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Knowledge-Intensive Business Services and Joint Knowledge Creation*

Abstract: Knowledge-Intensive Business Services and Joint Knowledge Creation. The paper describes a special however important player of knowledge-based societies: knowledge-intensive business services (KIBS). These are organizations that provide knowledge-based services to other organizations, and belong to the knowledge intensive business sector. The paper discusses their major characteristics and also gives an overview on issues in connection with their contribution to the performance of the economy. Particular focus is on the co-production of service, and along with that, on that of knowledge. Analysis is based on a large number of international and also of Hungarian references, including the authors' research of one and a half decades. **Keywords:** knowledge-intensive business services, professional services, knowledge creation, knowledge transfer, co-production.

Introduction

It can be a commonplace that knowledge is becoming more and more important in the organizational value production process of today's economies.

Theory and practice show the increasing value of intangible assets, knowledge property and of their efficient management. With the continued growth of the knowledge economy service-oriented, knowledge-intensive service industries (KISI) have become a phenomenon of business development (Chen, Chen, and Wu 2012). The well-known structural shift from labor- and capital-intensive industries to knowledge-intensive industries has resulted in companies selling knowledge-based products and services to a larger extent than ever before. This trend is characteristic of the economies no matter which corner of the world is meant, if it is the USA or Japan (Makó et al. 2009), the BRICK countries, or Hungary (Noszkay and Vincze 2013, Bencsik and Marosi 2012), or even other countries of this region.

The role of knowledge is growing not only in the traditional manufacturing and service industries but rapid and eye-catching changes are observable also in the so-called knowledge-intensive services, in each sector of the economy (Capello and Varga 2013; Dobrai and Farkas 2008, 2013). There is no need any more to look for evidence that an increasing number of knowledge workers are employed and doing knowledge-based jobs: another trend that can not be viewed separated from the above mentioned phenomenon.

European Union studies show that in the European regions a dynamic growth of the knowledge intensive sectors can be observed. Surveys of the EU also prove that there is a connection between employment in the knowledge based sectors, especially between services and GDP; hence, regional wealth and employment in knowledge intensive organizations are highly related (Schricke, Zenker and Stahlecker 2012). This is why this paper describes a special however important player of knowledge-based societies: knowledge-intensive business services (KIBS). It discusses their major characteristics and also gives an overview on issues in connection with their contribution to the performance of the economy. Answers are given to the questions why organizations use the knowledge of professional service organizations, trying to meet these challenges of a knowledge-based society in every way. Our aim is to address the perspectives of successful knowledge creation, knowledge sharing and knowledge transfer. Particular

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focus is on the co-production of service, and along with that, on that of knowledge. Analysis is based on a large number of international and also on Hungarian references, including the authors' research of many years. Our attention is focused on theoretical problems. We also outline some future development possibilities concerning knowledge-intensive services. First we look at discussions regarding the term of knowledge-intensive organizations itself.

Basic Features of a Special Sector of the Economy

For the last couple of decades, attention has been drawn to special groups of organizations, the main activities of which are the creation and utilization of knowledge. These are organizations the performance of which is based on the intensive usage of knowledge, and which have been experiencing high rates of growth both in production and services industries. We deal in this paper with so called knowledge –intensive business services that represent a sector that is highly differentiated. Although the interest in professional services is continuously growing, there is not yet a single term that is used generally by experts, but there are a variety of terms that are used parallel when describing basically the same type of organizations, such as “knowledge-intensive services (KIS), knowledge- based services, professional service firms (PSF), professional service organizations (PSO), knowledge-intensive industries (KISI)” etc., among which it is hard to make a fine difference.

For our research, we have accepted the definition by Miles, which says that there are companies which “provide knowledge-intensive inputs to the business processes of other organizations – knowledge-intensive business services (KIBS) such as computer services, R&D services, legal, accountancy and management services, architecture, engineering and technical services, advertising, and market research” (Miles 2005, 39). A definition used by the European Commission (EMCC 2005, 8) for KIBS contains the same elements as the definition above, thus, “knowledge-intensive business services are companies that provide inputs – based heavily on advanced technological or professional knowledge – to the business processes of other organizations”. Sheehan (2005: 57) gives another description of these service firms, and emphasises that “knowledge intensive firms create value by solving their clients' problems through the direct application of knowledge”. Each of the definitions emphasizes the important features of KIBS: professionalism of the provided service, being an external service, service being knowledge-based. The main task of knowledge-intensive business services is supplying other organizations with knowledge from external sources: completing mandates for their clients, such as consulting (Krisztián 2009, 2011; Gonda 2005, Poór 2005). For doing this, these services as organizations are critical to the success of modern economies, as it has been pointed out by Toivonen (2004), Miles (2005), Dobrai and Farkas (2009), Schricke, Zenker and Stahlecker (2012), and also by other researchers.

However, a uniform definition is still lacking, and also there are terms competing in management theory and practice – as mentioned above). Companies providing knowledge-intensive services were (and these terms are also used today) called by some authors knowledge-intensive firms (KIFs) (Robertson and O'Malley Hammersley 2000) or KIS firms (Windrum and Tomlinson 1999). Windrum and Tomlinson (1999, 392) define KIS firms as “private sector organizations that rely on professional knowledge or expertise relating to a specific technical or functional domain. KIS firms may be primary sources of information and knowledge (through reports, training, consultancy, etc.) or else their services form key intermediate inputs in the products or production processes of other businesses (e.g. communication and computer services)”. A popular term is also professional service organizations/firms (Farkas and Kühnel 2002, Dobrai and Farkas 2007) and is described by similar criteria as the ones that are used for knowledge-intensive organizations. According to this approach professional service firms are “companies that work in an industry that is characterized by the self-regulation of professionals regarding the contents of their work” (Farkas and Kühnel 2002, 44).

Considering these definitions, the role can be emphasized that clients play in the value production process. We can see that all the above approaches have something in common, namely that they mean basically companies which sustain their competitive advantage through knowledge creation. According to Maister (2003) all professional service organizations have a similar mission declared, namely that they want „to deliver outstanding client service; to provide fulfilling careers and professional satisfaction for our people; and to achieve financial success so that we can reward ourselves and grow” (2003: 3), that are the aims of organizations in the KIBS sector generally, and that are done “by solving their clients’ problems through the direct application of knowledge” (Sheehan 2005, 54).

Professional Knowledge for Professional Service

As we have experienced in our research work, whereas knowledge plays a role in all organizations, but it plays a special role in knowledge-intensive firms, since their operations are based not only on the application of knowledge but also on active knowledge creation. In knowledge-intensive organizations, knowledge is more important than other inputs, and human capital is dominant, compared to other kinds of capital.

Professionalism and expertise is also emphasized in research about KIBS. This perspective can be observed in views stressing the proficiency of the service provided: „Knowledge-intensive business services are expert companies that provide services to other companies and organizations” (Toivonen 2004: 3).

The professional performance of organizations providing knowledge-intensive services influences the performance of their clients. We agree with Sheehan (2005) who finds, that while at most organizations knowledge is embodied in processes or products, at knowledge-intensive services it is embedded in the experts, and its usage mostly is tailored to the needs of the clients.

Windrum and Tomlinson (1999) also see a difference between manufacturing organizations and KIBS products in the kind of knowledge used in the process: manufactured products and processes are characterized by a higher degree of codified knowledge, whereas KIBS use more tacit knowledge, (such as specialized expert knowledge, research and development ability, problem-solving know-how etc.).

Since it is a challenge how to attract new clients and how to keep them by working together on solutions, Maister (2003) suggests that for a good start the provider of a knowledge-intensive service has to increase its capabilities to serve its client. This development would then involve improvement in the following fields: knowledge of client’s industry, knowledge of client’s business, knowledge of client’s organization, knowledge of client.

“Footprints” of a Changing Sector in the NACE Code System

If we want to place knowledge-intensive business services among other types of services, it is wise to use the NACE-code system (Nomenclature Generale des Activites Economiques dans l’Union Europeenne = General Name for Economic Activities in the European Union). OECD and Eurostat have developed a code system for the classification of industries, among others the knowledge intensive sectors. NACE is based on the European standard for industry classifications. This code system makes a very helpful distinction within the service sector, regarding the knowledge content of service categories. Because of the changes and differentiation that had taken and is taking place in the services sector, NACE code system was revised and a new, more sophisticated code system developed. So, based on NACE Rev.2., Eurostat distinguishes between knowledge intensive services and less knowledge intensive services. In the NACE Rev. 2, the following groups of industries can be identified (Eurostat (2008):

- Knowledge intensive high-technology services
- Knowledge intensive market services
- Knowledge intensive financial services
- Other knowledge-intensive services

- Less knowledge-intensive market services
- Other less-knowledge-intensive services.

There are lively discussions going on about the changes in the NACE classification because of some “damages” to the comparability of data.

Trends in the Development of KIBS Organizations

As mentioned earlier, a growing demand for their services leads to KIBS experiencing rapid growth. This raises the question, why is there a growing demand for the services of knowledge-intensive organizations?

We say that the development of the KIBS sector is the result of several factors; such as the growth of other sectors of the economy using the services of knowledge-intensive companies, or the outsourcing of services which earlier belonged to the internal operations of companies. Technologies, regulations and social change, internationalization, globalization, the emergence of the knowledge-based economy, certain trends on the labor market are also drivers of the development in KIBS (Miles 2005, EMCC 2005). Increasing growth rates could be also connected to the increasing demand for certain forms of knowledge. Business organizations need specialized knowledge of social, administrative and regulatory issues, and it is the KIBS that are able to provide them with the help that is needed to become successful, and the help that is needed in their social environment, or in their dealing with regulations. An explanation could be also the changes in the labor market: today’s workforce looks for diversified careers, rather than stable jobs for life.

Besides growing demand there are other phenomena and processes that have an impact on the development trends in the KIBS sector: the expansion and the problems connected to it such as the public sector offering competing services, a growing concentration, growing internationalization, changing client relations, and convergence among KIBS. This phenomenon can be observed on the concentration process in many KIBS sectors, although in the KIBS sector more small firms are present than in the economy as a whole. But as some KIBS become more involved with their major clients’ strategies, it is possible that some services will become more specialized, while others offer integrated services.

Knowledge Transfer and Co-Production of Knowledge

As mentioned earlier, knowledge-intensive organizations function as an external knowledge source for other organizations, which means listening to the clients’ voice. The way Maister (2003) puts it this service is about producing harmony and balance among client demand, staff and organizations ambitions and supply. How can we bring the three factors and goals in harmony, which mix of experts is needed for the organization, all depends on the kinds of assignments to be fulfilled.

We often hear a phrase that also can be found in the literature on KIBS, namely that professional service is not possible without a tight co-operation between service provider and client (Hertog, 2000; Müller and Zenker, 2001; Bettencourt et al., 2002; Skjolsvik et al., 2007). This can be explained through the value-creation features of knowledge-intensive organizations, namely, that they “create value for their clients by performing one or more of the generic problem-solving activities: problem-finding, which includes acquiring clients and defining their problems, problem-solving, which includes alternative generation and evaluation, choice of an alternative, implementation of an alternative, and follow-up and control to see if the alternative selected resolves the problem” (Sheehan 2005, 57).

In these processes, participants of the service have to take into account the factors that enhance the knowledge transfer between KIBS and client organization. Focus on the performance-enhancing tools can positively influence role clarity, motivation and also knowledge, skills and abilities of the client partners, including client training, education, and socialization, project leadership and client performance evaluation (Bettencourt et al. 2002).

We are sure that the above described considerations are basics for a successful co-creation of knowledge between professionals and their clients (Hertog 2000, Skjolsvik 2007), and that this process has its impact on both organizations. Because of this increasing client focus in the services and the requirements of higher quality standards it is interesting to look at factors that have to be considered in the learning process, because they affect the development of the client knowledge. In this section of the paper therefore we examine and summarize the diverse factors that influence the knowledge transfer from the KIBS to the client and the opposite way.

Starting with Hertog (2000) we should mention that he differentiates knowledge flows between KIBS considering four dimensions that are based on the characteristics of knowledge transferred and shared in the interaction between KIBS and client:

- 1.) Discrete/tangible form versus process-oriented/intangible knowledge
- 2.) Human embodied versus non-human embodied forms of knowledge resources
- 3.) Explicit/codified knowledge versus tacit/non-codified knowledge
- 4.) Contractual versus non-contractual forms of knowledge. (Hertog 2000).

These four aspects help us give a detailed description of the features of the transfer processes based on the kind of knowledge to be acquired and to be transferred. There are also other aspects though that can be supporter or obstacle to the production of client knowledge, and we think that these aspects deserve some observations, too.

In order to deliver quality service to the client organization it is relevant to manage the client relationships carefully, which requires special skills from the experts supplying knowledge-based services. This is why we always have to concentrate on the interactions between the KIBS and client organizations. Aarkka-Stenroos and Jaakkola (2012) call this kind of co-operation reciprocal value creation, which regards the whole process of value-creation (diagnosing needs, designing and producing solutions, organizing the process and resources, and implementing the solution). Thus, we view the activities of the client in the value production as participating in the value production process, in the co-production of knowledge. The advantage for the service provider of the clients being involved in the development of new services or products, or in the further improvement of existing ones, is, that this participation helps the service organization gain a better picture of the client's needs, and improve quality. A tight and permanent cooperation between service and client organization makes the co-production special. In this cooperation, not only the client learns but through the interaction but also the KIBS provider.

KIBS organizations acquire knowledge from the problem of the client, and by combining it with other more general knowledge they generate new knowledge. Learning from the feed-back also helps improve a company's service. There are many ways for the client firm to contribute to the successful cooperation or co-production, if it is committed to the common goal, shows personal obligation, personal dedication to the project success and undertakes individual responsibilities, and also ensures an effective communication with the KIBS organization (such as sharing information with the service provider which is relevant for the outcome of the project), shows understanding and tolerance towards problems occurring during the process, respects the judgment and suggestions of the partner, and monitors the progress of the project (Bettencourt et al. 2002).

Skjolsvik et al. (2007) identify six factors which can have an impact on the value-creation in KIBS. A project can facilitate the joint knowledge creation, if

- 1.) it is a special assignment which requires a tailored solution and gives a chance for participants to learn;
- 2.) people with diverse values, beliefs, cognitive characteristics, professional diversity are needed to fulfil it;
- 3.) it is urgent (under time pressure creativity grows);
- 4.) it is a large project requiring a large number of experts and a long time to be finished (there is more chance to learn, to share knowledge);

- 5.) the client has certain knowledge in the field of the problem to be solved, which affects the level of his expectations toward the service organization;
- 6.) face-to-face interaction with representatives of the client firm is made possible.

We think it is important to briefly analyze one more aspects of the joint value (knowledge) production between service provider and client, an issue that is addressed among others by Maister (2003) who differentiates three kinds of client work, which he calls Brains, Grey Hair and Procedure projects. The differentiation is important because it considers also factors that have not been addressed in this paper yet, and which we find also relevant. When delivering a service to a client, not only the service providing organization is relevant but also the people would work on a certain assignment. For the decision about who, which member of the service providing firm should fulfill the mandate, the service provider has to watch the level of complexity (e.g. extremely complex problem or simple ones etc.), and what the key elements of professional service are (e.g. creativity, innovation, experimenting with new approaches, using new concepts or techniques etc.), if the projects are unique or require routine solutions.

Innovativeness in the Co-Production Process

With Schnabl and Zenker (2013) we can state that the special sector of knowledge intensive services are especially interesting to innovation research, because they fulfill important functions with respect to innovation and economic growth. Knowledge creation in KIBS is goes along with research and development (Vilmányi 2011) and innovation (Kempplä and Mettänen (2004). The innovativeness of KIBS in innovation means facing not everyday challenges both for these organizations and their clients, and the economy as a whole. Resulting from the diversity of activities carried out by the service sector, also innovation processes are diverse, and different models of innovation are used. Regarding this, we can refer to Hertog (2000) who also emphasises that the production of services is often the result of a co-operation between the service organizations and their clients, in which the KIBS organizations can be

- 1.) carriers of innovation (when it helps transfer existing innovations from one organization to another organization);
- 2.) sources of innovation (if it develops innovations for the client organization, mostly in interaction with the client organization);
- 3.) a facilitator of innovations (if it supports a client organization in its innovations).

Also Windrum and Tomlinson (1999) state that many of these organizations are carriers of new technology (consultancies and training services), while others are producers of new technologies- such as computer, software etc. and services. Bouncken and Kraus (2013) find that the cooperation (simultaneous pursuit of cooperation and competition) between knowledge intensive organizations influences their innovation activity. Hence, three factors have an impact on the innovation performance: sharing knowledge with the partner, learning from the partner (inlearning), and also technological uncertainty. This special way of co-operation is addressed also by other researchers (Imreh 2007, Sheehan 2005). Sheehan also draws attention to a special feature of the KIBS organizations: their participation in competition may be different from that of other companies because they cooperate with their rivals.

Conclusion

When summarizing and comparing the diverse approaches to knowledge-intensive services, particularly those which do their activities in the business sector, we find it most important that knowledge-intensive service organizations function as external knowledge sources for other organizations, which is an important input factor for successfully competing in the market of services.

This competition can't be separated from a strengthening client focus. The enormous changes that have taken place in the field of the knowledge-intensive services, and the cooperation between service provider and client show that there are good learning possibilities in the service

co-production process. Since the sector is characterized by growing competition, the service providers have to increase the level of professionalism in their services.

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