

Knowledge-Intensive Business Services and Co-production of Knowledge – the Role of Public Sector?

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Abstract

The rise of knowledge economy has put knowledge-intensive services high on the research agenda. The argument is that their overall impact on economy has grown significantly. Besides creating a significant number of highly skilled jobs within the sector, knowledge-intensive services are seen in a pivotal role facilitating innovation and economic growth across the sectors. In the current society knowledge-intensive services have many roles, and they touch the very essence of the innovation system, knowledge itself. It is assumed that they can contribute to the renewal and growth of other businesses by creating fertile ground for innovations and diffusion of novel practices. Also public sector has recognised the central role of knowledge-intensive services, their ability to facilitate innovations, job creation and economic growth. As a result, policy measures and instruments are increasingly addressing knowledge-intensive services. The aim of this research is to create a better understanding of how knowledge-intensive services can benefit client firms, and how various policy measures may influence the use of knowledge-intensive services.

Keywords

knowledge-intensive services, co-production process, business support services, innovation policy, knowledge-intensive service activities (KISA), knowledge-intensive business services (KIBS).

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Introduction and overview

Knowledge-Intensive Business Services (KIBS) are business service firms that rely heavily on knowledge or expertise related to a specific domain. To their clients such firms supply intermediate products and services that are knowledge-based and they contribute the knowledge processes within the client firms (see Hertog 2002:237, Toivonen 2004:36). Internationally the growth of 'KIBS sector' has been significant over the past few decades. In Finland the number of personnel employed in business service enterprises grew by 43 per cent between 1990 and 1998 (Toivonen 2001:77). Much of this growth comes from technical and computer related services (Kuusisto & Meyer 2003:11). On the EU level, expertise-related services¹ account about 60 per cent of the employment (Lith 2004).

Research interest has been sparked not only by the growth of KIBS, but also by the recognition that KIBS may have an effect on overall economic growth. KIBS are believed to serve as ‘bridges’ for knowledge flow between firms and other organizations, as well as across the industries. Hence they may function as carriers, facilitators and sources of innovation in the economy. Typically knowledge-intensive services involve close interaction with the client firms and imply a learning process, which often is mutual in nature (Hertog 2002; Antonelli 2000, Schienstock 1999, Hauknes 1998). In the KIBS-client interaction generic and localised expertise is combined and this can create a dynamic and fertile ground for innovation (see e.g., Gallouj 2002). However, KIBS-firms are not sole providers of specialised expertise to the businesses, even if much of the recent research has focused on them (cf. Leiponen 2004, Toivonen 2004). Knowledge-Intensive Service Activities (KISA) refers to all knowledge or expertise based services (OECD 2001; Miles 2003:17). These can be internal to the firm, public or private sector provided, or derived from a network of actors not primarily engaged in provision of knowledge-intensive services. The concepts of KISA, externally provided KISA, and KIBS-provided KISA are ‘nested’ (see figure 1).

The study at hand focuses on expert services delivered by external providers, either public or private sector actors. Public and semi-public organizations may deliver services by themselves, subsidise, or otherwise facilitate service provision. As soon as public sector actors become involved in service provision, (as providers, funding bodies, or initiators) they will also influence directly or indirectly the service co-production process between service provider and the client firm. The key question is, how do the clients perceive such public sector intervention? And further on, what are influences of public intervention on the outcomes of the client-provider relationship?

Typically the take up of external expertise among small- and medium firms (SME’s) is rather low due to their limited resources and capacity to make use of external expertise (see, Storey 1998). Nevertheless, promotion of SME growth has high priority on the government policy agenda (see e.g. Yrittäjyyden politiikkaohjelma 2004). Overall, public policy seeks to encourage innovativeness, internationalisation and growth by supporting SME’s (Yrittäjyyskatsaus 2004). What are the particular challenges faced by smaller firms in utilising external KISA? Do the outcomes of service meet clients’ needs and expectations? These are among the issues this research aims to shed light on.

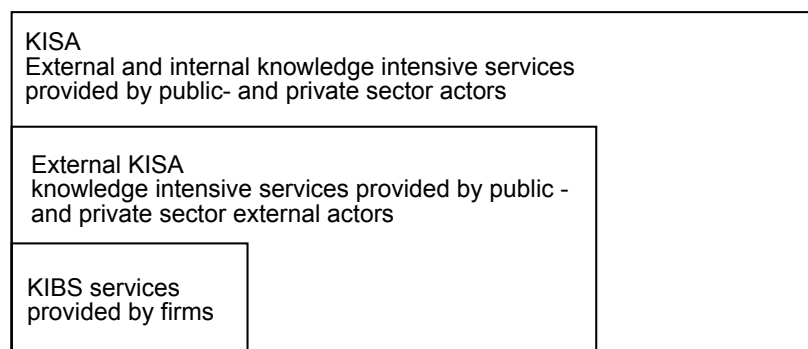


Figure 1. Nested definitions

It is suggested that the influences of external KISA on the client organisation can be threefold. They can materialise on: 1) a single service process level, 2) on a single client or provider organisation level, or 3) on the innovation system level. The analysis seeks to advance understanding of how KISA-client co-production, and public sector influence on that co-production, works on each of these levels. Proposed research design emphasises the process nature of services and focuses on the co-production during the interaction between service provider and the client. The aim is to identify factors that can contribute to positive outcomes of the co-production process. On the innovation system level, the analysis is related to the service provision structures and the policies that shape them. This will allow us to discuss the direct or indirect innovation-related effects of policies. The overall research question can be formulated as: how the public sector involvement influences the delivery, co-production and outcomes of knowledge intensive services, from the clients' perspective?

This is a work-in-progress progress paper and the second section will describe the conceptual basis of the empirical work. The third section explains the research methodology employed. In the final section, expected outcomes of the research are briefly discussed on basis of existing research and progress so far. By early 2004 the work commenced with literature review and further development of the research strategy. A number of pilot interviews have been done in order to gain better pre-understanding of client firms' conceptualisation and perceptions of external KISA. On the basis of the work completed so far also the data set has been refined, the availability of different types of KISA has been explored, and the structure and processes of public sector involvement has been clarified. The project is part of the ProACT research programme funded and administered by Tekes (The National Technology Agency) and the Ministry of Trade and Industry of Finland.

Developing conceptual framework for the study

The following sections will address theoretical literature that is closely related to the conceptual framework being developed for this study. To start with, co-production of knowledge involves at least two parties, expert service provider and the client. In most cases these parties are not alone but the environment as a whole, and a number of other actors are also influencing the process. In this research the focus is on service supplier, client and public sector actors that can influence the co-production process. Such constellation can be examined as a network and this theoretical perspective will be discussed first. From the process perspective, the conceptual framework of the study is presented as a three-stage episode. *The first stage* concerns entry and engagement into the co-production process. Here the theoretical discussion will mainly address client organisations buying process: motivations, buying criteria, resources and overall ability to engage into the co-production process. *The second phase* includes the actual expert service delivery process and the roles of participants are discussed mainly in the light of existing literature on co-production in the case of expert services. *The third phase* will discuss the actual outcomes of the expert service delivery and co-production process. Here the analysis will focus on the client perceptions and views of the outcomes from the use of expert services.

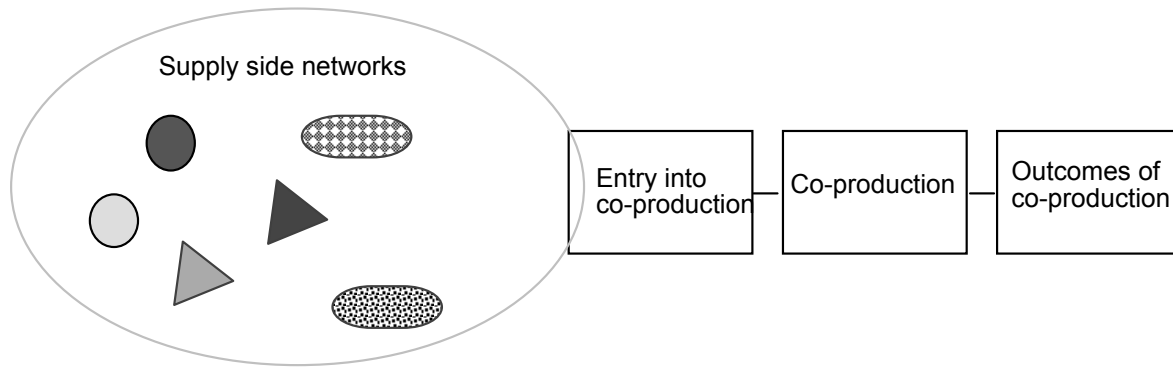


Figure 2. Outline of the conceptual framework under development

Co-production, relationships and networks

At present the network perspective is pervasive to study of interactions between organizations. The general shift from firm level focus to analysis of interactions between firms has happened in the 1990's (Ritter & Gemünden 2003:691). The adopted approach can be linked to much of the network discussion which indicates that networks play a pivotal but they are not panacea for SMEs success. For instance, diversity in firm's relations, active management of network relations, close links with suppliers, distributors and third parties and owner-managers personal and informal relations are issues related to beneficial networks. However, networks can fail for variety of reasons, they may be obstacles for success and anti competitive in nature. Further on, government intervention may have both positive and negative influences on networks. To conclude, networks may have positive influences on co-production but these clearly need further investigation (Pittaway et al. 2004). Industrial Marketing and Purchasing (IMP) approach provides some useful elements for the conceptual framework. Its main focus is on the interactions between buying and selling firms through set of variables. These describe 1) the parties involved, 2) the elements and process of interaction, 3) the environment, and finally 4) the atmosphere. (IMP 2002:22-24). In this study both of the parties involved in service delivery are examined but the focus is clearly on the interests and outcomes of the client firm. Also the empirical material will be mainly collected from the service clients focusing their views and perceptions of the co-production process and its outcomes. Also the client firm's motivations, needs, inputs and capabilities to make use of offered services will be analysed. As for the environment, the analysis focuses on the direct and indirect influence of the public sector.

Entry into co-production

There are numerous possible reasons why businesses decide to make use of external expert services. In innovation literature, typically the use of external expertise is associated with R&D efforts. However, there are also many other reasons to use external expert services and such activities are growing rapidly. Increase in outsourcing is often seen as one important driver of the growth of the KIBS-sector. It can be seen as a way further develop the division of labour, and effectiveness of the business by using increasing number of expert services (Abramovsky et al., 2004). Cadrey & Gallouj (1998) argue that the decision to acquire business services can be analysed in terms of simple make-or-buy decision. They consider three ways of relating internal and external expertise.

- In *substitution* the client replaces internal functions with external ones, for example by outsourcing accounting or personnel management.
- In *acquiring* complementary capacity, external professionals provide inputs that are complementary to those provided by internal professionals, for example in marketing or IT.
- Finally, internal and external expertise comes together in an *interface* role. (Cadrey & Gallouj 1998).

As such, complementary capacity can serve several purposes in client firm. The motivation to use external services may stem from the need to expand existing capacity or from the need to acquire novel skills, i.e. expertise the client firm does not possess in-house. Further on, businesses may seek new perspectives to familiar issues from external experts (see cf. Fincham 1999).

The above discussion of motivations for using external expertise implies that each transaction arises from a systematic consideration of needs and costs. However, in real life exact specification of needs or costs tend to be very difficult and rare. Another implication is that the client firm is the active party, identifying a need and seeking a solution. Yet, the impulse to buy external services may be rather spontaneous, and / or the impulse may come from an external source. Indeed, active marketing of KIBS services rests on the knowledge that the development needs are not necessarily recognised or clearly understood by the potential client. By offering services KISA provider often helps client in formulating the problem in such manner that it will lead into purchase of external expertise. This is a particularly important aspect for the public sector which in many ways seeks to promote the use of KISA. Much of the public sector business support seeks to cultivate client firms alleged latent needs for external expert services. The first challenge for the public sector agencies is to locate business sector partners that are willing to take part in such development projects. Secondly, it is not always easy to match businesses needs and available services. For instance, Finnish polytechnics represent a public sector actor charged with the task of supporting the development of SME's. In addition, there is plethora of various types of non-commercial actors offering and promoting the use of expert services.

The above discussion indicates that often SMEs decision to use external expertise is influenced by a number of external factors that are often linked in business support activities offered by the public sector. Yet, businesses take the final decision whether to use external expert services, or not.

The following sections will address issues that are relevant at the stage where the client is considering the use of external expertise. These include: *stages of the purchasing decision, intangibility and tacit knowledge, nature of the service provider-client relationship, client firms available resources, public sector influence in the use of expert services*. These factors will be relevant at the data collection stage and they provide tentative ideas for the analysis of the pre-purchase stage of the co-production process.

Patterson et al used introduced six *key decision criteria* used by the clients in the selecting the providers of management consulting services. Their generic stages are 1) identifying the problem, 2) determining whether the problem should be handled internally or externally, 3) identifying possible consultants, 4) searching for information concerning possible consultants,

5) preparing a short list of consultants and 6) making the final selection of consultant. (1997:10, cf. Day & Barksdale 2003:565). Gallouj (1997) used a similar stage model, but noted that for smaller businesses all the stages are rarely operationalised. The Finnish foundation for SMEs, has published its own guide to SMEs on use of management consultants. Their recommendations emphasize careful consideration of the needs and resources available for the process in the client firm. (PKT-Säätiö 2002).

Services have traditionally been defined in terms of their *intangibility*, and *KIBS services* come closest to the archetype of 'professional services' as described by Silvestro et al (1992). Clemes et al (2000) were able to find supporting data for the supposition that highly intangible services present a different set of marketing problems. Intangibility is also an issue from the client's perspective. The central paradox is that in applying expertise to specific situations (which is the core of what KIBS do), the service provider is actualizing tacit knowledge in a particular context. However, in making the offer, the service provider must in advance describe an essentially tacit process as an explicit set of outcomes. The client has an even more daunting task of choosing on basis of abstracted presentations the provider who will give best value in actual delivery. This is difficult particularly when the service in question lies outside the client's core expertise.

The pilot interviews we have carried out demonstrated that *service provider selection process is a highly context specific event*. It is clear that where sufficient expertise is available from a supplier already familiar to the client, there is a strong tendency to use the same provider repeatedly. There is some research-based evidence that the clients tend to favour long-term relations with their service providers. In such cases clients are rarely dissatisfied with the quality of their external KIBS providers, and new providers are mainly considered when new expertise is needed (Kuusisto 2000; Kuusisto et al., 2004). Information gathering regarding possible suppliers tends to take a lot of resources. As both the service and its value are difficult to determine in advance, personal trust is highly important in provider selection. When there is no previous experience, referrals and word-of-mouth can count for much.

In pilot interviews several business managers pointed the *influence of limited resources on the use of external experts*. The amount of work required from business managers can be a prohibitive factor. Typically businesses have to do a lot before external experts are sufficiently familiarized with their needs and products to be able to give any meaningful advice. From the perspective of the interviewed client companies, the KIBS firms can be net receivers rather than sources of knowledge. This means that both search and switching costs are high. On the other hand, to KIBS firms the SMEs may be less desirable clients for somewhat similar reasons. A large client with many assignments to offer is more attractive than an SME, since with the larger client more volume can be generated from learning to know the client. (cf. Howells on R&D services, 1999). Making sure that organizational development services are available also for the less attractive client firms is in fact one of the reasons for public involvement in provision of certain business services (EC 2002).

Several possible dimensions of *public sector influence in the take up of expert services* can be identified. Public initiatives that facilitate the use of expert services often both defines some of the objectives and subsidizes some of the costs. In effect this largely determines the outset for the service provision. This can have, from the client firms' perspective, multiple effects. When the public sector is actually delivering the service, the provision is not motivated by

profit seeking. Often the prices of such services are subsidised and SME's have limited choice in terms of who will deliver the service. Lower prices as such may not be a problem but the public sector provider tends to have an agenda which may complicate the process for the client firm, or lead to lower actual or perceived service quality. Since the client firm needs to expend resources even in a service that is provided for free, low quality results can be experienced as a net loss (cf. Leino 2004). Further on, personal interaction on the implementation level may be affected by the differences in organizational culture, but not necessarily. All in all, public sector intervention tends to influence co-production process in a variety of ways. These differences may create a situation which is remarkably different to that of straightforward market KIBS transaction.

Co-production

Co-production process is a key element of service delivery and it has many features which make it distinct from more 'routine' type of purchasing situations. In the routine type purchases client typically makes the decision without using too much time neither effort in the process. Hence, clients degree of involvement in the information search and examination of materials and / or processes is low, typically focusing on price and some tangible aspects of the item (for example in the case of office supplies). Similarly, outsourcing of relatively routine type activities means rather low level of involvement (for example, supplying a part of the firm's product, or janitorial services). This type of 'subcontracting' and related interaction are often regulated by long-term contracts which introduce strict pre-determined guidelines for the process. (Cf. Coombs & Battaglia 1998, Fitzsimmons, Noh & Thies 1998). Co-production is essentially different from both of the above described cases because the process involves mutual exchanges and the client accesses provider's expertise rather than a process or a good. The service provider at the same time needs to access the client's situational knowledge to be able to deliver meaningful services. Even if the conceptual difference between outsourcing and co-production is significant, in the empirical context these activities exist in parallel and in different types of contexts it is not always easy judge what type of activities are in question.

The following sections will discuss different perspectives to co-production process and their relevance in the case of knowledge intensive services. The items to be discussed address co-production in terms of: *joint effort, case- and context specificity, nature of provider-client interface, proximity between actors in terms of involvement into the process.*

Gallouj & Weinstein (1997) consider co-production an essentially organizational, extensive and balanced interaction. In this research co-production is defined as the *joint effort* by which the service provider and client produce the service. In this joint effort the quality of the final product largely depends on the nature of interaction and quality of communications between the parties. In order to organize a solution that fits the client's situation, the provider must offer specific knowledge that fits the client specific needs, and combine it successfully with the client's knowledge base. (Hertog 2002). Co-production implies an interaction into which clients as well as the KISA providers bring different sets of capabilities and competencies. The mutual fit of these sets has implications for how the process works and what its outcomes are. Without sufficient internal expertise even the best external input will fail, this because the quality service ultimately hinges on the internal experts. External service provision is a process, not an instant purchase, and it is a process of knowledge transfer, requiring reciprocal

learning. (Cadrey & Gallouj 1998). This means that the absorptive capacity of the client firm is paramount. Absorptive capacity refers to the ability of a firm to "...recognize the value of new information, assimilate it, and apply it to commercial ends" (Cohen & Levinthal 1990:128). A business needs to possess a certain level of knowledge/learning capacity in order to a) recognize the importance of information, and to b) assimilate the new knowledge, i.e. learn. The concept was originally centred on R&D investment as a prerequisite of these abilities, but later has come to take on other dimensions as well (cf. Zahra & George 2002, Lane & Lubatkin 1998, Palmberg 2004). In this study absorptive capacity relates to the ability of the client firm to gain and utilize knowledge from the KISA provider in the context of co-production.

Besides knowledge, skills and abilities, both parties also need commitment and ability to express their ideas to each other (Bettencourt et al. 2002). A good fit in competencies is useless unless there is also a good fit in application of the competencies. Besides contact persons with good communication skills, also sufficient time and resources needs to be allotted to the process by both parties (Kuusisto 2000). In effect, the skills of the service provider may become irrelevant to the process if there is no sufficient opportunity to learn about the client's specific situations.

Also the level of co-production is highly *case- and context-dependent* and the variety of processes is significant. To start with, the contributions by different parties during the exchanges may not be evenly balanced, even if mutual effort is often implied. Also the outcomes of the shared process can vary from a co-produced fairly standardised service to a co-produced innovation. The task of co-production can range from a combination of firm- or industry-specific knowledge and generic knowledge, to actually generating 'new' knowledge (Miles 2002:188).

The *nature of provider-client interface* has been discussed in the literature through two key dimensions. These include interaction intensity and the degree of implementation. For instance, the interaction mode can be either jobbing or sparring, with or without implementation. A jobbing, non-implementation interface involves selling of skills under supervision of client. When implementation is included, the supervisory responsibility remains with the client but the operational responsibility for results gives the consultant more weight. In a sparring interface the client and consultant share supervision in a more reciprocal manner. (Cadrey & Gallouj 1998:6-8). High degrees of interaction can here be equated with high degrees of co-production. At the same time it must be acknowledged that all KISA-service provision involves co-production. Cadrey & Gallouj's framework suggests that depth and breadth of interaction as well as division of labour and responsibilities are pertinent dimensions for analysis.

Degree of implementation Mode of interaction	provision of expertise without implementation (emphasise 'deliverables')	provision of expertise with implementation (emphasise outcomes)
jobbing (precisely defined task, less interaction)	(1) analysts and architects External KISA provides skills/capacity, client firm defines & supervises	(2) project engineers External KISA provides applied solution, client firm defines with ext. expert input & supervises
sparring (internal & external experts as partners, more interaction)	(3) Co-pilots External KISA provides skills/capacity, mutual definition & supervision	(4) 'doctors in management' External KISA helps define and implement solution, mutual supervision

Table 1: KISA provider – client positioning, based on Cadrey & Gallouj 1998, p.6

So far discussion on co-production process has been focused on the service supplier and client interaction, emphasizing exchange of inputs. In a network perspective, the environment of the interaction will be considered as well. This is a significant aspect also for this study which investigates the possible influences of public sector interventions. Typically public sector intervention into the co-production situations brings with it a complex set of network relationships.

The example of a co-production network in Figure 3 illustrates the *proximity between actors*, including three KISA providers, two client firms, and two public sector actors. Five of the actors are located in the inner circle of co-production, actively engaged in the process. The other two are in the outer circle of influence, i.e. influencing, or being influenced by, the co-production process without being active partners in it. When examining a specific case of co-production, it is often useful to focus on a specific interaction process (e.g. client firm – engineering firm). Yet in cases where the co-production is in fact a network process, this multidimensionality needs to be taken into account. Hence, it is co-production network that becomes a focal object of the examination.

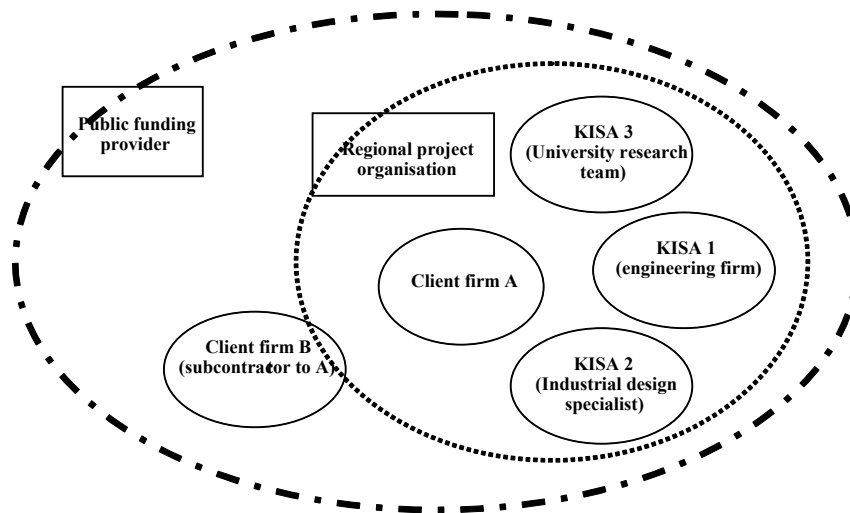


Figure 3. a co-production network

Networks can influence the co-production in a number of ways, either directly, or indirectly. Typically each client case has some influence in a KISA provider's subsequent co-production processes. In some instances, service provider's involvement in multiple clients within one industry is considered unethical because of potential conflict of interests and unintentional knowledge spill overs. Similarly, public sector influence is often indirect, resulting from numerous different policy measures, such as regulation and promotion of certain types of activities.

Co-production outcomes

Knowledge building within KIBS firms and their role in innovation system has been discussed in several publications (cf. Leiponen 2004, Miles 1999, Müller & Zenker 2001). Yet, client firm outcomes have so far attracted very limited research attention. It is assumed that four types of outcomes may emerge. In order of their potential impact they include: innovation, capability development, knowledge accumulation / learning and service delivery as such without much wider implications. (See figure 4)

Service delivery requires co-production in a KISA-client relationship and services are "deeds, processes, and performances" (Zeithaml & Bitner 1996:5). Thus we can say that a knowledge-intensive service is also provided by a marketing research firm that delivers to a client firm a report on a particular market. Although the co-production in such a case may involve very little input from the client, service delivery requires some amount of mutual efforts. At this simplest level, the performed service is in itself the outcome.

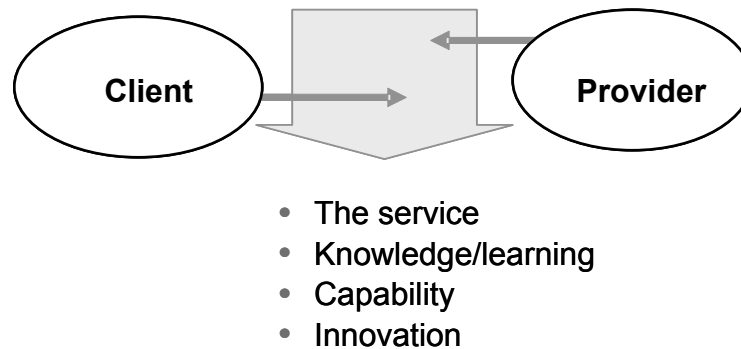


Figure 4. Co-production outcomes

In a process involving more interaction, it is more likely that the client firm gains also tacit knowledge during the course of the process. Interactions may also result in intentional or spontaneous development of new knowledge. This occurs as the generic or topical expertise of the service provider is combined with the situational or topical knowledge of the client firm. Ideally some amount of learning does happen during the interaction process. However, the argument is that from the client firm perspective relevant learning is a potential, but not necessary, outcome of co-production process.

If the learning/new knowledge is sufficiently deep or touches upon a critical juncture, it may result in a change in the client firm. The skills of the personnel, the routines of the firm, its stock of knowledge, may develop and translate into new capabilities. In essence, the firm is able to do things that it previously could not, but as a result of the co-production they became possible. When the new capabilities are actualized in a product or process innovation, whether comprehensive or incremental, the outcome of co-production can be an innovation. From the innovation system, and innovation policy point of view, these are most desirable consequences.

Finally, the outcomes co-production discussed above are often far from clearly distinguishable entities. Rather they present points in a continuum of outcomes. They can be relied in some occasions, if the client is able to point to a distinct change in its organisational processes, product portfolio, strategy etc. Parallel to the firm level outcomes, there are also situational outcomes in terms of the relationship. The client firm will experience a degree of satisfaction or dissatisfaction, often based on confirmation or disconfirmation of expectations (Patterson et al 1997) regarding the quality of the substance of the service as well as the interaction (cf. Grönroos 1998, Parasuraman 1998:310-311). The episode has consequences for future relationships and thus also for the network involved in the process.

Methodology

The framework of questions around KIBS/KISA, and their connection to innovation on micro and macro level, draws upon different disciplines for conceptualizations. The lack of a single established theoretical framework makes the subject well suited for qualitative methods,

which are oriented toward exploration, discovery and inductive reasoning (Patton 1990). The enquiry is approached as an exploration. The interview themes and questions have been honed out in successive steps during the pilot phase, giving emerging patterns the opportunity to nudge the analytic design.

Data set

A total of approximately 105 interviews are foreseen, with emphasis on the clients of KISA providers. The client companies selected for interviews will be SMEs, ranging in size from 5 to 250 employees. Company selection will take place in three lots. One third will be selected from amongst companies that have received funding from TE-Centres or Tekes in year 2003. Funding is treated as an indicator of awareness of public business support services. Some evidence also suggests that it may correlate with use of other public services as well (Väänänen 2003). The second third is selected so that it is similar to the first lot in other respects except receiving TE-Centre/Tekes grant in 2003. This set of client firms is designed to allow examination of differences between different types of KISA usage (public/private, active/incidental, local availability) within SMEs in production industries. The remaining third of client interviews will be used to complete any aspect of data felt to be lacking in initial analysis.

KISA provision is varied, although there seems to be an increasing convergence between different branches of KIBS. A typical scenario involves partial shift of business services towards management consultancy. (Toivonen 2001, 2004). The provider interview themes, as well as the sample, will be finalized on basis of the client interviews. Providers identified as co-production counterparts will have priority, with particular interest in providers whose activities typically have a high degree of co-production, or whose activities can shed light on public actor roles in co-production. The adopted explorative and iterative approach allows for flexibility in giving space to emergent themes and issues.

Interviews will be personal one-on-one interviews, and are tape recorded. Notes are also taken during the interviews. Insights and key passages are recording immediately in interview summaries.

	Client interviews	Provider interviews	Key actor interviews
Interview data	pilot interviews (7)	pilot interviews (2)	(up to) 10
	22-23 grant recipients in 2 regions	25	
	22-23 non-recipients similar in other respects		
	22-23 to be determined		
Other data	Statistical materials, policy documents, other sources		
	Available survey data		

Table 2. Data set

An interview guide developed during the pilot interviews is used. However, additional issues that emerge in interviews may be followed up. The interview material will be complemented with statistical and other relevant material. A related surveyⁱⁱ can also provide complementary quantitative data. Policy comparisons (Finland, Denmark and Sweden or UK) will focus on issues directly influencing the knowledge-intensive service provision. Policy data will consist mainly of documents and other available written sources. Additionally, a limited number (up to 10) of key actor interviews are foreseen. The data set is summarized in table 2.

Analysis

Interview summaries are used in initial scanning for emerging themes, and for grouping data excerpts according to them. Both newly emerging proto-themes, and those constructed in the pilot stage, are noted together with patterns relating to them. Findings are then checked against the full transcripts to ensure that contextuality has not been lost. The procedure follows somewhat the thinking of Glaser (1978, 1998) in the sense that the data is examined minutely and conclusions are formed from and constantly compared with the data. As insights arise during the analysis, they are immediately recorded in memos for checking against the rest of the data.

Comparative groupings can be constructed for example according to region, size/age of client firm, activity of KISA usage in general, or of public KISA usage. Analysis may also yield unforeseen comparative groupings. In the final stage, the conclusions and theoretical constructs are re-applied to the data. At this stage the aim is to verify whether the original data indeed supports the analytic constructs formed. When the KISA client and provider interviews have been analysed, key actor interviews and review of policy documents will provide data for secondary analysis, which will be more tightly focused and less explorative. Stated policy is examined in light of the client/provider results.

The basic level of analysis is set at the co-production relationship between client and KISA provider. Each client firm may utilize various providers, and each KISA provider, on the other hand, is likely to have multiple clients, but the analysis will mainly focus on single episodes of co-production. Outcomes are examined on (client) firm level. Analysis is structured around the conceptual framework discussed above (see also figure 5). Regarding the co-production entry phase, the significant themes include client needs and motivation, client resources, and the framework of KISA availability. Relating to the actual co-production activity, the situational factors are analysed as well as external actors' impacts on the process, and finally, the absorptive capacity of the client firm. Public bodies as direct or indirect actors as well as frameworks established by public policy are also considered. In addition to the actual outcomes of co-production, (service, knowledge, capability, innovation), we will look for indications of actual utilization of outcomes. Outcomes and their utilization can be compared to stated policy goals.

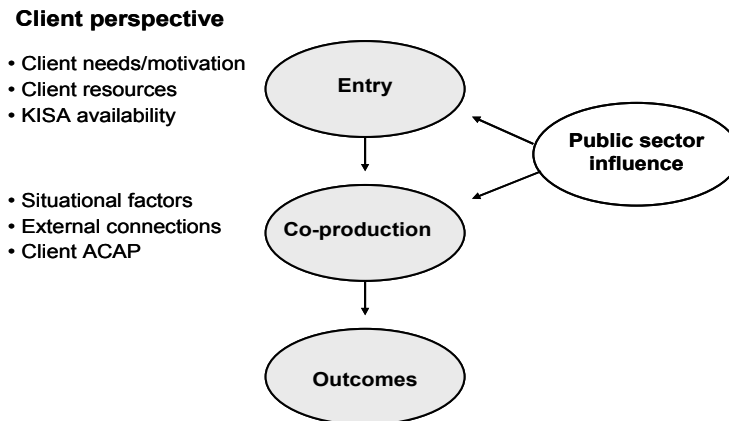


Figure 5. Analytical framework

Expected outcomes

In an exploratory research process the results can be predicted only to a degree. Our overall research aim is to understand how public provider involvement influences KISA co-production, particularly outcomes, from the clients' perspective. However, although our research is specifically focused on the involvement and influence of public actors on co-production, we also expect the results to contribute to a better understanding of the co-production process in general and the roles different actors can play it in. As we look at the SMEs that use external KISA in various circumstances, the study will help us gain a better understanding of why firms enter into co-production, and what internal and external influences have impact. We can also examine, from the client perspective, how the co-production partners are found and selected, and how public actor involvement influences formation of co-production relationships. Future SME users of external KISA should also find useful a deeper understanding of co-production features that are associated with satisfactory or dissatisfactory external contributions. Further, the research will serve to demonstrate the sort of outcomes accessible through use of external KISA. The data should also allow us to speculate as to the correspondence between firms' latent needs, absorptive capacity and the level of KISA usage.

There is very little KISA-research that adopts the client's perspective. In words of Ian Miles, "[w]hat we lack is detailed studies of KIBS-client interactions" (2003:65). Similarly, the use of external KISA in SMEs, particularly the smaller ones, is insufficiently addressed. Fitzsimmons, Noh & Thies (1998:376) noted a dearth of studies on purchasing of expert services, and although the field has developed in the intervening years, Day & Barksdale (2003:564) note the same lack. Our research will hopefully contribute to filling this and other gaps relating to use of knowledge-intensive services in firms. We also hope to assist in forming a more balanced understanding of how KIBS, as well as other KISA, contribute to innovation and renewal on micro level.

For KISA providers, both public and private, the research will give, from a relatively wide qualitative data set, new information on client firm attitudes to external expertise. Also, the

service providers should benefit from a clearer understanding of how client firms experience the co-production in terms of resources requirements, outcomes and challenges. From the policy makers' perspective the research will provide an in-depth look at how SMEs perceive and utilize KISA and what the critical issues are for successful co-production. Further, the research specifically looks at how public actor involvement is actualized in co-production situations, and what is its' influence on outcomes and their utilization. The Finnish policy environment of external KISA provision to SMEs is compared with that of other countries.

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ⁱ Here e.g. accounting, legal services, management consulting, recruitment and personnel services, R&D services, as opposed to T-KIBS, e.g. computer and technical services of Nace 72 (excl. 725), 742,743 and 74871)

ⁱⁱ A survey of approx. 300 KIBS in Finland and UK is to be carried out in the project IP-KIBS, also within the framework of ProACT.