covered all the central KIBS sub-branches; versatility in the size, age and geographical location of companies was also an aim in the sampling. Semi-structured face-to-face interviews, i.e. interviews based on broad themes, were chosen as the method of collecting futures information. The advantages and challenges included in the use of experts as a source of futures information, and interviewing as a foresight tool, have been discussed in the study.

## **11.2 The main results of the study**

The long-time historical survey based on the *first research question* shows that most knowledge-intensive business services emerged as independent industries along with the Industrial Revolution. As occupations, many of them, however, date back for hundreds, even thousands, of years - accountants provide an example of an old KIBS profession. The history of services linked with information technology is clearly shorter than the history of the other KIBS sectors. Due to lack of statistical data, the examination of the growth of KIBS has had to be based mainly on all business services, and partly on an even broader category of producer services. The results indicate that producer services had grown into an important industry by the beginning of the 1960s. Since the beginning of the 1970s, they have grown distinctly faster than the

economy on average. The growth has been high in all advanced economies, yet there are considerable differences in the growth rate by country. Statistics depicting expressly the KIBS sectors are available from only a few countries since the latter half of the 1990s. These statistics, too, show country-specific variation in the growth of both the KIBS sector as a whole and of the individual KIBS branches; similarly, the share of KIBS in the entire economy and total employment varies by country.

Studies on the underlying reasons for the rapid growth of producer and business services, as well as on the nature of these services, have been conducted since the 1960s. Exploration of this literature brought up three important findings. Firstly, it turned out that many themes which today are at the core of KIBS research were already discussed in a preliminary form even in the earliest studies made on producer services. Among such themes are the significance of knowledge in raising productivity, and the central role of knowledge and expertise in producer services. In some studies it was proposed that business spending in producer services should be considered as investment in knowledge and thereby as investment in productivity. In fact, the idea of KIBS as an especially important part of producer services can also be found in the earliest studies: even though the term "KIBS" was not yet in use, references were already made to certain specifically dynamic elements inside the producer services in the 1960s.

The second important result concerns the role of outsourcing as a factor explaining the growth of business services. In the 1980s in particular, the genuineness of this growth was questioned by arguing that it only involved a shift of earlier in-house activities to independent firms. However, empirical studies showed that a displacement of in-house services in connection with the growth of producer services industries, which the argument above would presume, had not occurred. Instead, growth had been achieved in internal and external services simultaneously; several researchers even found that these two types of services support each other. On the basis of the long-term survey made in this study, there is also reason to emphasise that the external provision of KIBS is not a new invention. Some services did originally develop internally and have later been outsourced, but in others the internal and external way of provision developed in parallel, and again in others external expert companies were the original way of providing the service. Of the last mentioned case, R&D services stand as an example; internalisation of these services was in its time an important innovation.

The third finding arising from the historical survey is the strengthening of the role of business services as independent industries - earlier they were considered mainly branches auxiliary to manufacturing. Studies that have proved that the relationship between manufacturing and producer services shows mutual interaction, not one-sided dependence of services on manufacturing, have occupied an important position in this respect. The emergence of the new view has also been supported by studies that have stressed the contribution of business services to the economy as a whole -

besides manufacturing, to other services and to the public sector. Since the end of the 1980s, the growth of producer and business services has most often been analysed in terms of growing demand, this demand being based on the real and increasing needs for expertise that derive from the continuous progress of division of labour. Considering the business services as independent industries has also meant the rousing of interest, not only in the demand factors, but also in the supply side and in the internal development features of these services.

Examination of the *second research question*, the current role of KIBS, crystallises the arguments that form the theoretical basis of this study. The core of these arguments is that the contribution of the business services to the economy is largely realised through support to innovation activities. The majority of all business services are constituted by the sub-sectors based on expert activities, i.e. KIBS, which play an important role in the innovation activities of the information society. KIBS as a specific group within business services were discerned and defined in the mid-1990s. In this connection, defining the concept of knowledge-intensity itself was essential. In the definition, the difference between information and knowledge, and the close relation of knowledge to learning, were underlined. The attribute of knowledge-*intensity* refers to the central position that learning occupies in KIBS, both in their internal activities and in their client relationships. Concerning the latter, the co-production of services together with the client, which is typical of KIBS' activities, supports the learning of both parties. The contribution of KIBS for innovation activities derives just from this strong emphasis on learning.

This study has provided two kinds of results as regards the current role of KIBS. On the one hand, an overall picture of what is so far known of KIBS' innovation activities has been built by collecting findings of previous studies. On the other hand, it has been demonstrated that the emergence of insights about the innovation linkages of KIBS has been closely intertwined with the development of the theory of innovation itself. The studies on the innovation activities of KIBS can be divided into two main groups: studies that have analysed KIBS as sources of innovations, and studies that have analysed KIBS as facilitators of their clients' innovations and as a part of innovation systems. The main part of research into KIBS as innovators has investigated technology-based KIBS (T-KIBS). There are, however, suggestions of high innovation investments also in non-technological KIBS, in the form of expenditure both on staff training and on R&D. The significance of KIBS in innovation systems stems from their numerous and versatile contacts with different stakeholders, a fact confirmed by several empirical studies. On this basis it has been suggested that KIBS act as important carriers of innovations and as nodes in a system of customers, co-operation partners, public institutions and R&D establishments. Detailed analyses about the nature of the brokering functions of KIBS are, however, in their initial stages.

In innovation research, three approaches have contributed to the perception of the KIBS' role: the new conception of the nature of innovation activity,

innovation systems approach and research into service innovations. Regarding the nature of innovation, an essential change has been the changeover from stressing R&D activities and radical technological inventions to a broader perspective which also takes into account incremental innovations created in everyday business life. The innovation systems approach has underlined the importance of external linkages to innovative success and the importance of innovation diffusion together with innovation creation. Studies on service innovations have confirmed the versatility of innovation sources and of patterns of innovation. While these new perspectives have been an essential prerequisite for understanding the nature and meaning of KIBS, KIBS research has, reciprocally, supported the new views. KIBS have provided practical examples of service innovations, innovation activities in everyday business life, of the interconnection between innovation and learning, and of the functioning of the innovation systems.

The *third research question* concerns wider societal driving forces that exercise an important influence on the further development of KIBS. Along with this question, the study moves on from history and the present day to the future. As it is primarily the connection with the production of new knowledge and innovation activities that makes KIBS an important part of the economy, the scope in the search for driving forces was restricted to knowledge-related phenomena, i.e. to phenomena that are associated with changes in the role of knowledge and in the ways of producing knowledge. The study identified the three following driving forces as particularly relevant for KIBS: the development of information and communication technologies (ICTs), networking and new business models, and the globalisation of the economy. These development factors are nowadays considered essential driving forces in the literature of the overall societal change, and the latest KIBS research emphasises the exploration of the relationship between these very phenomena and KIBS.

The study analysed separately the nature of each of the three driving forces and the directions in which each of them are taking the future development of KIBS. In the development of ICTs, especially essential for KIBS are the changes that these technologies have brought about, and will do so, in the information markets. The study revealed four central changes: growing challenges regarding the location and interpretation of relevant information, increasing importance of tacit knowledge, new possibilities of combining external and intra-organisational knowledge, and the enhancement of the tradability of information and the emergence of real-time information markets. These changes favour both the diffusion of the demand for KIBS, the supply of KIBS and the creation of a proper market for these services. The core of expertise of some KIBS sectors is directly connected to the new information technology. As regards the second driving force, the new business models, an important change is that the client has been raised to the centre of strategy, and increasing value offerings and value innovations is a central aim of advanced firms. This kind of an approach, which means that the final demand of the client is the focus instead of the provision of individual goods and services, necessarily demands network-based operational practices. The new business models have impacts both on

KIBS' own behaviour and on the behaviour of their clients. Understanding these changes and the ability to apply them both in own activities and in client relations will be a major future challenge for KIBS. The third driving force, globalisation, is important for KIBS firstly as a factor indirectly supporting quantitative growth in the sector: according to the basic arguments of innovation and KIBS research, globalisation increases competition and the need for continuous innovation; along with this, the need for services supporting innovation activities can also be expected to grow. Globalisation also puts pressure on KIBS firms themselves to internationalise. At the same time, both the internationalisation processes and the modes of international operations have become more and more diversified in KIBS. The relationship between internationalisation and innovation is becoming all the more important; the functioning of multinational KIBS as bridges between global, national and regional levels is one central topic in this context.

On the basis of the *fourth research question*, the basic directions in the future development of KIBS, i.e. the strong prospective trends, have been charted, and this picture has been supplemented by looking for weak signals referring to unexpected development possibilities. The following eight strong prospective trends were identified in the study:

- Increasing demand for external expert services and growing emphasis on their qualified use: The study suggests that the long-existent growth trend of KIBS, in which outsourcing is one element, will keep its course in the future. External and internal services constitute, however, a whole in which the flow goes in both directions. A more and more critical factor will be the purchasing know-how of the clients, which is reflected in the emergence of services targeted to the training of clients and the planning of outsourcing.
- Tightening linkages of KIBS to clients' strategies: The study showed that, besides actual management services, also KIBS that serve some specific stage in the client's processes aim to consider and promote the client's business as a whole. Correspondingly, clients acquire services more and more often on the basis of their overall strategy and the related specific strategies. The strategy connection increases the importance of KIBS, but requires of them a growing use of initiative in bringing up important issues.
- Increasing importance of client-specific business know-how: Understanding the client's business emerged in this study as a major future challenge for KIBS. To meet the challenge, KIBS strive to increase their client-specific specialisation, both by the client sector and by other features of clients. Understanding the clients' business also often requires that KIBS examine their service chain all the way to the end-user.
- Broadening of the content of the service provided to the client: This trend identified in the study describes the general expansion of the service content in KIBS and the generalisation of service packages and integrated solutions. Combining services often requires commodification at least to some degree. Modularisation, too, is becoming more usual, particularly in technology-based KIBS.
- Spreading of consultative working procedures: The study showed that consultative operational practices are becoming common in all KIBS



sectors. In some sectors this means a big change: an interactive approach may as such be new as an everyday practice. Other sectors have been engaged in consultancy for long within the limits of their own expertise, but are now moving into the field of actual management consultancy.

- Convergence among the KIBS sub-sectors and between KIBS and the neighbouring sectors: Intermingling of functions that have traditionally belonged to different KIBS sectors was one of the central observations of the study. An important underlying factor is the development of information technology. Partly it is a question of temporary convergence, caused by the current development stage of information technology. Partly information technology, however, creates more permanent linkages both among KIBS sub-sectors and between the KIBS sector and the other main sectors.
- Concentration tendencies: According to this study, concentration, and the related polarisation, will be one of the characteristics of the KIBS sector in the future. The various KIBS sub-sectors, will, however, differ notably from one another, depending on whether global concentration, national concentration or only initiation of the concentration process will be most topical for them in the near future. The global multi-sectoral “big 5” companies represent the concentration trend in its strongest form.
- Diversification of international activities: The study showed that internationality appears in some form or another in the activities of an increasing number of KIBS. On the basis of the study, KIBS were divided into three main groups according to their internationalisation: KIBS following a “modern” evolutionary model, “born global” firms, and KIBS operating in the domestic market but having individual assignments and cooperation relationships that include international dimensions.

As general results concerning the above-mentioned trends, the following observations can be stated. Most of the strong prospective trends emerged in their present form in the 1980s. Especially in the latter part of the decade, many essential elements of the trends were already recognisable. The advances of ICT, the progress of networking practices in business life and the globalisation of economy have, however, accelerated the development in recent years. They have changed and will further change the contents of the trends: new features were found in this study in all of the trends. On the level of the whole trend, future progress of the eight strong prospective trends identified seems very probable. However, there are abundantly factors that may slow down the pace of the development. Furthermore, even though any breaking or turning of the trends in general is not in view, there are sub-trends and sub-phenomena whose manifestations may radically change in the future and some of which may even lose their force.

The interplay of the trends was found in many cases to be an important factor that strengthens trends, but also indications of controversy of the trends appeared. Of the weak signals identified in the study, the first one seems to be connected with such a trend conflict: to the problem of how to reconcile client-specific specialisation and comprehensive service content. The study brought up one possible solution to this problem. The solution, which is still on the level

of a weak signal, would be the emergence of KIBS that are specialised in gathering services from other KIBS into packages or integrated solutions according to the desires of the clients. If this possibility is realised, it may mean the development of the KIBS sector towards a two-layered structure: a layer of service coordinators may be formed between branch-specific KIBS and the clients. The study also identified two other phenomena that at this stage can only be termed weak signals. In the second weak signal the question is about the strengthening of the position of KIBS so far that they will, clearly more than today, direct the business of their clients or provide services from their own starting points, which means that the clients will have to adjust their business to the services available. The third weak signal refers to the possibility that firms in client industries start selling their in-house expert services to each other to a considerable extent, which would cause a notable change in the competitive environment of KIBS.

*The fifth research question* links the analysis of KIBS' future to the innovation topic. Promising areas for innovation in the KIBS sector were first explored. The classification of KIBS innovations developed by Gallouj (2002, 280) was applied here. According to this the examples that had come out in the interviews were divided to ad hoc innovations, new fields of knowledge innovations and formalisation innovations. Ad-hoc innovations refer to that expertise developing in connection with tailored solutions that can be transferred to new situations, even though the solutions as such cannot. The interviews for this study brought up three kinds of situations where such innovations may occur: firstly, extension of the activities of KIBS serving one company or one sector to many clients or many sectors; secondly, best practice -based activities regarding new issues; and thirdly, extensive individual service assignments that include much to be learned. In the new fields of knowledge innovations, the question is of the new service opportunities that the emerging spheres of knowledge in the business environment of KIBS offer. The examples provided by this study can be divided into five main groups: services related to technological innovations, new services enabled by information technology, new business-derived services, social innovations, and new possibilities for anticipatory and preventive activities. Formalisation innovations refer to those new ideas that are linked with the form of the service and with the mechanisms of service production. Four main types could be found for these innovations in the interview material: innovations concerning the form of services, innovations concerning the delivery of services, innovations concerning organisation of the client interaction, and innovations concerning KIBS' internal organisation. The text presents more detailed examples of the various innovation types mentioned above.

The generality of innovation activities in different KIBS sub-sectors was also examined in this part of the study. An important finding was that promising fields for innovation exist in the non-technological KIBS sectors, too; these have earlier been the target of a few studies only. Besides promising innovation areas, the study examined the ways in which KIBS in different sub-branches attempt to maintain and develop their innovativeness. On the basis of the interviews, these ways can be divided into four main groups: R&D activity,

training of personnel, innovative contacts, and the innovation perspective included in everyday business. Also when examined in this way, innovation-orientedness was found in all KIBS sectors. Training of personnel and innovative contacts to other firms, i.e. contacts that are expressly maintained for developing and renewing purposes, were very common both in T-KIBS and in the non-technological KIBS. Only separate R&D activity and the related university contacts were clearly more typical of T-KIBS. Of the ways in which the innovation perspective can be linked to everyday business, the study brought up three kinds of examples. First, companies may specialise in new topics and thus "force" themselves to be innovative. Secondly, firms may systematically view their client and cooperation contacts from the standpoint of learning. Thirdly, learning can be supported by organisational arrangements inside KIBS. The study also examined how and at what level KIBS firms themselves talk about issues linked with innovation. The interviewees only seldom used actual innovation terminology; on the other hand, related expressions, like "raising the quality", "development activities", "inputs in learning", "readiness to change", and "maintaining creativity", were in frequent use. Regarding the level of discussion, innovativeness of one's own company was the most common focus. Innovation issues in one's own branch were also treated quite commonly - the nature of innovations, innovation challenges and the means by which innovativeness could be promoted. Instead, discussions on innovativeness at the level of the whole KIBS sector or the whole economy were rare.

The study ended with an analysis of the learning challenges that future development poses for KIBS. By modifying and supplementing the categorisation made by Kuusisto (2000, 47), the following division was made of the central skill areas in KIBS:

- skills needed at the business level: understanding the basics of economy and business, understanding the on-going changes, combining of expertise and entrepreneurship, overall management of one's own value chain
- skills needed at the service process level: mastering the contents and methodology of one's own profession, know-how concerning client industries, skills needed in the management of actual service processes
- skills needed at the personal interaction level: marketing and sales skills, cooperation skills, social and personal skills.

The lasting elements and on-going changes in each skill area have been described in the study on the basis of the interviews. As a summary, it can be stated that although KIBS function in many different fields of expertise and their expertise naturally has a core related to their own field, the skills required also have much in common. KIBS also face a common challenge as regards reconciling of different, often even opposite, skills requirements: you have to understand both the "old" and the "new" economy; you must be capable of combining entrepreneurship and expertise; you should develop know-how both in terms of depth and scope, and both regarding your own profession and the client sectors; you have to master both the service contents and the methods and tools used in the service provision. From the viewpoint of innovativeness, the development of skills that would support business-derived innovations

proved to be especially challenging. The significance of formalisation innovations also became stressed in the examination of skills: among others, skilled planning of service processes, where an increasing number of stakeholders are nowadays taking part, requires an innovative orientation.

### 11.3 Evaluation of the study

#### *Evaluation of the results: their relevance and "anticipatory power" today*

The interviews for this study were conducted between December 1999 and August 2000. Strictly speaking, the results describe expert opinions as they were at that time. When evaluating the present relevance and "anticipatory power" of the results, the possible effects of the changed situation in the IT sector must be considered in the first place. In the years following the interviews, the expectations shown towards the development rate of the IT sector have proved unrealistic, and the sector has also suffered badly from the negative business cycle of the early 21<sup>st</sup> century. At the time of the interviews, this decelerated and partly negative development had not yet started, but a view of continuous dynamic growth was prevailing in the sector. The firms interviewed can be divided into three groups according to what extent this so-called "hype" can be thought to have affected the expert opinions collected. The greatest impact it has presumably had in the case of Internet consultants that operated in the core of the "hype". At the time of the interviews the firms in this sector typically expected their business to multiply within the next few years; actually, many of them have drifted into serious economic difficulties, and some have even terminated their operations. The growth expectations of the Internet consultants are interesting and important as opinions depicting the "hype stage", but they can no longer be used as such as futures arguments.

The second group consists of IT firms outside the most intensive "hype" and of those firms in the other KIBS sectors that are closely linked with the development of IT. The situation prevailing at the time of the interviews can be supposed to have influenced these firms, too, to some extent. However, it is worth noticing that the interviews also included IT companies that had already operated for long, and grown at a moderate pace. In the other KIBS sectors, mainly the new media units of advertising agencies, the so-called "interactive" departments, and the "big five" firms providing IT consultancy have been significantly linked with the IT sector in their development. The majority of the firms interviewed in this study is formed by the third group: the KIBS of different sectors, which are active users of information technology, but whose business is not dependent on the development of IT. Most of these companies expected their sector to grow, but the expectations for the pace of growth were moderate and attitudes towards the then-prevailing high growth predictions were often critical. The fact that these firms constitute the majority of the interviewees allows the conclusion that the results obtained in this study are still mainly applicable to outlining the future of KIBS.

In the following, the analysis of the effects of the changed situation in the IT sector will be supplemented by considering these effects on the different types of results of the study: on the strong prospective trends, weak signals, and on the innovation prospects. As regards the trends, the analysis of the previous paragraphs already indicates that the exceptionally dynamic development phase of the IT sector may have affected the estimates concerning the trend of growing demand for KIBS. The firms connected with the IT sector may have seen the growth prospects of the KIBS sector in an overoptimistic way. The estimates of the IT firms on their internationalisation rate were also very optimistic at the time of the interviews - many IT firms characterised themselves as the so-called "born global" firms. In the case of these firms, the results concerning the internationalisation trend would possibly be more guarded, if the interviews were conducted today. Furthermore, firms engaged in Internet consultancy belonged to those interviewees that strongly believed in the broadening of their service content, as well as in the convergence of the KIBS sectors. The emergence of the so-called new media sector as a combination of the IT sector, marketing communications and management consultancy was a vision which these firms had strong faith in. On the other hand, it should be noted that both the broadening of the service content and convergence phenomena were recognised as important trends also by other interviewees. In these more general views, too, information technology was often seen as an important background factor to the trends, but other supporting and promoting factors were brought up as well.

As regards the weak signals identified in this study, the changed situation of the IT sector can be evaluated to impact mainly on the signal which hinted at the strengthening of the role of KIBS. The large IT houses were an important source where indications in the direction of the signal were obtained. It is possible that the development implied by this signal is progressing more slowly now when the position of the firms that are its lead advancers has become uncertain. Finally, as regards the present relevance of the findings concerning the innovation prospects in the KIBS sectors, some of the interviews may have given too optimistic a picture of the demand for the new kinds of services related to IT and of the possibilities for electronic service delivery. On the other hand, it is to be noted that in the latter respect there were also several interviewees who emphasised careful consideration in entering the electronic world and warned of the risk of excessive simplification of issues.

In terms of their extent, changes comparable to the change of the situation in the IT sector have not taken place between the time of conducting the interviews and the time of writing the report. Although more limited an issue, yet worth mentioning is the ethical crisis in the "big five" companies, which occupy a central position in the KIBS sector. This crisis has emerged from the mutual link between auditing and consultancy. The impartiality of auditing was already entering the debate at the time of carrying out the interviews of this study. During the recent years it has, however, been questioned much more seriously due to the revealed cases of abuse. This can be supposed to have some effects on the trends describing the tightening linkages of KIBS to clients' strategies,

the spreading of consultative working practices, and convergence. The practical consequences have so far been restricted to the “big five” companies. However, the possibility exists that the delicate situation may increase caution also more generally in the KIBS sector as regards combining of different services or becoming involved very deeply in the clients’ business. On the other hand, this phenomenon does not play such a central role that the basic direction of the trends detected in the present study should be questioned. What is more likely to happen, is that KIBS companies have learned from this experience, use more discretion when combining services and look for new kinds of and less problematic service combinations.

The changes that have taken place after the interviews in KIBS companies and in their operating environment, particularly in the case of IT development, have been such that the interviewees would not necessarily have been able to predict them even with the best of intentions. On the other hand, when evaluating the interview statements, it must be taken into account that expert opinions concerning the future always include, besides relatively neutral *anticipations* independent of one’s own interests, also *expectations*, which reflect the respondent’s desires and serve his interests. The estimates presented in the interviews on the development of IT services and on other functions closely connected with the IT sector are probably also shaped by this tendency. The possibility of deficiencies and bias, inherent in human judgement and expert knowledge, has been discussed as a more general issue in this study when describing the methodological choices of the empirical part.

#### *Evaluation of the theoretical and methodological contributions of this study*

The theoretical and methodological contributions of the present study can be evaluated from the viewpoint of KIBS research on the one hand, and from the viewpoint of futures research on the other hand. From the former viewpoint, the broadening of the time perspective of KIBS research can be considered to be the first contribution of the present study. Earlier studies have mainly examined the role of KIBS in today’s economy. In this study, the examination has been extended further in history, and also the future development of the sector has been anticipated. The historical examination provides the opportunity to understand more deeply the background of the present economic role of KIBS: to understand how KIBS have developed to their present position and why the sector is important. At the same time as this study provides concrete historical information, it also connects KIBS research, only recently emerged, to its longer-term predecessor: the tradition of producer services research. On the other hand, the central meaning of KIBS as supporters of innovation makes it essential to anticipate their future. The futures dimension of this study, besides increasing anticipatory intelligence as regards KIBS, creates a linkage between KIBS research and futures research, a branch of science whose significance is clearly on the increase today.

Other contributions of this study, from the viewpoint of KIBS research, are the discussion about the concept of KIBS, the analysis of the mutual linkages of KIBS research and general innovation research, and the practical application of the theories and categorisations concerning service innovations. As for the concept of KIBS, this study has sought specification of both aspects included in the concept: the category of business services and the property of knowledge-intensity. Recent KIBS research has not only been presented as an important framework of this study, but it has also been analysed from a broader perspective: it has been shown how the development of general innovation research has been the precondition for insights concerning KIBS, and how KIBS research on the other hand has provided additional grounds for the central arguments of the new conception of innovation. Understanding of the special nature of service innovations has received a strong emphasis in the present study. The classifications of KIBS innovations produced in earlier studies have been developed further and illustrated with the empirical material collected for this study. The study has also included in its empirical analyses the topic of skills development, whose importance recent innovation research has stressed at the theoretical level. At this point, too, the classifications made earlier have been specified, supplemented and applied into practice. Still one contribution from the viewpoint of KIBS research is the wide scope as regards the inclusion of different KIBS sub-sectors. The non-technological KIBS, which have been previously studied only to a minor extent, have received special attention at the different stages of the study in hand.

From the viewpoint of futures research, the specification, operationalisation and application of some concepts central in this field of science - the concepts of driving forces, trends and weak signals - constitute the main contribution of this study. Clarifying the concept of trend in the futures context has been a particular focus: a new concept of "strong prospective trends" has been adopted in this study. Especially the latter attribute, "prospective", is crucial from the theoretical standpoint: it points out the different nature of the trends that extend into the future - as compared to the historical trends. This study argues that also in the case of prospective trends it is necessary to examine their history, but it is just as necessary to avoid the consideration of these kinds of trends as a direct continuum to past development. The attribute "strong" has served the specific purposes of this study: the aim has been to get as clear a general picture as possible of the future development of KIBS by identifying those trends that are most important and probable. The study has also examined the relationship of the concept of trend to the concept of a driving force; as a result, making a clear difference between these two concepts is recommended. It is most natural to use the concept of driving forces at the level of society as a whole, and to restrict it to phenomena which push ahead other developments, for instance developments at the level of specific industries, but which - unlike trends - themselves often lack a specific direction. As regards weak signals, the property of relevance has been highlighted in this study: a large number of signals should not be the goal as such; more valuable is the case where at least a few uncertain but essential development possibilities could be identified. Starting from the definitions specified in the above-described way, the criteria have been

presented on the basis of which the futures concepts have been operationalised in this study. The identification of trends and weak signals illustrates how these criteria have been applied, and can be applied, in the case of empirical material.

When evaluating the limitations of this study, three issues in particular have to be discussed. The first is the question, already dealt with in the previous sub-chapter, of whether the research results are still valid today. As a conclusion of the former discussion, it may be stated that due to the rapid changes in the IT sector the updating of the IT-related results of this study would be important. The second limitation concerns the lack of the client perspective in this study. As there was only little detailed knowledge of the KIBS firms themselves at the time of starting this study, a conscious decision was made to concentrate on a thorough examination of this side. However, it is clear that certain parts of the trend analysis in particular - the trends that involve future prospects of the use of services - should be supplemented with opinions collected from the clients of KIBS. Also more generally, the client perspective is emerging as one new field of KIBS research (cf. OECD 2002a). The third limitation of this study concerns methodology: in order to strengthen the validity, reliability and generalisability of the results concerning the trends and weak signals, it would be useful to carry out studies that would supplement the free-form interview method applied in this study with more formal methods of futures research. Yet, as the exclusion of the client perspective, also the free form of the research method was a conscious choice in this study: the scarcity of previous information could have led to the overlooking of many essential issues if formal methods had been applied. Thus the limitations of this study partly derive from solutions the purpose of which has been to serve the successful conduct of the study and the profound examination of the research questions set. Bringing up this point does not mean, however, that the clear need for further research could be underestimated; this need exists in terms of both the topic and the methods. It will be dealt with in some more detail in the next sub-chapter.

#### **11.4 Implications for further research and for practice**

##### *Implications for further research*

This study is a basic charting of the KIBS sector; its specific aim has been to increase knowledge about the future prospects of KIBS. Further work is needed both in general KIBS research, and more specifically, in the application of futures research in the KIBS field. Even without an emphasis on the futures perspective, there are several important directions to be followed in further studies. Firstly, the functioning and views of KIBS' clients, which were not included in this study, is a topic on which many kinds of studies are needed. Important, but not sufficiently well known, are, among others, the clients' views on the quantity and quality of different kinds of expert services. Another issue, whose growing importance was clearly observable in this study, is the know-how of clients in the use of KIBS. Secondly, studies exploring more accurately



the internal situation of the KIBS sector would be needed; studies targeted to individual KIBS sub-branches constitute an important part of this research need. The present study, which investigated the KIBS sector as a whole, could not follow this direction to any great extent; however, it did show the importance of sub-sectoral differences. The statistical part of the study also brought up interesting variations by country in terms of the number and sectoral division of KIBS; very little is so far known of the background and effects of these differences.

As for the future prospects of KIBS, further validation of the results of this study is one of the most important research needs; in connection with validation, the need for updating the results could also be met. As already stated earlier, it would be useful - and also possible relying on the basic work done within this study - to carry out further studies with the more formal methods of futures studies. The application of the Delphi method in particular could be a useful next step in the analysis of strong prospective trends, weak signals and innovation prospects in the KIBS sector. In a Delphi survey, a number of statements are formulated, and the respondents take a stand on each of them in terms of the probability of realisation and of the importance of the phenomenon described by the statement; a specific scale for the judgements has been drawn up in advance. According to the basic idea of the Delphi technique, several rounds are made within the survey; between the rounds respondents obtain feedback from the results of the previous round. In this way the respondents can compare their own opinion to the commonly prevailing views, and decide whether they want to change their opinion on the basis of the information received. Simplifying a little, those phenomena that are backed up by the majority of respondents can be interpreted to reflect trends. Correspondingly, the deviating opinions, to which some respondents stick despite knowing that the prevailing opinion is the opposite, can be interpreted as depicting weak signals. As the Delphi method has its origins in usual questionnaire-based surveys - only it is more demanding and developed specifically for futures studies - also statistically generalisable information can be provided, assuming that the sample size is big enough.

Studies enabling statistical generalisation are one direction in which it would be reasonable to proceed from this study. In addition to it, or instead of it, the aim could be to deepen the understanding now gained, but, in order to ensure validity, by using other methods than face-to-face interviewing. In fact, a version has been developed from the Delphi method, which allows such an approach. This so-called Argument Delphi technique not only collects expert opinions, but heavily emphasises the revelation of the grounds on which these opinions are based (Kuusi 1999, 207-209). Like in the traditional Delphi, respondents take a stand on a number of statements or theses, but furthermore, arguments for or against these theses are asked. Part of the arguments and counter-arguments are drawn up in advance in order to stimulate thoughts; however, free-form commenting plays a central role. Before the collection of the material by means of a questionnaire, basic work carried out through unstructured interviews is recommended in the Argument Delphi technique. The purpose of this stage is to

map out the relevant issues and topics extensively enough, so that the theses and arguments can be appropriately formulated. If an Argument Delphi survey were done as a further step to the study in hand, the task of the above-mentioned stage could be considered to have already been fulfilled. Besides being a basis for the formulation of the questions of a further study, the results obtained in the present study could also serve as hypotheses for the new study. This new study could then test the hypotheses, i.e. seek support for the assumption that the strong prospective trends, weak signals and innovation prospects identified in the study in hand are the relevant ones. At the same time, it has to be taken into account that the future is a continuously changing research object; the development views obtained in one study cannot be expected to remain unchanged in the KIBS sector, either. The Argument Delphi technique could be used for systematic exploration of this issue, too: an analysis could be made to determine which of the trends identified in this study are strengthening, and which are weakening owing to changes in the circumstances. Correspondingly, a study could be made to ascertain which of the weak signals are still weak, which are becoming stronger and why, and finally, what wholly new weak signals may possibly be in sight.

*Implications for practice: supporting the development of the KIBS sector*

Although further research in several different directions will be needed after this study, some preliminary conclusions of the practical development needs in the KIBS sector can already be drawn on the basis of the results now obtained. At the level of KIBS firms, there are two points in particular that can be applied in practice: considering the important trends in the sector from the viewpoint of one's own operations and utilising the new emerging opportunities. The trend analysis of this study revealed many such trends that KIBS firms should be aware of in order to keep up with development, and that can be taken into account also at the level of an individual firm. Among such trends are the initiative required from KIBS in bringing up matters that are important for the clients, the client's desire to get broad solution-oriented services, the need for specialisation according to client group, the increased importance of interactive working practices, and the demand for internationality. New opportunities came up in this study both in connection with the trends, in connection with the weak signals and in connection with the innovation prospects. In some of them, the question was of wholly new types of services - training of clients, planning of outsourcing or coordinating of various services. Others involved extension of existing activity to new growing service fields or innovative renewing of current operating practices, for instance combining services in a new way or utilising the new electronic forms of service delivery.

However, KIBS firms' own efforts are not necessarily enough in all respects to guarantee successful development of the sector. The polarisation of the sector, which came up in the trend analysis, and the related regional imbalance in service provision are issues in which measures of a more general societal level will be needed to prevent negative development. The general sufficiency and

quality of KIBS services should all in all be included in discussions on the important success factors of the economy. As regards quality, attention should particularly be paid to the smallest KIBS, which often have difficulties in developing their know-know as they are obliged to concentrate on daily routines. The external development and training organisations could be of help just here; they could create facilities for the maintenance and renewal of skills in small KIBS. (cf. Kox 2002, 138) The important and growing areas of skills identified in this study could serve as one source when planning the contents of the developmental support and training to be provided for KIBS.

Although this study has mainly been restricted to examination of the phenomena inside the KIBS sector, some development needs can also be raised in relation to the use of KIBS services. As in the case of KIBS themselves, also in the case of the clients, the question is both of quantity and quality: whether the client firms use KIBS when they need external help in expert issues, and whether they know where to buy services and how to organise the interaction with the service provider. In this respect, too, there are development needs especially in the SME sector. This study showed that training the clients in the use of KIBS is an activity that has already been undertaken to some extent by KIBS themselves. The extent of the need for training should, however, be analysed in more detail, and the readiness of public development organisations to support particularly small and medium-sized enterprises should be enhanced in this respect, too.

All in all, the awareness of the importance of the KIBS sector as a supporter of the economy and particularly of innovation activity should be increased not only among researchers, but also among practitioners. This study indicated that the research findings concerning the role of KIBS are known only to a minor extent even among KIBS themselves. On the other hand, when the basic arguments of KIBS research came under discussion in the interview sessions, they aroused great interest; according to the respondents these arguments also reflected in many parts their practical experience. Besides the point that awareness of the role of KIBS should be increased among the service companies themselves, the clients would need, not only concrete support in qualified acquisition of services, but also information - clearly more than they have today - on the importance of external expert services for successful business. Finally, at the level of the economy as a whole, the awareness of the role of the KIBS sector should be put into practice in the work done for the development of innovation systems. Inclusion of the KIBS sector in innovation systems projects, conducted at the regional, national and cross-border levels, could increase the contribution of this sector to the economy, and it could also promote the framing of the research questions in this field.

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**INDUSTRIAL GROUPING OF KIBS USED IN THIS STUDY**

TOL 95 (based on ISIC Rev. 3 and NACE Rev. 1)

**72 COMPUTER AND RELATED SERVICES**

- 72100 Hardware consultancy
- 72200 Software consultancy and supply
- 72300 Data processing
- 72400 Database activities
- 72600 Other computer related activities

**73 RESEARCH AND DEVELOPMENT**

- 73101 Research and development on medical sciences
- 73102 Research and development on other natural sciences
- 73103 Research and development on engineering and technology
- 73200 Research and experimental development on social sciences and humanities

**74111-74119 LEGAL SERVICES**

- 74111 Legal advisory activities
- 74112 Legal representation activities
- 74113 Advisory activities concerning patents
- 74119 Other legal activities

**74121-74129, 74842 ACCOUNTING, AUDITING ETC. SERVICES**

- 74121 Book-keeping and closing-of-accounts activities
- 74122 Auditing activities
- 74129 Other accounting activities
- 74842 Debt collecting activities

**74130, 74401-74409, 74843 MARKETING SERVICES**

- 74130 Market research and public opinion polling
- 74401 Advertising agency activities
- 74402 Direct and outdoor advertising activities
- 74409 Other advertising activities
- 74843 Trade fair and product demonstration activities

**74201-74209, 74300, 74841 TECHNICAL SERVICES**

- 74201 Town and city planning
- 74202 Civil engineering activities
- 74203 Architectural activities
- 74204 Structural engineering activities
- 74205 Heating, plumbing and air-conditioning design
- 74206 Electrical engineering design
- 74207 Other construction activities
- 74208 Mechanical and process engineering design
- 74209 Other architectural and engineering activities and related technical consultancy
- 74300 Technical testing and analysis
- 74841 Industrial design

**74140 MANAGEMENT CONSULTANCY**

74140 Business and management consultancy activities

**74501-74509 LABOUR RECRUITMENT SERVICES**

74501 Employment office activities

74502 Labour rental activities

74509 Other provision of labour and personnel

**80220, 80300, 80421-80429 TRAINING IN THE PRIVATE SECTOR**

80220 Technical and vocational secondary education

80300 Higher education

80421 Folk high schools, adult education centres etc.

80422 In-service training centres

80423 Language schools and centres

80424 Correspondence schools

80429 Other educational institutions

## OUTLINE OF THE THEMES IN THE COMPANY INTERVIEWS

### A. BASIC INFORMATION ON A COMPANY (history - current status - future prospects)

- year of establishment
- background to establishment (connection with outsourcing, innovation, new issues, entrepreneurship brought about by unemployment, etc.)
- main field of business, secondary fields of business, special know-how
- main products
- number of personnel
- key occupations
- qualification requirements (general - vocational - special)
- possible shortages of labour (quantitative - qualitative)
- client structure
- networks
- exports and other international activity

### B. COMPANY'S VIEWS ON THE DEVELOPMENT PROSPECTS IN THE BRANCH

#### 1. Development of the outsourcing process

- Has outsourcing been a major factor in the establishment of business activities in your own sector - how much do you think it accounts for the growth of the sector?
- Has outsourcing of operations in your own sector been taken as far as appropriate - when has this mainly happened?
- What operations do you expect to be still outsourced and how do you think this process will develop chronologically?
- What will be the significance of outsourcing for the growth of the companies in your sector in quantitative terms?
- What is the typical way of outsourcing in your sector (the firm's own activities are replaced by services purchased from a fully external party; in-house experts establish new service companies which the parent company possibly supports by concentrating the acquisition of services to them; services are partly purchased from an outside company, but are also partly provided by the company itself, etc.)?

#### 2. Nature and development of innovation activities

- How important has the need for new innovations been for the growth of business in your sector - how do you see the future in this respect?
- How could you describe typical innovations in your sector and how do you think they will change in the future?
- Are the companies in your sector primarily sources, carriers or users of innovations? Please describe in more detail the role of the companies in the sector at the various stages of the above-mentioned innovation chain.

### 3. Client relationships and co-production of services

- Are permanent producer-client relationships typical in your sector or is competitive bidding arranged when procuring these services, or are services otherwise procured on a case-by-case basis from various providers? Are there companies in your sector that provide services mainly for one client company only?
- What are the typical means of making contacts with clients?
- In what ways does the client gain concrete benefit from using a service company compared to the situation in which the service would be provided in-house?
- To what extent are the services provided together with the client? Do the clients in your sector generally have sufficient knowledge for acquiring high-quality services and for participating in their provision?

### 4. Networking between service companies

- Are networks between companies general in your sector - have they become more common in recent years, and if so, why?
- How would you describe the nature of networks - for which purposes are they used (division of work, supplementing the firm's own skills, training, exchange of experiences, unofficial get-togethers, etc.)?
- How are networks formed (promoted by a professional association or some other outside actor, generated by practical needs for cooperation, developed on the basis of personal contacts, etc.)?
- What is the meaning of networks for the success of companies?
- How do you expect the number and nature of networks to develop in the future?

### 5. Interdisciplinary activities, multisectoral companies

- Do companies in your sector generally operate in one field of business or are they typically multisectoral companies? Do the multisectoral companies cover mainly several functions inside one main branch (e.g. advertising and media services) or do they combine functions also from other main branches (e.g. information technology and management consultancy)?
- How have interdisciplinary activities developed in recent years and how do you expect them to develop in the future? What functions do you expect to be combined in the future?
- What kinds of impacts does the interdisciplinarity of companies have on the development in your sector?

### 6. Expressions and influences of internationalisation

- Does international trade play an important role in your sector? What are the typical services exported/imported? What are the development prospects for international trade like?
- How important a position do international enterprises occupy in your sector in Finland? When has the internationalisation of activities in this respect taken place? How do you expect the role of international enterprises to develop in the future?
- Are there international corporate networks in your sector? How would you characterise their functioning, meaning and development prospects?

- How does internationalisation affect the actual service provision, the client relationships, service contents and general framing of issues in your sector?
- What other effects does internationalisation have in your sector?

#### 7. Location patterns of companies

- In your opinion, what factors most determine the geographical location of companies in your sector (proximity of clients, the general growth prospects in the region, the infrastructure, etc.)?
- What do you think are the central reasons for the concentration of knowledge-intensive business services in the Helsinki Metropolitan Area?
- In your opinion, what are the regions in Finland that will have the greatest growth potential from the viewpoint of your sector in the future, and why?

#### 8. Increasing and decreasing sub-areas in the branch

- What kinds of services are increasing in your sector and what are decreasing?
- How do you expect the changes to affect the working practices of companies?
- Are there some novel service needs in society that have increased the growth potential of your sector (e.g. service needs caused by environmental issues, regulatory changes, development of multimedia)? What service needs of this kind do you expect to emerge in the future?

#### 9. Needs for professional skills

- What are the key occupations in your line of business? How do you expect them to change in the future?
- What are the most important qualification requirements in your sector: general, vocational and special? What changes do you expect to take place in them?
- How does the level of skills of the available labour correspond to the qualification requirements in your sector? What are the most important needs for training?

#### 10. Special problems and development needs in the branch

- What kinds of obstacles do you see to development and growth in your sector?
- With what measures could the problems be alleviated? Which actors and organisations should take the responsibility here?

### C. STRONG PROSPECTIVE TRENDS AND WEAK SIGNALS IN THE FUTURE OF THE BRANCH

- In your opinion, what will be the mainstreams of development characteristic of your sector within the next 10 to 15 years?
- What kind of weak symptoms do you perceive at present of things that may have an essential meaning for the development of your sector in the future?

### D. OTHER ASPECTS CONSIDERED IMPORTANT BY THE INTERVIEWEES



### Identification of the strong prospective trends on the basis of the interview material

Branch	Trend 1: Increasing demand for external expert services and growing emphasis on their qualified use				
	interviewees have stated the existence of the trend	interviewees have described KIBS level phenomena conforming to the trend	interviewees have described phenomena conforming to the trend at the level of their branch	interviewees have described phenomena conforming to the trend at the level of their company	practical operations in the interviewed companies conform to the trend
Computer and related services	0	4	19	22	11
Technical services (incl. R&D)	0	1	9	6	2
Legal services	1	2	6	2	1
Accounting and auditing	0	3	9	6	5
Advertising and marketing	0	2	6	6	3
Management consultancy (incl. recruitment and training)	0	1	7	4	2
All interviewed companies	1	13	56	46	24

Branch	Trend 2: Tightening linkages of KIBS to clients' strategies				
	interviewees have stated the existence of the trend	interviewees have described KIBS level phenomena conforming to the trend	interviewees have described phenomena conforming to the trend at the level of their branch	interviewees have described phenomena conforming to the trend at the level of their company	practical operations in the interviewed companies conform to the trend
Computer and related services	0	0	11	7	16
Technical services (incl. R&D)	0	0	9	2	7
Legal services	1	0	7	0	5
Accounting and auditing	0	1	9	1	6
Advertising and marketing	0	1	9	8	6
Management consultancy (incl. recruitment and training)	0	0	7	3	10
All interviewed companies	1	2	52	21	50

Branch	Trend 3: Increasing importance of client-specific business know-how				
	interviewees have stated the existence of the trend	interviewees have described KIBS level phenomena conforming to the trend	interviewees have described phenomena conforming to the trend at the level of their branch	interviewees have described phenomena conforming to the trend at the level of their company	practical operations in the interviewed companies conform to the trend
Computer and related services	0	0	6	4	14
Technical services (incl. R&D)	0	0	6	1	7
Legal services	0	0	6	2	3
Accounting and auditing	0	0	6	4	9
Advertising and marketing	0	1	3	1	6
Management consultancy (incl. recruitment and training)	0	0	5	1	7
All interviewed companies	0	1	32	13	46

**Identification of the strong prospective trends on the basis of the interview material  
(continued)**

Branch	Trend 4: Broadening of the content of the service provided to the client				
	interviewees have stated the existence of the trend	interviewees have described KIBS level phenomena conforming to the trend	interviewees have described phenomena conforming to the trend at the level of their branch	interviewees have described phenomena conforming to the trend at the level of their company	practical operations in the interviewed companies conform to the trend
Computer and related services	0	0	11	11	14
Technical services (incl. R&D)	1	0	8	3	6
Legal services	1	1	6	0	3
Accounting and auditing	1	0	9	4	7
Advertising and marketing	0	1	7	5	7
Management consultancy (incl. recruitment and training)	0	2	5	2	9
All interviewed companies	3	4	46	25	46

Branch	Trend 5: Spreading of consultative working procedures				
	interviewees have stated the existence of the trend	interviewees have described KIBS level phenomena conforming to the trend	interviewees have described phenomena conforming to the trend at the level of their branch	interviewees have described phenomena conforming to the trend at the level of their company	practical operations in the interviewed companies conform to the trend
Computer and related services	0	0	8	4	15
Technical services (incl. R&D)	0	0	4	2	5
Legal services	0	1	5	0	0
Accounting and auditing	0	0	13	6	7
Advertising and marketing	0	0	4	3	1
Management consultancy (incl. recruitment and training)	0	0	7	5	2
All interviewed companies	0	1	41	20	30

Branch	Trend 6: Convergence among the KIBS sub-sectors and between KIBS and the neighbouring sectors				
	interviewees have stated the existence of the trend	interviewees have described KIBS level phenomena conforming to the trend	interviewees have described phenomena conforming to the trend at the level of their branch	interviewees have described phenomena conforming to the trend at the level of their company	practical operations in the interviewed companies conform to the trend
Computer and related services	0	1	16	4	12
Technical services (incl. R&D)	0	0	7	4	4
Legal services	0	5	8	0	0
Accounting and auditing	0	0	11	5	5
Advertising and marketing	0	2	7	4	4
Management consultancy (incl. recruitment and training)	0	2	9	2	4
All interviewed companies	0	10	58	19	29

### Identification of the strong prospective trends on the basis of the interview material (continued)

Branch	Trend 7: Concentration tendencies				
	interviewees have stated the existence of the trend	interviewees have described KIBS level phenomena conforming to the trend	interviewees have described phenomena conforming to the trend at the level of their branch	interviewees have described phenomena conforming to the trend at the level of their company	practical operations in the interviewed companies conform to the trend
Computer and related services	0	0	12	2	3
Technical services (incl. R&D)	0	1	7	2	2
Legal services	1	0	5	0	0
Accounting and auditing	0	0	12	4	8
Advertising and marketing	1	0	8	5	1
Management consultancy (incl. recruitment and training)	0	0	7	2	1
All interviewed companies	2	1	51	15	15

Branch	Trend 8: Diversification of international activities				
	interviewees have stated the existence of the trend	interviewees have described KIBS level phenomena conforming to the trend	interviewees have described phenomena conforming to the trend at the level of their branch	interviewees have described phenomena conforming to the trend at the level of their company	practical operations in the interviewed companies conform to the trend
Computer and related services	0	0	11	9	22
Technical services (incl. R&D)	0	0	6	6	11
Legal services	1	0	6	3	9
Accounting and auditing	0	0	11	9	8
Advertising and marketing	0	0	4	5	4
Management consultancy (incl. recruitment and training)	0	0	3	2	8
All interviewed companies	1	0	41	34	62

Evidence about the trends was often obtained at many different levels in one and same interview.

Due to this, the total number of observations is in the case of each trend greater than the number of interviews.

A mutually exclusive calculation - a calculation of the total number of those interviews from which conclusions concerning each trend could be made at least on some basis - is shown in the Table 15 in Chapter 9.1.

The number of interviews by branch was the following:

Computer and related services	26
Technical services (incl. R&D)	15
Legal services	9
Accounting and auditing	14
Advertising and marketing	10
Management consultancy (incl. recruitment and training)	13
All interviewed companies	87

## **A SAMPLE OF THE EMPIRICAL DATA USED IN THE ANALYSIS OF THE STRONG PROSPECTIVE TRENDS**

This Appendix contains a sample of the most important original interview statements that were used for the analysis of the strong prospective trends in Chapters 9.2 and 9.3. As the topic in question is about strong trends, many interviewees have said the same thing with slightly different words. To keep the description of the material reasonable in size, all statements are not included, but the ones have been selected in which the trends, and the different aspects needed for the analysis of them, are most clearly discernible. The greater part of the quotations describes the interviewees' opinions about the existence, nature and continuity of the trends. However, also statements that describe the firm's own situation and operating practices are included when they illustrate the development inherent in the trend.

The statements are presented trend by trend, and within the trends the order of quotations follows the text of Chapter 9.2. In order to show clearly the connection between the empirical material and the analysis of individual trends, this Appendix contains a number of sub-titles that make reading easier. The linkage to Chapter 9.3, which systematically summarises the different aspects of the trends, has been shown by mentioning at the end of each quotation its main use in the summarising analysis: whether the quotation has been used mainly for the identification of the trend, for the description of the nature of the trend, for the description of supporting or retarding factors as regards the trend, or for the description of new features in the trend. A summary table of these different uses has been presented on the next page. As many interviewees have included in one sentence several aspects of an individual trend, one and the same quotation may have been used for several purposes. Also the different trends are interconnected in the interview quotations: observations related to several trends are often discussed together. Showing all these interconnections would have made this Appendix very complicated - thus, for the sake of clarity, each statement has been linked to only one trend, to the trend for which it has been considered to be most relevant. In many cases, grounds for conclusions can, however, be found also in connection with other trends. For example, the conclusion that there is a growing need for training the clients is based, besides on the interview statements cited under the first trend, which explicitly concerns this issue, also on those statements under the second trend which emphasise the need to "alert" clients.

The quotations are in general presented exactly in the form that they were originally said (although translating Finnish speech into English may have slightly reduced the colourfulness and vividness of the statements). The only modification made is replacing the names of firms occurring in the interview statements - the firm's own name or the name of its partners or clients - with a more general characterisation. In a few commonly known cases the name has been preserved. The industrial branch and size class of the firm interviewed are given at the end of the quotation. Also the location of the firm is important, especially in the case of some trends. As the majority of the firms interviewed operate in the Helsinki metropolitan area, the location is given only in the case of those firms that operate outside this area. In the characterisation of the firm size, classification according to the EU recommendation has been used: a firm is small if it has less than 50 employees, medium-sized if its staff totals 50 - 250 employees, and large if it has more than 250 employees (Statistics Finland 2003). In some KIBS branches the categorisation used by the branch itself differs from the one given above,

which is to be noted when reading the quotations. Especially legal firms in Finland are so small that even a firm with more than 50 employees has been referred to by the interviewees as a large firm.

**Table: A summary of the use of the exemplary interview statements for different purposes in the trend analysis (the numbers in the table are the respective interview statement numbers)**

Purposes of analysis Trends	Identification of the trend	Description of the nature of the trend	Description of factors supporting the trend	Description of factors retarding the progress of the trend	Description of new features in the trend
Trend 1	7, 9, 12, 13, 15, 16, 17, 18, 19, 21, 22, 27, 35	7, 8, 10, 11, 12, 14, 17, 19, 25, 26, 28, 29	1, 2, 3, 4, 5, 6, 20	11, 13, 24, 27, 30, 31, 32	22, 23, 24, 33, 34, 35
Trend 2	36, 37, 40, 41, 43, 44, 45, 47, 48, 49, 50, 51, 56, 62	38, 39, 46, 48, 52, 53, 54, 55, 57, 58, 59, 60, 61, 63, 64, 65, 66	40, 45, 49, 51, 62	41, 42, 44, 50, 63, 65	37, 38, 39, 40, 43, 46, 49, 56
Trend 3	68, 69, 70, 71, 73, 75, 76, 77, 78, 79, 80, 81	68, 69, 70, 72, 80, 82, 83, 86, 87, 88, 89, 90	67, 74, 82, 83, 88, 89, 90	73, 84, 85, 91	68, 70, 74, 79, 86, 87, 88
Trend 4	92, 95, 99, 101, 102, 114, 115	94, 97, 100, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 116	92, 93, 94, 95, 98, 115	117, 118	96, 99, 101, 103, 108, 110, 111, 115
Trend 5	120, 121, 124, 125, 129, 132, 133, 136	119, 122, 123, 126, 127, 128, 132, 133, 134, 135, 137, 138, 139	121, 124, 128, 129, 130	131, 135, 138	120, 121, 123, 124, 131
Trend 6	140, 141, 142, 143, 144, 145, 146, 152, 153, 164, 168	147, 148, 149, 150, 166, 167, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178	146, 151, 157, 158, 160	155, 156	143, 151, 152, 153, 154, 157, 158, 159, 160, 161, 162, 163, 164, 165
Trend 7	180, 182, 184, 185, 187, 190, 191, 193, 203, 214	189, 194, 195, 196, 198, 199, 202, 204, 205, 206, 207, 215, 216, 217	179, 180, 181, 192, 209, 210, 214, 217	186, 187, 188, 197, 200	183, 191, 201, 203, 208, 209, 211, 212, 213, 218, 219
Trend 8	222, 233, 234, 236, 241, 242, 245, 248, 252	220, 221, 223, 224, 225, 226, 227, 228, 229, 230, 235, 237, 244, 247, 249, 250, 253, 257	222, 234, 241, 242, 248	231, 232, 234, 254, 255, 256	233, 236, 238, 239, 240, 243, 245, 246, 251, 252, 254, 255, 256

## **Trend 1: Increasing demand for external expert services and growing emphasis on their qualified use**

### *Factors favouring the use of external expert services*

1. "The advantage of using external services is that know-how accumulates from a larger sector: when a specialised firm collects information on several businesses, knowledge increases both in amount and in scope." (*respondent: a professional association, technical services; use: factors supporting the trend*)
2. "When acquiring a service from an external firm, the client can buy what he really needs, and that particular thing only. The activities of service firms are also often more innovative than internal activities, as these firms receive all the time new impulses from the market. However in earlier times, during the strong construction phase, retaining engineering activities within the client sectors was important, because it kept certain special know-how in Finland; otherwise it would have moved elsewhere." (*respondent: a small multisectoral engineering office; use: factors supporting the trend*)
3. "Outsourcing also provides other benefits besides focusing on the core business: it is a way of acquiring influences from the rest of society. External specialised agencies possess an overall view which can be used for benchmarking. The intranet/extranet systems offer an efficient tool with which a client firm can integrate the sub-contracting chains and outsourced functions into its core business." (*respondent: a small advertising agency outside the metropolitan region; use: factors supporting the trend*)
4. "Intellectual resources of a higher level speak in favour of the use of external services. An expert firm that provides services for many clients obtains brainpower from a wide area. On the other hand, when working for one firm only, you have to reinvent the wheel. In connection with outsourcing, multiplication of know-how happens; the client often experiences that he gets more information than he has paid for." (*respondent: a small accounting firm; use: factors supporting the trend*)
5. "In connection with outsourcing, innovations are often created, as things have to be solved in a new way." (*respondent: a medium-sized IT company; use: factors supporting the trend*)
6. "Outsourcing improves efficiency, because it helps to get rid of indefinite development activities. Such activities can often be found in the managerial departments of companies. They become visible and decrease, when the functions are priced in connection with outsourcing." (*respondent: a big IT services company; use: factors supporting the trend*)

### *Prospects of growth and outsourcing in different KIBS sectors*

7. "In Finland in-house engineering is still common in the public road administration, municipalities, and in power and metal companies. A little more than half of the engineering sector has been outsourced; the outsourcing trend will continue, but slow down. It is not possible to outsource everything - engineering can also be the core business of a firm." (*respondent: a professional association, technical services; use: identification of the trend, nature of the trend*)

8. "In the manufacturing industry, some sectors - the food industry, for example - have outsourced all of their engineering functions, whereas others - the chemical industry, for example - still have abundantly in-house process engineering." (*respondent: a small multisectoral engineering office; use: nature of the trend*)

9. "Our firm has good growth prospects, based on the continuity of outsourcing, on one hand, and on new service needs, on the other. Outsourcing is a major growth factor in forest industry engineering. New service demand can be expected in the energy sector and in environmental planning: using renewable energy sources and solving global problems related to pure water and waste water treatment are examples of this." (*respondent: a big multisectoral engineering company; use: identification of the trend*)

10. "Building services were outsourced mainly in the 1970s; before that industrial companies had their own staff for planning of heating, plumbing, ventilation and electrical installation. Now this sector has been outsourced altogether; the client firms have in-house engineers only for the supervision of operations and maintenance. Similarly, the public and local establishments do not any more have own activities in building services." (*respondent: a small engineering office, building services; use: nature of the trend*)

11. "Industrial design is an activity that has been outsourced for the most part; the peak of outsourcing was in the 1980s. However, also internal services are used in new sectors, such as communications technology. In these sectors the ideation and production cycles of products are so intensive that design must be part of the team to keep business secrets in house. If external services are bought, they are bought from big international companies that can e.g. analyse global trends. There are also sectors where the demand for design is only beginning; such sectors are investments and heavy industry." (*respondent: a small industrial design firm outside the metropolitan region; use: nature of the trend, factors retarding the progress of the trend*)

12. "IT services have been actively outsourced for around ten years. Many big companies have outsourced their services altogether; in some cases the service is carried out in cooperation between the IT firm and the client. Outsourcing will continue; in some parts the outsourcing phase is just about to begin. On the other hand, there is also movement backwards." (*respondent: a professional association, IT services; use: identification of the trend, nature of the trend*)

13. "In the planning of information systems, it is typical that the client detaches a number of its own employees for the task, while work is also bought from external providers. There is still much outsourcing to be expected. Besides that new systems will be needed, maintenance services keep growing and expanding to more and more critical areas. On the other hand, the central role of information technology in client firms retards the progress of outsourcing; the clients want to keep the control inside the firm. Our company, which leases IT experts, offers a compromise: when an expert works under the management of the client, the question is in a way about outsourcing inside the company." (*respondent: a medium-sized IT services company; use: identification of the trend, factors retarding the progress of the trend*)

14. "In advertising, the outsourcing process has practically been completed; banks, for instance, already gave up their internal advertising departments at the turn of the 1980s. At the early stage of outsourcing, some big companies had their own advertising subsidiaries, but these, too, have mainly been wound up. In Finland, the retail business forms an exception to the general situation: it does much in-house

advertising.” (*respondent: a professional association, marketing communications; use: nature of the trend*)

15. "The increased variety of media alternatives makes the need for media planning more acute and makes media offices more important. Media choices are more and more individualised, i.e. it is difficult to reach people in masses." (*respondent: a medium-sized company, media planning; use: identification of the trend*)

16. "Outsourcing of client bulletins is continuing; around one third of the market has been outsourced. All in all, the share of the external market is expected to rise in this case to approximately 60% - 70%." (*respondent: a small firm editing client bulletins; use: identification of the trend*)

17. "In the future, outsourcing of legal services will increase above all because legal cases are becoming more complex. Even if the service is bought from the outside, the client company must have enough corresponding internal expertise so that it can recognise when external help is needed and is capable for the adequate reception of the service." (*respondent: a small law firm; use: identification of the trend, nature of the trend*)

18. "Very many firms and organisations have outsourced their legal services: for example, banks have outsourced their legal departments that were set up in the 1970s and 1980s. Still, the public sector has many lawyers e.g. at various ministries. These will yet be outsourced." (*respondent: a medium-sized law firm; use: identification of the trend*).

19. "It is probable that big companies will start to outsource their financial administration functions also in Europe, as this is already the case in the US. In accounting firms this outsourcing will compensate the reduced amount of work caused by the IT development. The top-class firms will have the opportunity to get charge of financial administration functions of really big companies, but at the same time the division into successful actors and losers will be accelerated." (*respondent: a small accounting firm; use: identification of the trend; nature of the trend*)

20. "The standard of accounting firms has risen, and they provide other services besides accounting, which increases the outsourcing possibilities in the sector." (*respondent: a small auditing firm; use: factors supporting the trend*)

21. "Staff training carried out by firms themselves was earlier extensive in Finland, e.g. the biggest wholesale businesses and insurance companies had colleges of their own. In recent years training services bought from outside have increased continuously; staff training is a sector that will probably be outsourced altogether." (*respondent: a medium-sized training company belonging to an international chain; use: identification of the trend*)

#### *Changes in the core-business thinking*

22. "We are an agency established in the mid-1980s for provision of R&D services for the electronics industry. We were early on the move in this field; we were laughed at as people thought that R&D is not a service which can be ordered from outside. Now there are big engineering firms that have set up R&D departments for electronics. The clients still want to keep in-house some core functions, but other functions - equally new and essential - are outsourced. In these cases the core-business thinking does not apply to



development of technology, but to the market characteristics of products and to project management: what a product should be like, what it should do, what kinds of variations are needed for different countries, etc. One reason for outsourcing is that even the firm's own employees stay maybe only for a couple of years with the firm; it hardly matters whether the work is done by the firm's own employee or by an external expert." *(respondent: a small R&D firm; use: identification of the trend, new features in the trend)*

23. "Bigger IT firms aim to deal themselves with issues related to contract law and intellectual property rights. In regard to their size, the legal departments of the biggest companies correspond to a large Finnish law firm." *(respondent: a medium-sized law firm; use: new features in the trend)*

24. "Big companies often tend themselves to matters related to technology law; they have patent units and IT lawyers. Legal services linked with IT are so close to a firm's core business that they cannot be outsourced as easily as other functions. The solution depends on how continuous the production of innovations in a firm is." *(respondent: a small law firm; use: factors retarding the progress of the trend, new features in the trend)*

#### *The impact of the age of the client company on outsourcing*

25. "Outsourcing is connected with later stages in a firm's life cycle, and firms outsource the functions that take the least time to learn. These functions are often connected with technology. Tasks in which the firm's internal culture and the industry-specific characteristics play a central role are slower to learn as they contain much tacit knowledge. Therefore it is reasonable to keep the know-how related to these within the company." *(respondent: a big IT services company; use: nature of the trend)*

26. "The core business -thinking brings cost benefits only if the process is mastered, i.e. the learning process has been carried through in the outsourcing firm. The firm itself must first have handled the functions to be outsourced, so that it knows what to do and can evaluate the quality of the service. The more advanced the firm is in this, the better it can manage with outsourcing." *(respondent: a medium-sized IT company; use: nature of the trend)*

27. "While we provide outsourced services, we ourselves, too, outsource everything possible: advertising, legal services, accounting, etc. Among the firms that provide services to us, some understand well the nature of the IT business, some have had difficulties in identifying the difference between project business and product business, for example. Outsourcing has sometimes failed due to our own inexperience as well." *(respondent: a small IT firm; use: identification of the trend, factors retarding the progress of the trend)*

#### *Clients' competence in using KIBS*

28. "When buying services from the outside, interface know-how is important, you have to know what to buy." *(respondent: a professional association, IT services; use: nature of the trend)*

29. "Consultancy assignments vary from vague into clear ones. In general, the clients' own know-how in areas in which consultants provide services has distinctly increased. For instance, the tools of the strategy consultants of the 1970s and 1980s are already

in use in the client companies: the management has learned them at the university. You have to run a race with the clients in expertise and to ensure that you keep ahead of the client." *(respondent: a medium-sized management consultancy firm; use: nature of the trend)*

30. "In Internet services the know-how deficiencies of the clients often manifest themselves in that the final outcome of the service is thought as a product only, not as an overall solution." *(respondent: a small new media firm, merged with a big foreign company; use: factors retarding the progress of the trend)*

31. "It has not been taught to the management of small Finnish firms that it is with numbers that one should manage a company. Therefore the analyses provided by an accounting firm are not appreciated, but accounting is considered a compulsion." *(respondent: a medium-sized accounting firm; use: factors retarding the progress of the trend)*

32. "The role of marketing communications is not understood, many clients still regard it as a mere expense. Thus, know-how should be improved on the client's side, too." *(respondent: a professional association, marketing communications; use: factors retarding the progress of the trend)*

*Meta-KIBS: training of clients and planning of outsourcing*

33. "Our aim has been to give our client firms new kind of understanding of marketing communications, and of the use of the expert services in this sector." *(respondent: a small advertising agency outside the metropolitan region; use: new features in the trend)*

34. "Assisting our clients in outsourcing of their business processes will be one of the priorities of our operations in the future." *(respondent: a big IT company; use: new features in the trend)*

35. "Some big five -firms have started to sell planning services for outsourcing; this among others indicates that outsourcing will continue." *(respondent: a small auditing firm; use: identification of the trend, new features in the trend)*

## **Trend 2: Tightening linkages of KIBS to clients' strategies**

*Linkages of KIBS to the client's basic strategy*

36. "Solutions linked with information technology are not only technical, but views and decisions of the business management are also required on how to make the solutions." *(respondent: a medium-sized IT services company; use: identification of the trend)*

37. "The clients demand above all value added for their business from law firms. An important general trend is that you have to think all the time about the ways in which to provide this value added both by deepening legal know-how and by understanding broader issues. Earlier a lawyer's basic competence was enough, but now it is only a starting point. When performing legal assignments, one must understand business, and sometimes - like in the case of intangible rights - also technology. The clients are capable of assessing rather well how much value added can be obtained, and

occasionally this can also be measured in money. For instance, it can be calculated how much taking legal action will pay compared to an amicable settlement.”  
*(respondent: a regional subsidiary of a medium-sized law firm; use: identification of the trend, new features in the trend)*

38. "In legal services a big change is that the activities are becoming preventive. Besides the services provided to the actual clients, law firms should carry on general educational work: give lectures, write articles, and so on. These kinds of activities outside the actual business should be considered as networking and marketing inputs.”  
*(respondent: a small law firm; use: nature of the trend, new features in the trend)*

39. "In new issues related to ICT, legislation is dragging heavily behind the development. A lawyer must anticipate it by leaning on good practices. The use of generally accepted contract models is one means by which disputes can be prevented.” *(respondent: a small law firm outside the metropolitan region; use: nature of the trend, new features in the trend)*

40. "Along with the development of information technology, the need for separate recording activity in financial administration of companies will gradually end, but the need for evaluation of data will continue and grow. After the reduction of routines the most important field will be the reporting systems that are part of the management of a company's business.” *(respondent: a small accounting firm; use: identification of the trend, factors supporting the trend, new features in the trend)*

41. "In the accounting business, there are many small firms which only provide services in filling in tax return forms and for which the clients bring receipts in a plastic bag. These firms lack an overall view; they consider things from the viewpoint of documenting. The bigger companies understand that at best an accounting firm can provide all services of a financial department and various analyses needed by the management.” *(respondent: a big five -company; use: identification of the trend, factors retarding the progress of the trend)*

42. "In the latter half of the 1990s, the all-pervasive thing was information technology; it changed job titles and work profiles. Together with the multiplication of media, it took the attention away from the client focus, so that in this respect there still remains much to do.” *(respondent: a small advertising agency outside the metropolitan region; use: factors retarding the progress of the trend)*

*Specific strategies of clients: competences strategy, IT strategy, brand strategy, design management*

43. "Personnel policy based on skills management is becoming more common. The composition of the competences needed in the firm forms the starting point in staff training; the know-how of each employee is compared to the overall need, and individual development plans are drawn up on that basis. When recruiting new employees, attention is paid to the way in which the job applicants could complement the already existing competences in the firm.” *(respondent: a big IT services company; use: identification of the trend, new features in the trend)*

44. "The existence of an Internet strategy in a firm shows that the management is committed to the development of services and solutions in this field; the strategy is important especially in big companies. Except for the biggest groups, strategic thinking in connection with the Internet is, however, still rather rare.” *(respondent: a medium-*

*sized new media company; use: identification of the trend; factors retarding the progress of the trend)*

45. "At the turn of the 1990s, advertising agencies began to broaden their services from mere advertising to integrated marketing communications; at the same time client firms began to recruit communications managers. An important background factor behind this development was the change of IT from a tool for calculating and planning into an instrument of communications. Firms have to create an IT and Internet strategy and to integrate it into their overall business." *(respondent: a medium-sized advertising agency; use: identification of the trend, factors supporting the trend)*

46. "Advertising and communications were earlier separate services; today they are mixed, and non-verbal communication is becoming more and more important alongside intentional communications. Advertising is what we see in paid advertising media. Speeches by company representatives, the display of company products etc. are forms of intentional communications. The behaviour of a company's products and the related values belong to the realm of tacit communication. An advertising agency also must take a stand on the two last-mentioned areas, which is why we, for example, have a communications subsidiary of our own." *(respondent: a medium-sized advertising agency belonging to a worldwide group; use: nature of the trend, new features in the trend)*

47. "There are advertising agencies that 'invent advertisements'. We seek to understand our task more widely and profoundly: to develop the marketing and brand strategies of our clients. Advertising is linked with all situations in which the firm, its products or employees appear in public. The brand is important, not only towards consumers, but also in business-to-business relations." *(respondent: a small advertising agency; use: identification of the trend)*

48. "Our firm provides design services from strategic ideation of products all the way to launching the products onto market. Besides product design, our services include company image design and consultancy in marketing communications. Company image design includes many strategic issues, e.g. development of the firm's product identity and visioning of products. Forms of cooperation include product development projects, partnership, consultancy, and licensing of product models." *(respondent: a small industrial design firm; use: identification of the trend, nature of the trend)*

49. "In many sectors it is difficult to obtain a competitive edge with technical solutions any more, which means that the strategic meaning of industrial design increases. Design concerns, not only the message given by the products, but all the more the overall message created by the company image. For instance, it is important that reliable technical equipment also looks reliable. Taking nature into account is part of building up a brand: the structure of the product and the choice of the materials influence the burden caused to the environment by the product's manufacturing process." *(respondent: a small industrial design firm; use: identification of the trend, factors supporting the trend, new features in the trend)*

50. "Design management, which means comprehensive and integrated brand building, is gaining more and more ground in the big wide world. In Finland mainly IT companies and a few big companies in other industries carry it on, as the size of the market restricts the development potential in these matters." *(respondent: a medium-sized advertising agency; use: identification of the trend, factors retarding the progress of the trend)*

*Development of the client relationship into a strategic partnership*

51. "A competent advertising agency always aims to link all of its functions to supporting the client firm's strategy. The advertising agency is a strategic partner of the client firm. It is also important to think how the strategies are put into practice. Development of the monitoring of consumer behaviour - loyal customer schemes, collection of information on the consumers etc. - has helped in this." (*respondent: a medium-sized advertising agency belonging to a worldwide group; use: identification of the trend, factors supporting the trend*)

52. "Our firm is a strategic partner to our clients: we define together the targets of the communications activities. The longest client relationships have lasted over 20 years." (*respondent: a small advertising agency outside the metropolitan region; use: nature of the trend*)

53. "The starting point in engineering consultancy is the client's need, the basic information comes from the client. On the other hand, a planning project is interaction all the time. An engineering office provides abundantly new information to the client, which may lead to a change in the nature of the whole project." (*respondent: a small multisectoral engineering office; use: nature of the trend*)

*Initiativeness required from KIBS, "alerting" the clients*

54. "Proficiency in a recruitment firm presupposes that the firm is able to see what kinds of skill areas are becoming important and that it knows how to structure the client's practical needs. The client often only describes its current situation and expects the recruitment firm to tell what kind of an employee is needed in that particular situation. A client company may also evaluate its needs in an inappropriate way, because it is "too deep" in its own business." (*respondent: a small personnel recruitment firm; use: nature of the trend*)

55. "A recruitment firm is exercising power; it is part of the role of these firms that staff is not only recruited on the basis of what the client wants, but it is examined what the client needs." (*respondent: a medium-sized personnel recruitment firm belonging to an international chain; use: nature of the trend*)

56. "We are a recruitment firm carrying on direct search for executive management. In the cooperation with our clients, the starting point is that recruitment is tightly linked with the overall evaluation of the needs for change regarding the company management. Nowadays the clients often want that the recruitment of top-level experts is also included in addition to the recruitment of executives. Direct search is an expensive service, and therefore the client must obtain real value added from using an outside company for this purpose. During the past few years, our role has got a new emphasis: we are a discussion partner to our clients also in the more general sense, a sort of a sparring partner." (*respondent: a small 'head hunting' firm, belonging to an international chain; use: identification of the trend, new features in the trend*)

57. "A firm providing legal services must be capable of bringing up things that the client himself does not take into account: sparring, advising and participating are important. You have to cooperate with the client, to think about what the client needs and to arouse this need." (*respondent: a small law firm outside the metropolitan region; use: nature of the trend*)

58. "The ability to analyse abstract problems and integrate the relevant matters into a whole quickly are the core competences of a lawyer. The client's awareness is important, but unless the client himself does not perceive the whole, the lawyer must be capable of putting the right questions." (*respondent: a small law firm; use: nature of the trend*)

59. "In the software industry, the legal protection of products is still at the initial stage, which weakens the commercial utilisation of the products. In the case of Internet services, neither the service firm nor the client do often know what was bought and what rights were surrendered. The development of information technology is a challenge for the competence of lawyers, too: to be able to define the object to be protected, you have to know programming. C++ is like Latin in the Middle Ages, everyone should know something about it." (*respondent: a small law firm; use: nature of the trend*)

60. "The clients do not often come to think of asking about new things. For instance, they do not know in what kinds of things they will have to face EC regulations." (*respondent: a small law firm; use: nature of the trend*)

61. "When environmental issues entered the picture more than 15 years ago, it was the first big change in traditional engineering. Evaluation of the social impacts of the plans is now becoming essential, together with assessment of environmental impacts. The restructuring of the social environment should be examined, and social scientists should enter the planning field. For instance, planning of the learning environments is important. The so-called 'third age' should be taken into account in this and in other contexts: retired people are coming back to school. Correspondingly, in planning of the free access, plans focusing on the physical environment are not enough; the social environment, too, has an effect on where an aged person dares to go." (*respondent: a medium-sized engineering company, community planning; use: nature of the trend*)

62. "Today more attention can be paid to the whole life cycle of a building. This has created a new way of thinking that engineers sell to their clients: you do not just build a house, its future must also be thought about. HVAC engineering can contribute much to energy consumption and ecology. Cost calculations that cover the whole life cycle of a building have been made on this basis. Their use is self-evident to some clients, some just do not care." (*respondent: a small engineering office, building services; use: identification of the trend, factors supporting the trend*)

#### *Confidentiality and the means to preserve it*

63. "Client relationships require mutual trust. From the viewpoint of expert firms, it is problematic that these firms must reveal quite a lot about their expertise and products before the decision concerning the assignment is made." (*respondent: a small new media company, merged with a big foreign company; use: nature of the trend, factors retarding the progress of the trend*)

64. "Internal culture and rules of ethics have a central meaning in the management consultancy sector. The practices adopted by the biggest international consultancy firms have provided the basis for the rules of ethics that the professional associations in consultancy apply." (*respondent: a small management consultancy firm; use: nature of the trend*)

65. "An advertising agency gets so deep in its client's core business that for competitive reasons it is not correct to serve other firms in the same line of business.

Thus, the prevailing practice is that an advertising agency has only one big client from each sector." (*respondent: a medium-sized advertising agency; use: nature of the trend, factors retarding the progress of the trend*)

66. "Our agency seeks key client relationships, i.e. confidential relationships where it is not necessary to build up mutual cooperation all over again." (*respondent: a small architectural firm; use: nature of the trend*)

### **Trend 3: Increasing importance of client-specific business know-how**

#### *Sector-specific specialisation*

67. "The word of the day is multisectorality: you have to extend your fields of expertise. On the other hand, in-depth knowledge is called for; it is no more possible for any firm to be an expert in every field." (*respondent: a big five -company; use: factors supporting the trend*)

68. "Our firm's main challenge is sector-specific knowledge concerning the client sectors - in product-specific know-how based on the expertise of our own profession we are well competitive. Earlier our practice was to recruit young university graduates and make them 'Jacks-of-all-trades' by means of further training inside the company. Now we can see that this is not enough, so the training is now connected with knowledge of the client sectors, and the newcomers are directed outright to industry-specific groups. However, we do not recruit people whose only strength is sectoral know-how." (*respondent: a big five -company; use: identification of the trend, nature of the trend, new features in the trend*)

69. "In our company, each lawyer must specialise in some client sector, for example, in the telecom business or biotechnology. Everyone has to acquire this special knowledge himself. The sector-specific know-how must be on the level that one is capable of asking relevant questions. Trends in different sectors are also monitored within our chain, and in this respect, too, we use allocation of work between experts." (*respondent: a regional subsidiary of a medium-sized law firm; use: identification of the trend, nature of the trend*)

70. "In engineering consultancy we are going towards a more in-depth sectoral know-how; we tie ourselves to some client sector and then acquire the skills needed in the maintenance and development of some specific products for, say, 15 years." (*respondent: a regional subsidiary of a big engineering company, the subsidiary specialised in electronics; use: identification of the trend, nature of the trend, new features in the trend*)

71. "When designing enterprise resource planning systems, information on the client's industry plays an essential role. Understanding the client's operating environment and operational logic is also necessary for user training, which often takes the most of the ERP project's duration. Persons who have earlier worked in clients' fields are a good resource in this sense." (*respondent: a medium-sized IT company; use: identification of the trend*)

72. "We aim to expand our know-how in client sectors e.g. by means of small-scale acquisitions." (*respondent: a big IT services company; use: nature of the trend*)

*Specialisation according to the client's size and other characteristics*

73. "Our firm aims to get big companies as clients. Earlier we tried to direct our operations to small hi-tech firms, but they did not have money to purchase outside R&D services. Now the small firms that we serve are mainly spin-offs of big clients."

*(respondent: a small R&D firm; use: identification of the trend, factors retarding the progress of the trend)*

74. "In the Finnish auditing business, there has been a vacuum as regards the middle market. Our firm has exploited this, and it has given us a competitive advantage over the others. Now there are also other actors entering this field; often they are firms that have detached from the big ones or they are alliances of individual auditors."

*(respondent: a small auditing firm; use: factors supporting the trend, new features in the trend)*

75. "It is becoming clear that there are business opportunities for other types of accounting firms, too, than for big or very small ones. We also understand now that you need not try to obtain all kinds of firms as your clients." *(respondent: a small accounting firm; use: identification of the trend)*

76. "One possibility of surviving of small accounting firms is specialisation in small-scale entrepreneurs, such as taxi drivers, barbers, etc." *(respondent: a medium-sized accounting firm outside the metropolitan region; use: identification of the trend)*

77. "Family businesses in particular is the target group of our firm. We have developed some specific tools for serving these kinds of businesses, e.g. in situations where the business is transferred to a descendant." *(respondent: a small auditing firm; use: identification of the trend)*

78. "The specialty of our firm is the advertising of non-profit organisations, for example, of different kinds of charitable associations. Our solution is challenging from the viewpoint of expertise, because non-profit organisations do not belong to the traditional arenas of advertising." *(respondent: a medium-sized advertising agency belonging to a worldwide group; use: identification of the trend)*

*Specialisation in a few clients*

79. "Our company has made the intentional choice of focusing only on a few clients that operate on the global market. We have specialised in a very narrow sector in data communications technology. Companies which are relevant from our viewpoint, i.e. which we try to get as our clients, are large, complex and rapidly changing. Mapping out their needs otherwise than via human contacts would be too slow a method."

*(respondent: a medium-sized IT company, focused on product business; use: identification of the trend, new features in the trend)*

80. "Our company aims to promote the clients' business through e-solutions. We seek in-depth, challenging and strategic client relationships. In Finland our company has seven clients and framework agreements with them; in addition, we have a few foreign clients. All our clients are big companies, and the majority of them operate on the global market. We manage the whole value chain of our clients from business and product development to implementation." *(respondent: a big new media company; use: identification of the trend, nature of the trend)*



81. "Our firm's strategy is based on few, permanent client relationships. We have 15 regular customers; two of them are really key customers." (*respondent: a small industrial design firm outside the metropolitan region; use: identification of the trend*)

*Firms serving one company and spinning off the parent company*

82. "In some engineering firms more than half of the income comes from a certain service purchaser. For instance, in shipbuilding there are offices that serve one buyer only. New firms in engineering are often established in a situation where the parent company can employ only part of its original staff and suggests starting up a business for the others. After the recession of the first half of the 1990s, self-employment also played an important role in the branch." (*respondent: a professional association, technical services; use: nature of the trend, factors supporting the trend*)

83. "The technical department of a big Finnish dairy company lies behind our office. Later this department developed into an independent company. In the early stages it was still wholly owned by the parent company, but provided engineering services more widely, for the whole dairy industry. In the mid-1990s, the company was terminated in its then-current form, and three of its employees bought its construction-related parts. Nowadays our functions cover construction and systems engineering for the food, pharmaceutical and biotechnology industries, and to a certain extent also for other sectors. Our special fields of expertise are cooling technologies and the planning of spaces which require exceptionally high hygiene." (*respondent: a small multisectoral engineering office; use: nature of the trend, factors supporting the trend*)

*The problem of an excessive dependence on one or some clients*

84. "Our firm aims to develop its business so that it is not too dependent on one client only. We were once in a situation where nearly four fifths of our income depended on one firm. When this client was at risk of going bankrupt, we learnt our lesson." (*respondent: a small R&D firm; use: factors retarding the progress of the trend*)

85. "Today advertising agencies think that if they make over one fifth of their deliveries to one client, there already exists a big risk." (*respondent: a professional association, marketing communications; use: factors retarding the progress of the trend*)

*Taking into account the client's customers*

86. "We are a new media company specialised in Linux-based solutions. Our services cover both communications and business concepts linked with the Internet. In our work, we aim to identify, not only the needs of our own client firms, but also those of their customers, i.e. the needs of end users. We seek to understand the whole chain: how the consumer can be brought closer to the firm via the Internet. One central issue linked with this is the interfaces between man and machine. To be able to successfully develop these interfaces, we would need to know much more about human behaviour in relation to information technology, to understand the overall man-to-machine process in the case of new equipment." (*respondent: a small new media firm, merged with a big foreign company; use: nature of the trend, new features in the trend*)

87. "A general trend is that traditional advertising is not enough. The clients want that it is possible to master the whole chain of marketing communications with one cooperation partner, all the way to shop marketing and packaging design. All big advertising agencies aim to manage the chain in some form or another. The value

chain thinking as such is an old theme; what is new is that ideas which were dispersed before are now systematised. Keeping the promises included in advertisements is a particularly important stage. The traditional advertising agency concentrated on giving a promise, and the shopkeeper ensured that the promise was kept. Today the advertising agency's responsibility for the act of purchasing itself has increased; the product display and milieu planning are used to influence purchasing decisions." *(respondent: a medium-sized advertising agency belonging to a worldwide group; use: nature of the trend, new features in the trend)*

88. "The e-business ties the whole marketing communications to the act of purchasing, whereas earlier only the direct marketers were close to trading. Buying is coming into communications and thereby marketing communications are moving to a more serious area: it is part of successful selling. This calls for more deep understanding of the client's business, e.g. where to find the client's customers." *(respondent: a medium-sized advertising agency belonging to a worldwide group; use: nature of the trend, factors supporting the trend, new features in the trend)*

89. "The client bulletin business has grown as drastically as the Internet business during the past few years. Communications directed to restricted target groups have become a central part of the communications strategy of firms and other organisations. Magazines based on custom or membership are increasingly competitors to both ordered magazines and direct marketing. The online versions complement the printed versions; they can also be linked to e-commerce." *(respondent: a small firm editing client bulletins; use: nature of the trend, factors supporting the trend)*

90. "The significance of user perspective is increasing. For example, the consultation procedure included in the new Finnish Construction Code aims to reduce the expert's power and to guarantee that the layman's view is also heard." *(respondent: a small architectural firm outside the metropolitan region; use: nature of the trend, factors supporting the trend)*

91. "Architectural firms are drifting apart from the end user due to the rapidly spreading new forms of contracting (turnkey contracting, project management contracting): an office specialised in the provision of project management services usually acts as the user's representative in construction projects. Anonymous office spaces in particular, whose users are not at all known in the planning phase, are problematic from the viewpoint of architects." *(respondent: a small architectural firm; use: factors retarding the progress of the trend)*

#### **Trend 4: Broadening of the content of the service provided to the client**

##### *General statements about broadening of the service content*

92. "The clients want to purchase integrated wholes of services. This has been the reason for the emergence of the 'general grocer's shops' that offer many different expert services." *(respondent: a big five -company; use: identification of the trend, factors supporting the trend)*

93. "The position of service firms in financial administration becomes stronger, when the service palette they provide is wide - client firms want to buy their services from one and the same place." *(respondent: a big five -company; use: factors supporting the trend)*

94. "The original business idea of our firm was advertising brokerage. However, during the 1990s it became more and more important that the client could obtain all services from the same place. So today our operations cover the whole chain of communications services: advertising and telemarketing, client bulletins, marketing at fairs, market surveys, client events, information dissemination services, and publishing. If we are not capable of providing a service ourselves, it is provided through networking or sub-contracting contacts, or at least the client is informed about where to obtain the service." *(respondent: a small business communications firm; use: nature of the trend, factors supporting the trend)*

95. "One change happened in the 1990s is that managing of bigger wholes is now demanded from service firms. Earlier, software design was ordered from some place, mechanical engineering from another, etc. - the clients had tens of contacts to different expert firms. Now electronics, mechanics and software must be done by the same company, which means that there is someone who is responsible for the whole." *(respondent: a small R&D firm; use: identification of the trend, factors supporting the trend)*

96. "Considerations related to maintenance and upkeep are becoming all the more often an integral part of the design work in engineering companies." *(respondent: a professional association, technical services; use: new features in the trend)*

97. "Our firm is multisectoral by nature, its operations include both planning of houses and HVAC services, i.e. both architectural and engineering services. As our operations are based on the turnkey principle, we also offer project management services. This kind of diversity is a strength for a firm, but rare in the smaller Finnish engineering offices." *(respondent: a small multisectoral engineering office; use: nature of the trend)*

98. "When a client takes his business onto the web, it is important that he gets from one place all the related services: IT services, business process support, applications and services of e-business, new media applications and services, and solutions related to digital communications." *(respondent: a big new media company, originating in the IT sector; use: factors supporting the trend )*

#### *Packages and solutions*

99. "In the more developed accounting firms, the activities cover, besides financial administration and internal accounting, services related to starting up a business, evaluation of the profitability of investments, financial planning and services related to acquisitions. Our firm has developed particularly the monitoring of the situation of the clients; reports concerning this can be included in the service package that we provide." *(respondent: a medium-sized accounting firm outside the metropolitan region; use: identification of the trend, new features in the trend )*

100. "We have made broad service packages together with our partner, also abroad. They include both construction and process engineering; it is difficult to sell only construction planning." *(respondent: a small multisectoral engineering office; use: nature of the trend )*

101. "Earlier the central task of a legal expert was finding information, today everyone himself can access information; it is the solution that has become important." *(respondent: a professional association, legal services; use: identification of the trend, new features in the trend)*

102. "Mastering the whole has become important in legal services. Practising how to solve comprehensive problems should be an element in the education of lawyers." *(respondent: a regional subsidiary of a medium-sized law firm; use: identification of the trend)*

103. "Our firm conducts market surveys and develops the related software, and also other software. Our activities resemble enterprise resource planning, but the differing factor is that we aim to combine marketing know-how with the technology. We have developed an Internet-based steering and planning system for marketing; it covers market research, planning of marketing, sales management, and acquisition of client feedback. The system aims to combine commodification and tailoring." *(respondent: a small IT and market research firm outside the metropolitan region; use: nature of the trend, new features in the trend)*

### *Commodification*

104. "High volumes can be achieved in the IT sector, not only in the product business, but also in the service business. However, this calls for commodification of the services." *(respondent: a small IT firm, Internet and mobile services; use: nature of the trend)*

105. "Staged business development programmes are widely used in management consultancy services; these programmes often follow a certain consultancy 'theory' and a manual based on it. Among these programmes are the commodified consultancy services of the Ministry of Trade and Industry; due to their low price, they are important for small clients in particular. Our own firm, too, has worked in cooperation with the MTI in the provision of these kinds of consultancy services since the end of the 1980s." *(respondent: a small management consultancy firm; use: nature of the trend)*

106. "There are pressures to increase commodification in management consultancy. On the other hand, a problem-focused approach is also important and requires that there exists a possibility of tailoring." *(a medium-sized management consultancy firm, use: nature of the trend).*

107. "Our firm develops software packages, which organisations providing business advice (business incubators, technology centres, etc.) can use as supporting tools. Our software can be utilised e.g. in the analysis of entrepreneurial skills or a business idea, as well as in the evaluation of technology or development projects." *(respondent: a small IT and market research firm outside the metropolitan region; use: nature of the trend)*

108. "Some possibilities for commodification can be found in the sector of marketing communications, too. As an example, a profiling programme, which analyses the aims and objectives of the development of company image, can be mentioned." *(respondent: a medium-sized advertising agency; use: nature of the trend, new features in the trend)*

109. "Issues linked with IT and with the new forms of entrepreneurship (e.g. franchising) have replaced the earlier tasks of law firms. For instance, establishing a company is no longer a typical assignment as such; however, a lawyer may still be needed for helping in the decision concerning the specific corporate form. As regards commodification, the term should not be used for those very simple cases where routines are carried out electronically: transferring forms onto the Internet is not yet commodification. In our firm, a genuine commodified service is the monitoring of

trademarks, which means that the client is regularly informed of the emergence of competing trademarks." *(respondent: a small law firm; use: nature of the trend)*

110. "In legal services, commodification is an important issue from the viewpoint of the future. For example, the background studies and contracts in acquisitions could be commodified as well as the inspections related to competition law. In legal practice, it has been difficult to name the price for each service; in the future, the services will receive a fixed price." *(respondent: a medium-sized law firm; use: nature of the trend, new features in the trend)*

#### *Modularisation*

111. "In the legal sector we must reevaluate our traditional attitudes. Sometimes it seems that the lawyers believe their expertise being so unique that the usual laws of business do not concern the sector. Commodification is one thing which we have to develop. It means that we make modules that can then be tailored to the needs of our clients. Commodification and modularisation are possibilities, not threats - they do not mean that all the corners will be cut straight, but that we develop our working methods and divide the work into clear stages. Then the client knows what he gets and what he pays for." *(respondent: a small law firm outside the metropolitan region; use: nature of the trend, new features in the trend)*

112. "In the electronics industry, products are designed to be modular: a mobile phone, a camera and an iron are made of the same components." *(a regional subsidiary of a big engineering company, the subsidiary specialised in electronics; use: nature of the trend)*

113. "Today everything is tailored on the basis of packages. Packages are produced for the different stages of construction: cooling systems, special pipings, etc." *(respondent: a small engineering office, building services; use: nature of the trend)*

114. "Component-based software production is gaining more and more ground in the IT sector." *(respondent: a medium-sized IT company; use: identification of the trend)*

115. "At the beginning of the 1990s, the prevalent opinion was that the IT sector will concentrate more and more on the production of packaged software, which needs very little tailoring. This has not happened. One reason is that big organisations have high amounts of old technology, of which some parts are being modernised all the time. Information systems are evolutionary by nature; they require understanding, and this again - service. To enable integration of new parts into the existing system, you have to manage the whole and know the history of the system: all the applications, tools and languages used. At the same time it is important that modularisation, whose potential object-oriented programming has highly increased, is utilised in the service business based on tailoring." *(respondent: a medium-sized IT services company; use: identification of the trend, factors supporting the trend, new features in the trend)*

116. "Modern client-specific IT systems are quite something else than the traditional tailored IT solutions. Big companies in particular need client-specific systems. When thousands of employees have been used to act in a certain way, software and systems are adjusted to this way of acting. In the SMEs, the process can be carried through vice versa: the operations are adjusted to the ready-made software." *(respondent: a big IT company outside the metropolitan region; use: nature of the trend)*

### *Problems*

117. "Understanding the client's way of thinking is essential in legal services, and therefore it is better that the client relationship is channelled through a personal contact. Commodification of advisory services and their conveyance through the Internet include a serious risk of mistakes." (*respondent: a small law firm; use: factors retarding the progress of the trend*)

118. "When services are conveyed electronically, there is the risk that the client contacts become looser. Auditing has just got rid of the image of a tax inspector - keeping up and developing good personal relationships would be very important now." (*respondent: a big five -company; use: factors retarding the progress of the trend*)

## **Trend 5: Spreading of consultative working procedures**

### *Description of the consultative way of working and the co-production of services*

119. "In our client relationships, our role is not that of an outside adviser, but we work together with the client. We mainly work in the client's premises, and as the client relationships are usually long, it may be that our consultant stays in the client firm for several years." (*respondent: a management consultancy company belonging to the big five; use: nature of the trend*)

### *Potential KIBS: firms moving from detached assignments to consultative procedures*

120. "When serving small and medium-sized clients, accountants have to be general experts, as it is just accounting firms which - compared with other business services - have the most regular contacts with SMEs. The accounting business is developing in a consultancy-like direction, away from performing individual assignments. Now and then you come to think: my work is in fact the work of a consultant." (*respondent: a small accounting firm outside the metropolitan region; use: identification of the trend, new features in the trend*)

121. "In accounting firms there is a tendency towards advisory services: the client's general business situation is actively investigated and alternatives are presented. Accounting skills themselves also change, when the material is becoming electronic. The verification of the correctness of reports and evaluation of their appropriateness become important." (*respondent: a medium-sized accounting firm outside the metropolitan region; use: identification of the trend, factors supporting the trend, new features in the trend*)

### *Movement from other KIBS branches towards management consultancy*

122. "IT firms must possess know-how in consultancy, particularly when it comes to tailoring and take-up of software. On the other hand, the traditional consultancy is in crisis, if it ignores IT development." (*respondent: a medium-sized IT company, use: nature of the trend*)

123. "Internet- and e-business technologies are the main fields of operation of our company. We are a technologically oriented company - not a content provider. On the other hand, we are among the spearhead companies in the Finnish new media sector regarding the adoption of consultative ways of working. We have a partnership-type

pattern of cooperation with our clients. The cooperation starts with examination of the client's business, i.e. with consultancy and mentoring; after that a suitable technical solution is looked for. Our activity goes rather deep in the areas of management consultancy, process consultancy and logistics consultancy." *(respondent: a medium-sized new media company; use: nature of the trend, new features in the trend)*

124. "Earlier good lawyers were supposed to give legal advice, now they have to give more general advice with a legal rooting. Mastering of broader wholes has nowadays become important, and this has drawn the roles of a lawyer and a consultant closer to one another." *(respondent: a regional subsidiary of a medium-sized law firm; use: identification of the trend, factors supporting the trend, new features in the trend)*

125. "Cooperation between advertising and consultancy is becoming tighter. In fact, the basic job title in advertising could be 'consultant in marketing communications' ". *(respondent: a professional association, marketing communications; use: identification of the trend)*

126. "In practice, advertising agencies provide management consultancy services. A brand strategy is created at an advertising agency; advertising agencies influence processes that are in the very core of the business model of the clients." *(respondent: a medium-sized advertising agency; use: nature of the trend)*

127. "Staff training firms aim at long-term client relationships. The idea of life-long learning can best be realised, when cooperation between the trainer and the client is continuous, and training is provided at regular intervals. Training firms may also provide other staff development services, e.g. core competence measurements and analyses of the general working atmosphere, as well as management consultancy related to change processes." *(respondent: a medium-sized training company belonging to an international chain; use: nature of the trend)*

128. "During the recession of the early 1990s, a high number of unemployed engineers moved into the field of management consultancy, especially to quality management consultancy, which had become popular at the same time. The economic cycles do not affect much the demand for management consultancy - during a boom there is money and during a recession there are problems - both increase the use of consultants." *(respondent: a small management consultancy firm; use: nature of the trend, factors supporting the trend)*

#### *Multisectoral consultancy*

129. "Through the ages auditors have given their clients general advice, too. Today especially corporate restructuring, i.e. acquisitions and mergers, increases the need for advisory services. Professional diversity is based on the needs of clients, and e-business still increases the need for combining expertise from different branches. In concrete situations, the question may, however, be also of profitability: consultancy is more profitable than auditing." *(respondent: a professional association, auditing services; use: identification of the trend, factors supporting the trend)*

130. "Our firm has a global network in all the sub-sectors of its activities. On the other hand, we also aim to spread know-how to small-scale domestic clients. We have organised work inside our firm so that each expert has a few big clients and a number smaller ones. In small client firms the challenge is that auditing also gets done - the

pressure towards more general discussion about the development of the firm is great.”  
(respondent: a big five -company; use: factors supporting the trend)

131. "For disqualification reasons, the big 5 -companies have to give up management consultancy; partly this change has already been done. On the other hand, the activities that an auditing firm is allowed to carry out still contain much more than mere auditing. Our company has merged this year with a big IT firm and our consulting operations have been transferred over to that firm. Our competitors in the consultancy field are other IT houses and the consulting units of big 5 -companies, most of which are now operating independently". (respondent: a big five -company; use: factors retarding the progress of the trend, new features in the trend)

132. "The connection between information technology and management consultancy has become tighter, but it is important to note that this phenomenon is not wholly new. Already in the 1970s the growing role of IT experts caused the worry that they tramp on the firms' management." (respondent: a professional association, IT services; use: identification of the trend, nature of the trend)

#### *Firms having the traditional management consultancy perspective*

133. "Competition in the management consultancy business has been tightening all the time. Competitors come from big IT houses and from auditing firms; public-sector organisations providing business advice can also be counted among competitors. The small management consultancy firms that are specialised in developing the operative activities of a certain client industry have, however, a strong foothold. The consultants in these firms have often worked earlier in their target industry and know its processes with accuracy that the big multisectoral consultants can never reach." (respondent: a small management consultancy firm; use: identification of the trend, nature of the trend)

134. "Small management consultancy firms can compete with multisectoral consultants due to their industry-specific know-how that goes deep into product and production technology. They can also compete in strategy work and in staff training by relying on consultancy theories and by analysing the client's practical needs with tools developed on the basis of these theories. Consultants coming from other sectors, e.g. from the IT business, often mistakenly suppose that the basic strategy of the client is in order, and only certain specific solutions need to be added." (respondent: a small management consultancy firm; use: nature of the trend)

135. "Surveys of the working atmosphere and development of working communities are not in general included in multisectoral consultancy, as expertise in these fields does not belong to the strengths of consultants coming from outside the actual management consultancy sector. All in all, combining of services has its risks. For example, a consultant carrying out client analyses must be aware of not becoming, on the basis of the problems he detects, a 'project generator' - the clients shun these kinds of consultants." (respondent: a medium-sized management consultancy firm; use: nature of the trend; factors retarding the progress of the trend)

136. "Besides that firms providing communications services consider it necessary to support their clients also more broadly in business management, development is taking place the other way round, too: management consulting companies are entering the communications sector." (respondent: a big advertising agency belonging to a worldwide group; use: identification of the trend)



137. "We operated for nearly twenty years as an independent management consultancy firm. Last year we became part of a bigger company established by a capital investment firm. Besides capital investments and management consultancy, the new company provides legal and auditing services. On a small and dispersed market area, such as ours, a multi-professional approach is important, and a small firm can achieve it by joining a bigger company." (*respondent: a small management consultancy firm outside the metropolitan region; use: nature of the trend*)

#### *Problems*

138. "The title of consultant has suffered an inflation: everybody wants to be called consultant. If the activity contains the least bit of advice or overall service, it is referred to as consultancy. However in fact, consultancy calls for an in-depth analysis of the client's situation and development work performed in cooperation. It is easy to enter the consultancy sector, but only part of the newcomers can be taken seriously." (*respondent: a small management consultancy firm; use: nature of the trend, factors retarding the progress of the trend*)

139. "The choice whether a consultancy service is purchased from a new media company, management consultant or from an IT house is largely determined by the fact which department in the client firm makes the decision. If it is the marketing department, consultancy focused on communications is acquired e.g. from a new media company. If the decision-maker is the information management unit, the service is bought from an IT house, since it is a natural partner and the contacts are often already there." (*respondent: a medium-sized new media company belonging to a worldwide advertising group; use: nature of the trend*)

### **Trend 6: Convergence among the KIBS sub-sectors and between KIBS and the neighbouring sectors**

#### *General comments and examples of convergence*

140. "A general societal trend is that different services gather together and then again specialise. The convergence that we are witnessing today is not something totally new. For instance, similar development that is now going on in multi-sectoral auditing firms was in progress in banks in the 1980s - many kinds of services accumulated in them." (*respondent: a professional association, auditing services; use: identification of the trend*)

141. "The fields of marketing communications, product development, management consultancy and software planning are now approaching each other; there are similar functions within them. It may be that differentiation on a new basis will start after this development phase." (*respondent: a medium-sized new media company belonging to a worldwide advertising group; use: identification of the trend*)

142. "Planning of marketing strategies is an activity close to management consultancy. Consultancy, advertising, auditing, law firms, the web world, and information agencies operate in tight interaction." (*respondent: a small advertising agency; use: identification of the trend*)

143. "Marketing communications include three different fields of expertise: expertise in influencing the human mind, expertise in business, and expertise in advertising tools.

Tools experts specialised in new technology have bought some advertising agencies. E-business consultants are also penetrating the advertising sector - they need know-how about influencing the human mind." (*respondent: a medium-sized advertising agency belonging to a worldwide group; use: identification of the trend, new features in the trend*)

144. "Competition in legal services has increased. Auditing firms are penetrating the sector; they hire lawyers e.g. for cases related to business start-ups and tax consultancy. Consultants engaged in financing and in corporate arrangements have also expanded their operations to legal matters." (*respondent: a professional association, legal services; use: identification of the trend*)

145. "Auditing firms provide some services similar to those provided by law firms. Forms of cooperation are currently searched for. Some convergence will no doubt take place, but common offices will hardly be set up." (*respondent: a small law firm outside the metropolitan region; use: identification of the trend*)

146. "Copyright issues create linkages between legal services and advertising services; some lawyers have e.g. specialised in media law. The linkages will increase along with the advancement of e-commerce." (*respondent: a professional association, marketing communications; use: identification of the trend, factors supporting the trend*)

147. "Legal services come close to consultancy e.g. in protection of trademarks. Lawyers participate in clients' planning activities; their role is that of a critical coach. A law firm may also act in cooperation with a management consultant: the consultant may e.g. lead the change process, and the lawyer looks after that the solutions regarding property rights fit the whole. Our firm works in cooperation with franchising consultants in particular." (*respondent: a small law firm; use: nature of the trend*)

148. "Expertise and proficiency mean that you have understanding, not only of your own field of speciality, but also of the interfaces to other fields." (*respondent: a regional subsidiary of a big engineering company, the subsidiary specialised in electronics; use: nature of the trend*)

#### *KIBS functions that by nature require cooperation of several fields*

149. "Media offices also provide staff recruitment services, when the clients are looking for personnel through the media. We help our clients make the choice of the media. Here, it has to be taken into account that recruitment notices have already for long had an image-building function besides their actual purpose." (*respondent: a medium-sized company, media planning; use: nature of the trend*)

150. "Recruitment is closely linked with staff training and thereby with consultancy. Recruitment firms operate in close cooperation with the media and advertising agencies, too. An increasing part of recruitment notices serves image advertising. Except for the most traditional occupations, the real nature of today's work is hard to describe - due to this, it is the attractiveness of the firm itself that counts. The main purpose of a recruitment announcement in the printed media may be to get the reader to look for the firm's website." (*respondent: a medium-sized personnel recruitment firm belonging to an international chain; use: nature of the trend*)

*The idea of the “new media” -industry*

151. "A new media house can be defined to be one that produces content for new terminals and the systems supporting it; content production can be analog or digital. The sub-sectors of the activity are: IT, design and consultancy; consultancy relates to customer relationship management, change management, etc. The involvement of consultancy is an interim stage, which is necessary, because clients are not familiar with the electronic world. In the future, the new media sector will focus more on its core expertise." *(respondent: a big new media company; use: factors supporting the trend, new features in the trend)*

152. "We are a new media company with the main stress on the marketing communications side - not on the IT side. Our office was established after the mid-1990s to provide Internet consultancy which starts from on a communicative and advertising-oriented perspective. Half of our operations are still of this kind; the other half is consultancy concerning business models: how the web supports the current business of a firm and how it helps to develop a new kind of business. Management consultancy, marketing and software consultancy are linked together in our operations. In addition to the new media units of advertising agencies, IT houses, management consultants and teleoperators offer this kind of service combination. In fact, a wholly new industrial sector has emerged: the new media sector." *(respondent: a medium-sized new media company belonging to a worldwide advertising group; use: identification of the trend, new features in the trend)*

153. "The IT world and the advertising world are approaching each other. It can be said that the tasks which our firm carries out by using the web correspond largely to tasks which the advertising agencies carry out by using the traditional media. According to our view, the fields of communications, information technology and business development will become united. The markets for e-business and new media will continue to grow at the annual rate of 60% - 80%." *(respondent: a big new media company, originating in the IT sector; use: identification of the trend, new features in the trend)*

154. "The know-how that our clients need divides into two main areas: the area of contents and the area of IT. Our firm has a separate, technologically focused new media unit. Growth in the new media sector will be 50% a year." *(respondent: a medium-sized advertising agency; use: new features in the trend)*

155. "Considering new media separately is artificial; soon the Internet is not newer than the colour TV in its time. New media as a sector will vanish; the corresponding functions will be carried out by media offices, advertising agencies, software houses, consulting firms and TV companies." *(respondent: a medium-sized new media company outside the metropolitan region; use: factors retarding the progress of the trend)*

156. "The development of information technology is connected with many unclear concepts; the concept of 'new media' is a good example of this." *(respondent: a big multisectoral engineering company; use: factors retarding the progress of the trend)*

*Convergence that emerges from the presence of IT in the processes of other sectors*

157. "The strong role of information technology in financial administration has created the need for cooperation with the software business in the case of both the accounting

and the auditing sector. From the viewpoint of accounting, the ideal situation would be cooperation and common ownership with a sufficiently big IT house." (*respondent: a medium-sized accounting firm outside the metropolitan region; use: factors supporting the trend, new features in the trend*)

158. "Our company's newest line of business is financial management: developing and applying IT solutions in the accounting sector. Our aim is to be, not only a software house, but also the biggest accounting firm in Finland within the next couple of years. Through financial management, we will be able to expand our operations to various regions in the country; we aim both to set up new offices and to buy existing local accounting offices. We intend to modernise the basic work in financial administration. According to our view, one of the biggest structural changes within the next few years will happen in the accounting firms: the present working culture will disappear within the next 5 - 15 years. Routine work will die out along with IT innovations; this kind of work can be done with the tenth of the present number of staff. Advisory services and services targeted to developing the client's operating processes will rise as new forms of activity. The accounting offices will change into expert service companies producing value added for the client." (*respondent: a medium-sized IT company; use: factors supporting the trend, new features in the trend*)

159. "We offer our clients an overall financial administration solution based on the principles of the new economy - real timeliness, electronification and foresight. If the client wants to keep the books himself, we provide consultancy and the necessary data systems as an ASP service, but we are also ready to do the accounting on behalf of the client. Our operations are based on the concept of virtual accounting office, which means that the functions of financial administration are performed as an almost fully paperless service, and the accounting is created automatically in connection with purchases, sales, payments of wages and salaries, etc. Calculations and reports can be made whenever and wherever for the desired period to time. By means of rolling budgeting, we upkeep the picture of the client company's future development and warn of any problems. We convert the targets set by the client into the profit, balance sheet and cash flow estimates of the future." (*respondent: a medium-sized accounting firm, merged with an IT company; use: new features in the trend*)

160. "The topicality of the IT has been beneficial from the viewpoint of industrial design. User interfaces play a central role in IT equipment, and the usability requirement, which has always been emphasised in industrial design, is now spreading to almost all sectors. Installability and serviceability are also closely connected with usability. Besides usability, the image is important; design is an activity between marketing communications and engineering, being more and more linked with both of them. Advertisements must include the same messages that design seeks to put in practice. Earlier, designers acted in companies together with product developers; today marketing, sales and company management are also involved." (*respondent: a small industrial design firm; use: factors supporting the trend, new features in the trend*)

161. "Previously, designers only created the shapes, took the money and left - engineers tried to implement the designs. Today designers are responsible for what they create. They are members of projects from design to product development and further on to production, also at the client service stage. Design goes deep into product development and into marketing, too." (*respondent: a small industrial design firm outside the metropolitan region; use: new features in the trend*)

*Convergence of the KIBS sector with the other main sectors*

162. "Buying and selling documents are increasingly transferred electronically. Linked with this, big IT companies and banks set up service centres, so-called "receipt hotels". It remains to be seen whether the accounting business remains a sector of its own or whether it merges with these service centres." (*respondent: a small accounting firm; use: new features in the trend*)

163. "Organisatory solutions regarding electronic archiving, which is developing as a part of paperless financial administration, are still partly open. At present, traceability is emphasised, and therefore there is much talk about "receipt hotels". However, it may be that the present situation is temporary by nature. On the other hand, it is also possible that the "receipt hotels" become major, global companies." (*respondent: a medium-sized accounting firm, merged with an IT company; use: new features in the trend*)

164. "Investment banks and commercial banks are competitors to the auditing firms in the provision of financial administration advice. Banks participate more and more in corporate arrangements." (*respondent: a big five -company; use: identification of the trend, new features in the trend*)

165. "The operations of investment banks, law firms and auditing firms are near each other in acquisition arrangements and in other cases of corporate financing. For instance, law firms are today looking for capital investors for their clients." (*respondent: a medium-sized law firm; use: new features in the trend*)

166. "Many law firms carry out real-estate brokerage and house manager activities." (*respondent: a professional association, legal services; use: nature of the trend*)

*Intermingling of the industrial and service functions*

167. "Earlier, our company was thought to be mainly a computer merchant. The share of hardware sales is still around half of our operations, but it will decrease and the service proportion will increase. Our aim is to be a full service IT partner in the new economy, which means that we seek to understand the business of our clients and to provide them with IT solutions on this basis. Priorities in our future activities will be management consultancy and new issues, such as digital media services, IT security services and location services." (*respondent: a big IT company; use: nature of the trend*)

168. "The IT service providers, content providers and teleoperators will be more and more intermingled." (*respondent: a professional association, IT services; use: identification of the trend*)

169. "The activity of our firm covers the planning of the mechanics, hardware and embedded software. The mechanics also includes design and modelling - our strategy is based on comprehensive service products." (*respondent: a regional subsidiary of a big engineering company, the subsidiary specialised in electronics; use: nature of the trend*)

170. "Our firm offers automated monitoring systems for buildings and local areas. Our operations include both design of these systems and their production according to the

turnkey principle." *(respondent: a medium-sized engineering company, building automation; use: nature of the trend)*

171. "In the Scandinavian countries, technical consultancy and implementation are in general separate activities. The aim is to keep designers independent of suppliers of materials. Elsewhere in the world, it is however common that engineering companies function as building contractors, for example." *(respondent: a medium-sized multisectoral engineering company outside the metropolitan region; use: nature of the trend)*

*Progress of the convergence through wide-scoped recruitment, acquisitions etc.*

172. "In the advertising sector it is more and more important to be an expert of many fields. In the training of students, it would be ideal if economic and business administration, design training, and social psychology specialised in consumer research could be combined. Further training based on this idea is already being developed for advertising." *(respondent: a professional association, marketing communications; use: nature of the trend)*

173. "Designing of learning environments keeps becoming more important, and it should be noticed that an engineering company itself is a learning environment, too. Something new is being done all the time, and the employees appreciate cooperation of experts of different fields. In our company we have road and bridge engineers, traffic forecast and traffic model engineers, geotechnicians, housing architects, industrial designers, graduate foresters, gardeners and sociologists." *(respondent: a medium-sized engineering company, community planning; use: nature of the trend)*

174. "Environmental issues, e.g. assessment of environmental impacts, have become more important in technical services. 'Soft side' experts - biologists, limnologists and agronomists - have entered community planning, but not so much other engineering sectors." *(respondent: a professional association, technical services; use: nature of the trend)*

175. "The staff of a new media company must have very diversified professional skills. Firstly, new media is one of the first sectors in which technical and art professionals work together. The staff of a new media company may include programmers, system specialists, industrial designers, graphic artists, picture and voice professionals, and scriptwriters. In addition, persons who know how to analyse the needs of the clients and end users - marketing communications experts and psychologists - are demanded. Finally, consultants are needed to find out, together with the client, how new media can support business processes." *(respondent: a medium-sized new media company outside the metropolitan region; use: nature of the trend)*

176. "Our company aims to guarantee versatile human resources through acquisitions, recruitment and internal training. We have just made a major acquisition in the new media sector, and some new acquisitions related to e-business and new media are under consideration." *(respondent: a big new media company, originating in IT sector; use: nature of the trend)*

177. "Last year we bought six other firms. With these acquisitions we aim above all to expand our programming expertise, but also know-how related to our clients' business; due to the latter aim, we bought an engineering firm engaged in logistics." *(respondent: a medium-sized IT services firm; use: nature of the trend)*

178. "Continuous corporate arrangements are a central feature of today, especially in sectors related to new technology. Acquisitions and corporate restructuring are going on all the time; they are one means through which growth is sought for." (*respondent: a regional subsidiary of a medium-sized law firm; use: nature of the trend*)

## **Trend 7: Concentration tendencies**

### *Background to concentration*

179. "Globalisation is the central background factor in the growth of big five - companies: when a client sets up a subsidiary in another country, it wants a similar service. Secrecy demands also have an effect: it is easier for a big global group to work with one and the same service provider in the issues concerning its financial administration." (*respondent: a professional association, auditing services; use: factors supporting the trend*)

180. "Finnish law firms are dividing into two groups according to their size: into big companies, the number of which will grow to about ten within the next few years, and into small 1-2 lawyers' offices of the boutique type. The underlying reason for the establishment of big law firms is that only they can serve on the international level. Internationalisation is connected with the need for specialised know-how. In big firms, lawyers can specialise in environmental issues, information technology or in corporate restructuring, for instance. Medium-sized offices, which try to do a bit this and that, are in trouble and potential targets for chains aiming to expand - both for the international chains of the legal sector and for the big 5 -chains." (*respondent: a medium-sized law firm; use: identification of the trend, factors supporting the trend*)

181. "If a big international client decides to use a certain advertising agency, it is used all over the world. The biggest advertisers are international and the advertising decisions are often made abroad. In some cases a local advertising agency may win a fight for a client, but in general it is the head office that decides the use of a certain advertising agency - and correspondingly stopping of its use." (*respondent: a big advertising agency belonging to a worldwide group; use: factors supporting the trend*)

### *Big five -companies*

182. "Since the 1980s, strong concentration has taken place in auditing. International big 5 -companies dominate half of the markets of the sector in Finland, too." (*respondent: a professional association, auditing services; use: identification of the trend*)

183. "The big 5 have made the strategic decision to enter the legal service sector." (*respondent: a medium-sized law firm; use: new features in the trend*)

### *Sector-specific international chaining*

184. "International ownership has been typical of Finnish advertising firms since the 1980s. If there is no international ownership, there is at least a cooperation chain." (*respondent: a professional association, marketing communications; use: identification of the trend*)

185. "Three fourths of the world's advertising go through the ten biggest chains. All the big chains also operate in Finland, and except for two, all the major Finnish advertising agencies belong to them. The sector is becoming more and more concentrated both in Finland and internationally." *(respondent: a big advertising agency belonging to a worldwide group; use: identification of the trend)*

*Sectors concentrating nationally*

186. "There are only few foreign engineering companies in Finland: foreign companies have bought Finnish ones rarely. As regards internationalisation of Finnish companies, Pöyry is in a class of its own. Generally you have to be locally present in engineering services - side by side with the client." *(respondent: a professional association, technical services; use: factors retarding the progress of the trend)*

187. "In engineering consultancy, competition coming from other countries seems minor for the time present. Internationally there will be concentration, but the Finnish market is so small that there is no great interest in it. In the course of time it is, however, possible that an interest towards Finland will be awakened as a secondary effect, as the big companies establish themselves in the medium-sized countries." *(respondent: a medium-sized multisectoral engineering company outside the metropolitan region; use: identification of the trend, factors retarding the progress of the trend)*

188. "Civil engineering is a domestic and locally oriented sector. The nature of the job requires local presence at the project site. Knowledge concerning local circumstances and national systems plays an important role. Due to the significance of field work, an organisational model consisting of regional offices is typical of this sector. In our case, 90% of the work comes from our own region. The only major acquisition of a Finnish company in the civil engineering sector has been the purchase of the Viatek group by the Swedes." *(respondent: a small civil engineering office outside the metropolitan region; use: factors retarding the progress of the trend)*

189. "Competition from abroad is not a threat in the sector of architectural services in Finland; even joining international chains is rare, although there are chains in the world." *(respondent: a small architectural firm; use: nature of the trend)*

190. "Law firms lag about ten years behind the auditing firms, but follow the same pattern in their development: first they grow locally, then join an international chain, and then the chains expand their operations. The alternative to joining an international chain is merging domestically; in fact, this development has been in progress in the case of Finnish law firms for the past 3-5 years." *(respondent: a medium-sized law firm; use: identification of the trend)*

191. "International chaining is beginning in legal services. Big European law firms are on the move, and maybe American ones will follow them - at present there is only one U.S. based law firm in Finland. Attempts for Nordic chaining have also been made several times, but not with any particular success." *(respondent: a medium-sized law firm; use: identification of the trend, new features in the trend)*

192. "Although certain areas of law are still strongly country-specific, half of the statutes applied in Finland, for example, have already been drafted outside the borders of our country. The share of statutes drafted on the EC level is especially high in



competition law and in environmental protection law." *(respondent: a medium-sized law firm; use: factors supporting the trend)*

#### *Sectors dominated by small firms*

193. "In accounting, the future prospect is concentration: work will increase in those offices which keep up with the development. Instead, self-employed may be tramped on - many of them will probably become hired employees of bigger firms." *(respondent: a small accounting firm outside the metropolitan region; use: identification of the trend)*

194. "Compared to the overall situation in Europe, there is an exceptionally high number of very small management consultancy firms in Finland; the number of firms with 1 - 5 employees is considerable." *(respondent: a small management consultancy firm; use: nature of the trend)*

#### *Benefits of a small company size*

195. "Our firm has 14 employees; the target is 20 employees at the most. Our business idea is that we are the best engineering office in the matters of indoor air and energy in Finland. We do not seek high volumes, but standing out in competition by know-how and quality. In general, our sector competes with price, and there are too many offices that do not have special expertise of their own, but do everything. This is typical of old, mature sectors that do not represent high technology and do not develop dynamically anymore." *(respondent: a small engineering office, building services; use: nature of the trend)*

196. "Growth is not the prime goal of our firm. It is more glorious to get the world's market leader as one's client than growth as such. Human capital in a firm must grow in the same proportion as the growth of business." *(respondent: a small industrial design firm outside the metropolitan region; use: nature of the trend)*

197. "Small IT firms are often more innovative, because they have included product development in their processes, unlike the big companies, where everyday activity is focused on already existing products and product development operates as a separate unit." *(respondent: a medium-sized IT company; use: factors retarding the progress of the trend)*

198. "Our office has grown moderately, not very fast, as we have wanted to foster our good working culture and the high quality emerging from it." *(respondent: a small advertising firm; use: nature of the trend)*

199. "Although our firm has grown fast for the past few years, growth is not our prime goal. We want to be a quality leader and maintain the craft shop nature of our business." *(respondent: a small firm editing client bulletins; use: nature of the trend)*

200. "Small clients often want their consultant also to be a small firm, which 'lives' with them, i.e. is committed to the development work and makes the client firm's management to commit itself, too. The service of big multi-sectoral consultants is less tailor-made, and as such easily detached by nature. As the big service firms often apply the turnkey principle, it may be that the consultant does not carry out the development project together with the client, but on behalf of the client. This in turn leads to a situation where the services of the consultant are needed continuously; the

consultant may stay in the firm for years.” (*respondent: a small management consultancy firm; use: factors retarding the progress of the trend*)

*Networking as the competitive means of small KIBS firms*

201. “By networking, i.e. by adopting a common mark and by acquiring and sharing common expertise, small law firms can get close to the business concept of the big ones.” (*respondent: a medium-sized law firm; use: new features in the trend*)

202. “Networking helps you to keep up with the competition. Our firm has many kinds of network connections, for example in intellectual property rights issues. Contacts are maintained, among others, to patent officers and to companies that are specialised in determining the value of technologies.” (*respondent: a regional subsidiary of a medium-sized law firm; use: nature of the trend*)

203. “The big five -companies have been centred on big clients, but some of them are now entering the SME sector, too. Due to this, the smaller auditing firms must be ready to join international networks, so that they would not be left without assignments. In Finland there are also domestic networks in the auditing sector; some networks have been transformed later into a company form.” (*respondent: a professional association, auditing services; use: identification of the trend, new features in the trend*)

204. “The client bulletin business is network business by nature. In our firm, important networking partners are independent content producers and technical implementers; we have a tight and continuous contact with them.” (*respondent: a small firm editing client bulletins; use: nature of the trend*)

205. “Small management consultancy firms have many kinds of networks. These networks are often informal, but common bids are also placed. In the consultancy sector, the number of firms which operate a short time and then drop out of the market is high. If you are not part of a network, you easily fall into this group.” (*respondent: a small management consultancy firm; use: nature of the trend*)

206. “We work as consultants in the textile and clothing industry, where manufacturing is moving away to more and more distant countries. In such a situation, participation in a network is the only possible survival strategy. Networks do not only relate to the actual business, but also to development of the service - in our case for example, to development of information systems and logistics for the clothing industry. Network contacts to universities are also important.” (*respondent: a small management consultancy firm; use: nature of the trend*)

207. “Small engineering offices have abundant horizontal linkages. The boundaries between offices may be vague - work is channelled to partner firms, too.” (*respondent: a professional association, technical services; use: nature of the trend*)

208. “In the IT sector, there are many informal networks - business fraternity, which supports innovation. The sector is a forerunner in this respect; other sectors are following its example. Especially firms that are in the software product business compete primarily with foreign companies, not with other Finnish firms.” (*respondent: a professional association, IT services; use: new features in the trend*)

*Objectives and working practices of large KIBS*

209. "A benefit of an international chain is that you need not to develop one and the same thing twice. For instance, when facilitation of a complex corporate arrangement is involved, you will just find out who in the chain has previous experience of that kind of a case. As our chain encompasses globally over 100,000 experts, there is always some who knows. In connection with big acquisitions, information is exchanged between the different parties, i.e. between the competitors, too." (*respondent: a big five -company; use: factors supporting the trend, new features in the trend*)

210. "The big five -companies must be centres of expertise: you have to find top experts somewhere, and training to become an expert must also be somewhere." (*respondent: a big five -company; use: factors supporting the trend*)

211. "In order to widen the range of services, firms have to join their forces; at times they are competitors, at others they are partners. For example, we have trained our competitors in a situation where our client has bought a system from us and different engineering firms work with it." (*respondent: a big multisectoral engineering company; use: new features in the trend*)

212. "Our competitors consist mainly of the other big five -companies, of a few big management consultants and of IT houses. However, we also come across all the more often with small-scale actors, especially in issues related to the e-business. Besides competition, cooperation is needed - it is no longer possible to do consultancy work alone. Typically a group of consultants is needed: a strategy consultant, a consultant in change management, a consultant developing systems and technology, a sectoral expert and often also a consultant who knows well certain special issues, e.g. issues linked with the EU." (*respondent: a management consultancy company belonging to the big five; use: new features in the trend*)

213. "Our aim is to build up networks towards small firms, too, especially when they operate in new fields. For instance, small new media firms function as feelers for us, so that we know which way to follow." (*respondent: a big IT services company; use: new features in the trend*)

*Regional inequality and possibilities for its alleviation*

214. "Along with the changeover to electronic book-keeping, the infrastructure of accounting will radically change, and considerable concentration will happen in the sector. There will be polarisation, too: 'homespun registrar's offices' that do not bring much value added to their client firms are a problem, particularly outside the Helsinki metropolitan area. They will not get along with their present way of operation." (*respondent: a professional association, accounting services; use: identification the trend, factors supporting the trend*)

215. "The contents of the face-to-face interaction with the client has changed. Ten years ago the clients came personally to the accounting firm to bring their receipts; now the receipts are no more brought personally - instead, the client comes in order to discuss about his business. Accounting services are needed in remote regions just because of this: the personal advisory service must be near. The routines of financial administration can be handled from any place." (*respondent: a medium-sized accounting firm outside the metropolitan region; use: nature of the trend*)

216. "In the legal sector, extending services from the metropolitan area to regions is one of the most topical issues at present. Expertise would be needed especially in international law, but in business law more generally, too. For instance, there is an urgent need at technology centres for legal consultancy targeted to entrepreneurs starting their operations." (*respondent: a medium-sized law firm; use: nature of the trend*)

217. "A very even geographical distribution is not possible in the case of the IT sector. Reasonable locations for IT companies are only regional centres which are big enough. There should be at least a few big client companies and enough supporting services. Due to innovative contacts, the most favourable locations are regions with universities and centres of expertise." (*respondent: a professional association, IT services; use: nature of the trend, factors supporting the trend*)

218. "The branch that we represent is the most dynamic and most rapidly growing branch of engineering within our group. The activities concerning this branch are led by our regional unit, not by the head office in Helsinki. Our unit has an image meaning for the whole group: we are youthful and international, we participate in international projects and our partners are international. A location outside the capital offers many benefits: people know each other, and they are genuinely innovative and possess entrepreneurial spirit. It is important to be located in a technological growth centre, where knowledge is accumulated in daily contacts." (*respondent: a regional subsidiary of a big engineering company, the subsidiary specialised in electronics; use: new features in the trend*)

219. "Our unit is specialised in international contract law and intellectual property rights; in addition, we have cases related to venture capital financing and stock exchange trading. Our clients are regional high tech companies, subsidiaries of international companies, and international firms which have contracts, e.g. product development contracts, with Finnish firms. In legal cases related to information technology, our unit is the best expert within our company chain." (*respondent: a regional subsidiary of a medium-sized law firm; use: new features in the trend*)

## **Trend 8: Diversification of international activities**

### *Significance of versatile international activities*

220. "Although many export projects come through client firms, it is important that engineering companies have daring to start own international operations, too. Our firm has a joint venture in Poland, and in order to improve our competence we have worked together e.g. with the Germans and the Swiss. In addition, we are a partner in a Finnish export company and we are a member of a number of international organisations in our sector." (*respondent: a medium-sized engineering company outside the metropolitan region, structural engineering; use: nature of the trend*)

### *Specialisation and increasing of know-how through international clients*

221. "In the internationalisation of accounting, serving the subsidiaries of international companies is an important phenomenon. Of the clients of our firm, 35% are Finnish affiliates of foreign-based companies." (*respondent: a small accounting firm; use: nature of the trend*)

222. "Internationalisation means expansion of the area of trade. In addition, the development of ICTs has increased cross-border operations. Even a small accounting firm has to be familiar with some regulations of other countries, as it may have, for example, subsidiaries of Finnish firms operating in Sweden as its clients." (*respondent: a small accounting firm outside the metropolitan region; use: identification of the trend, factors supporting the trend*)

223. "One fifth of our firm's activity is international, mainly consisting of services for small and medium-sized clients which are just starting their international operations. Our firm belongs to an international network of auditors; this network is specialised in serving small client firms. Development of service products and tools would be the biggest problem, if we worked only nationally." (*respondent: a small auditing firm; use: nature of the trend*)

224. "Consultancy connected with the clients' internationalisation projects is very wide-scope. It covers both general studies on the potential and risks provided by various countries and concrete examination of the profitability of the project concerned. The latter includes investigation of the production and marketing possibilities of products, investigation of contractual practices, and search for local partners. Moreover, consultancy includes technical and operational planning of a subsidiary to be possibly set up, as well as recruitment and training of staff." (*respondent: a small management consultancy firm; use: nature of the trend*)

#### *Location of international subsidiaries and target countries of exports*

225. "Exports account for 43% of our firm's operations. Our most important export areas are the Baltic Countries and Africa." (*respondent: a medium-sized engineering company, community planning; use: nature of the trend*)

226. "Our firm has carried out export projects in Central Europe, and development cooperation projects in Egypt and Nicaragua, for example." (*respondent: a small multisectoral engineering office; use: nature of the trend*)

227. "Our company has had affiliates in Moscow and Tallinn already in the times of the former Soviet Union; these are still working. During the past few years, we have also carried out export projects in the EU area and in the Far East." (*respondent: a medium-sized multisectoral engineering company outside the metropolitan region; use: nature of the trend*)

228. "Our company, as many other IT firms that are focused on the product business, has subsidiaries in the IT sector's most important international centres: in the US, France, India, etc." (*respondent: a medium-sized IT company, focused on product business; use: nature of the trend*)

229. "Finnish law firms have only a few units abroad: a couple in Central Europe, a few in Estonia and Russia." (*respondent: a medium-sized law firm; use: nature of the trend*)

230. "Our firm has a subsidiary network in all the Baltic Countries." (*respondent: a big advertising agency belonging to a worldwide group; use: nature of the trend*)

231. "Our office has had some projects abroad, mainly in the adjacent areas; projects further away would require inputs of a quite different level due to cultural differences." (*respondent: a small architectural firm; use: factors retarding the progress of the trend*)

232. "Architectural design is local activity by nature. Even a top-class Western architect needs a local partner when working in the Far East, for example." (*respondent: a small architectural firm outside the metropolitan region; use: factors retarding the progress of the trend*)

*Development of wired cross-border activities*

233. "There is no longer so much need to transfer personnel resources from one place to another, you can operate where there are resources. Earlier, when a client in Brazil, for instance, wanted to take our database tools into use, we sent there a few men for a few months to give training. Now we train the locals via the Internet. Such activity will increase." (*respondent: a big multisectoral engineering company; use: identification of the trend, new features in the trend*)

234. "Building services have so far been local by nature. As each country has norms of its own, you need at least one local partner. In some sub-sectors there are, however, European norms, and the number of international norms is increasing. Building services have also been tied to construction sites: planning has had to be there where the construction takes place. Within the next five years, a great part of information will be delivered electronically to the construction site. Online transfer will make the management of the project easier; it can be facilitated by video technique, for example. Digital photos are taken already now; negotiations can be conducted in our main office in Helsinki on the basis of pictures sent from the project site in Moscow." (*respondent: a small engineering office, building services; use: identification of the trend, factors supporting the trend, factors retarding the progress of the trend*)

235. "In building services, electronic data transfer can hardly be made a general practice in the near future, especially when it comes to the actual work performance. One can, however, imagine that in the future a pipe installation can be made according to video picture projected in the place where the pipe is needed." (*respondent: a small engineering office, building services; use: nature of the trend*)

*"Born global" -firms*

236. "All IT companies engaged in the product business seek rapid internationalisation. The time span has changed: a company may already be listed after three years from its start-up." (*respondent: a professional association, IT services; use: identification of the trend, new features in the trend*)

237. "Our firm is specialised in language-related software products and packages. We are mostly an exporting firm, in Finland we are not very well known." (*respondent: a small IT firm; use: nature of the trend*)

238. "We are a company that develops and produces management software products. Services also play an increasingly important role in our activities, along with the generalisation of ASP in particular. Our operations have already from the start been international; we have international subsidiaries and all our competitors are foreign." (*respondent: a medium-sized IT company outside the metropolitan region; use: new features in the trend*)

239. "We have gone global directly from our region. We do not even have an office in Helsinki; our domestic affiliates are located in smaller regions, where labour suitable for us is being trained. The forms of our international activities cover offices abroad,

international acquisitions, setting up of international sales channels, and serving international clients.” (respondent: a big IT company outside the metropolitan region; use: new features in the trend)

240. “We recruit staff from our own region and also from abroad, e.g. from the UK, USA and from Japan.” (respondent: a small IT firm outside the metropolitan region; use: new features in the trend)

#### *International assignments*

241. “International linkages will increase in legal assignments, e.g. the financier may be international. All in all, internationalisation is the most important phenomenon in our sector in the near future. For instance, e-business is connected with many legal issues of the international level.” (respondent: a professional association, legal services; use: identification of the trend; factors supporting the trend)

242. “In legal services, international assignments have increased in recent years due to international investments and ownership arrangements, as well as integration and networking of business at the international level. The significance of legal services for the development of value added of clients will grow, as things become more complex and the number of laws and regulations increases. For instance, in international acquisitions and corporate arrangements, legal services provide considerable value added to the client.” (respondent: a medium-sized law firm; use: identification of the trend, factors supporting the trend)

243. “Globalisation in legal services means that you have to be familiar with the regulations of very many different countries. Taking cultural differences into account is also important. For example, “unlawful marketing” is used to refer to different things in different countries.” (respondent: a small law firm outside the metropolitan region; use: new features in the trend)

244. “We have not wanted to join any international chain, but we participate in an international network in the communications sector. Through our big, international clients we also have abundant assignments directed to the foreign market.” (respondent: a small advertising firm; use: nature of the trend)

245. “Our firm is not engaged in actual engineering consultancy exports. However, internationality is important for us in terms of image and know-how. We have participated e.g. in EU-funded international research projects. Such projects are one means to upkeep competence.” (respondent: a small engineering office, building services; use: identification of the trend, new features in the trend)

246. “EU-funded research and analysis assignments form a major part of our firm’s turnover.” (respondent: a medium-sized engineering company, community planning; use: new features in the trend)

#### *International networking*

247. “Our firm does not have any units abroad, but we have cooperation patterns and networks to many different European countries. We also carry out international assignments.” (respondent: a small digital media firm; use: nature of the trend)

248. "The EU has brought about the must for Finnish engineering offices to network in international projects. Besides Finland and the target country, some big EU country must also participate; the consortium may be, for example, German-Finnish-Russian or French-Finnish-Polish." *(respondent: a professional association, technical services; use: identification of the trend, factors supporting the trend)*

249. "Our firm belongs to an international voluntary consortium. One of its benefits is that when our clients go global, we know with whom to cooperate in the client's target country." *(respondent: a small auditing firm; use: nature of the trend)*

250. "The international contacts of law firms vary from looser networks to exclusive groupings. Since the 1970s there have existed discussion clubs for information exchange. Particularly in Central Europe, there are also economic interest groupings which require their members to use each other as partners in international assignments." *(respondent: a medium-sized law firm; use: nature of the trend )*

*International business environment, combining the local and global*

251. "Along with internationalisation, developments must be monitored very widely. You should know international contract types outside Europe, too. Good models for contracts may come from countries that from our perspective are distant, even surprising." *(respondent: a small law firm; use: new features in the trend)*

252. "In our staff, 17 different nationalities are represented. The internationality of the staff is an intentional solution: it promotes other international activity, too. Foreign employees can, for example, help in creating contacts to their home country, if we want to become operative there." *(respondent: a big IT company; use: identification of the trend, new features in the trend)*

253. "The global way of thinking is essential at technology centres, and the potential offered by it should be utilised more outside Helsinki, too." *(respondent: a small law firm outside the metropolitan region; use: nature of the trend)*

254. "Mobile services must be strongly local regarding their content. In each country, the local actors should acquire the content." *(respondent: a small IT firm, Internet and mobile services; use: factors retarding the progress of the trend, new features in the trend)*

255. "New media companies are national by their nature; there is much room for national innovations in this sector. Many services and solutions are local, although the system is global." *(respondent: a medium-sized new media company; use: factors retarding the progress of the trend, new features in the trend )*

256. "Culture-bound issues are very important in digital content production. For example, the same kind of humour cannot be used all over the world to support e-learning. The significance of locality lasts, and even grows, in the e-world: emphasis on ethical values in consumption increases the importance of the information on the origin of products and on their production methods - in the future this information will be more and more sought on the Internet." *(respondent: a medium-sized new media company outside the metropolitan region; use: factors retarding the progress of the trend, new features in the trend)*



257. "The big 5 -companies operating in Finland are, except for Arthur Andersen, thoroughly Finnish. Their background is in old national auditing companies, partly originating from the beginnings of auditing." (*respondent: a professional association, auditing services; use: nature of the trend*)