

What Makes Higher Education Knowledge-Compatible?*

Ferenc Farkas, Ágnes Király

University of Pécs, Hungary, farkas@ktk.pte.hu, kiralyagnes@ktk.pte.hu

Abstract: An empirical research is under way at Faculty of Business and Economics, University of Pécs planned to be conducted among approx. 800 Bologna BA (BSc) students in 2009, including the reinterpreted model of Probst and Raub (1998) which summarizes the components of knowledge management. In the study we apply the definition of knowledge-based services to higher education institutions in order to explore various aspects of the role of the university as a site of knowledge management, ranging from active student participation in higher education to the methods and tools that can be used for knowledge scouting, caring and developing at university. We intend to identify clusters of students in line with the phases of the knowledge model as the result of the research. Our hypothesis is that there are some biases among these phases, i.e. these clusters; so the aim of our research is to reveal the reasons for the asymmetrical nature of the process and to find out the prospects how to moderate it – with providing recommendations to the strengthening of each knowledge management phase. Other purpose of the study is the generalization of results in order to determine conclusions by literature which are valid to the whole higher education system.

Keywords: knowledge management, higher education, knowledge-intensive business services (KIBS)

1 Introduction

Fundamental focus of knowledge management models is the analysis of the expansion and quality of organizational knowledge processes. Underlying principle of knowledge management is that organizations recognize the quality and quantity of knowledge they possess. There is no one organization which does not acquire, store or distribute knowledge some way. The question is that if they apply their knowledge capital effectively, what is the added value of it with which this capital contributes to the total value of the products/services and customers of the organization.

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The main goal of knowledge management is to raise the value of the organization with the application of the existing knowledge and intellectual capital within the organization. One basic assumption of knowledge management is that the enhancement of knowledge base can support the organization in achieving a better position in competition. In the field of knowledge management it is an accepted assumption for circa two decades that knowledge means much more than the sum of data and information as it includes the ability of application and utilization of information as well [1].

Higher education institutions have great opportunities in the field of practicing knowledge management tools [2]. In the focus of this study there is a novel interpretation of the process of knowledge management, according to which knowledge is not applied to organizational knowledge; this study examines the knowledge transfer between the higher education institutions (as knowledge intensive service providers) and the students (as clients). Students represent such networks the elements of which are capable of knowledge sharing and knowledge distribution among each other.

Based on the experiences of the last years within the frames of mass education, deviation is implicitly higher regarding the number of excellent and lagging students, but the reason for this is not only the increased number of students. Take a look at a company's example: two organizations having the same facilities could perform so differently – difference is often caused by that added value which is the consequence of the effective way of knowledge management application. According to the axiom of Davenport-Prusak [3] organizations which promote cooperation and information sharing outperform others.

The aim of our survey is to prove the hypothesis which states – on the analogy of organizations competing in the marketplace – that the success of students through their years spent in university and after on the labour market depends on how much they succeeded in learning the best practices of knowledge management.

2 Growing Role of Knowledge-based Services

In the past two decades knowledge intensive business services (KIBS) were observed fields of interest. Difficulties in finding a common understanding are connected to different aspects of KIBS, for which it seems reasonable to find factors which allow us to distinguish between business services generally, and knowledge-intensive services. [4]

To start out we will look at the definition of Miles, according to which there are companies which “provide knowledge-intensive inputs to the business processes of other organizations – knowledge-intensive business services such as computer services, R&D services, legal, accountancy and management services,

architecture, engineering and technical services, advertising, and market research” [5]. A similar 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” [6]. A definition containing basically the same elements as the definitions above, is accepted by the European Commission, according to which “knowledge-intensive business services are companies that provide inputs – based heavily on advanced technological or professional knowledge – to the business processes of other organizations” [7], emphasizing three major features of KIBS: professional service, external service, and knowledge-based service, which will be described later in detail.

Companies providing knowledge-intensive services are called knowledge-intensive firms (KIFs) by some authors, and are fundamentally companies which sustain their competitive advantage through processes of knowledge creation [8], and do this “by solving their clients’ problems through the direct application of knowledge” [9]. Thus, in knowledge-intensive firms knowledge has more importance than other inputs, and human capital, compared to other kinds of capital: to physical or financial capital, dominates [10] [11]. The performance of organizations which provide knowledge-intensive services has an effect on the performance of their clients. While at most organizations knowledge is embodied in processes or products, at knowledge-intensive service organizations it resides in the experts and its application is mostly customized, based on the clients’ needs [9]. In case of a higher education institution this expert – client relationship also exists, we can find it in accordance with lecturer – student relations.

The KIBS-sector contains many different kinds of KIBS. Here, we only outline the most important features of these sectors. (See more in [4].)

- Knowledge-Intensity
- Growth Rates, Market Relations
- Expertise, Professionalism, Self-Regulation
- Value-Creation, Innovation.

The European Union [7] and the OECD [12] recognized the importance of KIBS as well and supported projects connected to knowledge intensive sector. However, in this shift towards knowledge-based services and towards the development of these kind of services usually such services are mentioned which derives from the business sector [6], [7], [12].

Nevertheless, there are several arguments to deal with not only in case of business organizations but in case of other kind of organizations as well. On one hand, because similarities can be seen between the processes of business sector and the processes of public and third sector organizations’ tendencies, as managing knowledge has become an important issue not only in business sector but in public

and nonprofit sector as well [13], [14], [15]. On the other hand, because the issue of knowledge management in other sectors compared to the profit-oriented sector is still of low importance. So it is necessary to examine organizations of these sectors, among them higher education as well [16], to provide one more proof of the existence of knowledge asymmetry.

To be able to investigate on knowledge processes in higher education institutions, we should have a look at the determining success factors of knowledge processes at first. When we have considered the discussion on knowledge processes in universities, we have found that characteristics of the organizations should have been considered. For this, we find it appropriate to view those features of universities, producing and delivering service to the public, which can have an impact on successful implementation of knowledge management programs. We should consider the following elements: [17]

- Actors of knowledge processes
- Development of a supporting organizational culture
- The existence of an appropriate communication system
- Barriers of knowledge transfer and the causes of it
- Methods of making knowledge available to all interested people
- Knowledge flow is influenced by overlapping fields of activities, and cooperation with other organizations
- Willingness and capability of universities to investment in technology
- Performance measurement methods.

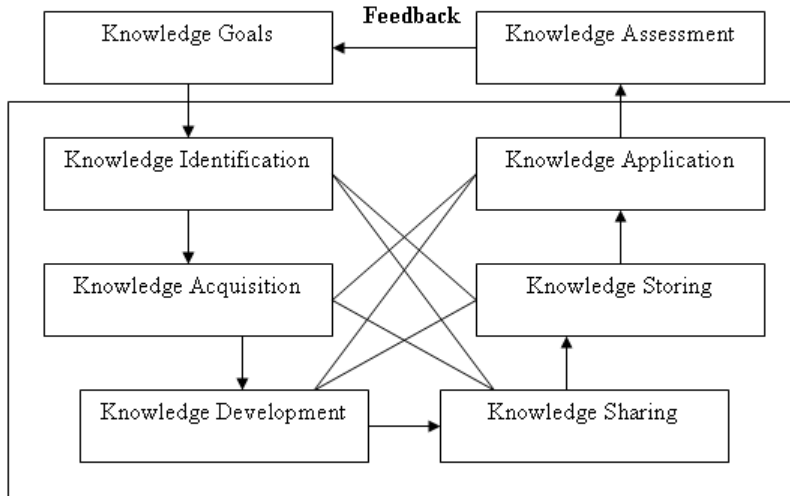
Synthesizing these information, we concluded, that the model of Probst and Raub (1998) can be perfectly interpreted to higher education institutions concerning knowledge processes and the elements of it. In the next phase we intend to present our approach on that.

3 Model of the Empirical Research

The most effective knowledge implementing students ('knowledge students' as an aphorism of knowledge workers) create networks within the frames of which they can continuously develop themselves. According to Cross-Davenport-Cantrell [18] formal education means only the starting point of the knowledge acquiring process. Higher education institutions have already realized that "job for life" is no longer the future of their students. Universities intend to prepare their graduates for the labour markets they are likely to face and enhance the career opportunities for those already in employment. [19] So now this is the time for students to make

this realization as well. The more successful knowledge user would like somebody to be, the more emphasis he/she has to put on interpersonal relationships, on participating in diversified networks.

From the models on knowledge processes, we based our theory on the model of Probst and Raub [20].



Process of Knowledge
Source: Probst-Raub (1998)

The process of knowledge consists of two cycles – an internal and an external one – in which building on the previous element and the idea of feedback exists from the beginning to the end.

Interpretation of the internal cycle to knowledge management in universities is the following:

3.1 Knowledge Identification

This phase means the identification and review of information and knowledge processes and sources after determination of knowledge goals. According to our assumption students have to know what kind of knowledge they need to have and how they can obtain this knowledge. For this the followings have to be examined:

- on one hand the existing data-, information- and knowledge processes and that how much these meet the requirements,
- on the other hand – based on the analysis of processes – needs for data, information and knowledge have to be determined.

Through the phase of knowledge identification, concerning competition among students, it is vital that already existing knowledge become recognized. This applies to skills and competencies providing personal competitive advantages and to the know-how of knowledge acquisition as well. As a result of the knowledge identification phase the transparency of students' (and other members of the organization – e.g. lecturers') knowledge needs to be achieved, which means that all members of the organization (the university) access all kind of information and that everybody knows who is the expert of what. One of the possible and often used tool of ensuring transparency is to make so-called knowledge maps, which include the internal and external information carriers of the organization (experts, lecturers, databases, important internet links, etc.), the important characteristics of them (e.g. way of access, field of interest they can provide information on, etc.), relations among them, the flow of information. With the help of knowledge maps students can easily find the person or database who or which can help them in a certain topic. Knowledge maps draw up the differences (gaps) between student clusters under the results of the empirical research.

3.2 Knowledge Acquisition

In the knowledge acquisition phase we need to aspire to obtain the missing knowledge. Possible ways of this in case of Bologna BA students, participating in the analysis are the followings:

- Utilization of relationships: collecting the information which can be obtained from lecturers, different programs, professional competitions and media
- Cooperation: collecting experiences and information during cooperation with partners. Spectrum of the cooperation can be from the loose relations (common tender, project) to the cooperation among organized frames (student organizations, student college).
- Purchasing knowledge: purchasing standards, software, literature, importing best methods, etc.

Higher education institutions can also contribute to these processes with fostering the mission that students need to have access to the intellectual resources of the university in a diverse and learner-centred culture that promotes the intellectual and civic engagement of students, faculty and staff with each other and with institutions as well. [21]

3.3 Knowledge Development

It is not enough to collect knowledge to have real competitive advantage. Sveiby [22] concludes the following on the relation between information and knowledge:

- Information abundance does not result automatically in better knowledge;
- Importance of the user has grown instead of the service.

This is particularly true in such knowledge oriented organizations among which (in a previous part of this study) universities were classified. Knowledge development is an attempt for students to generate the necessary knowledge themselves. We think of development of ideas, models, skills, products, processes, etc. This knowledge does not have to be newly created; it is enough if it is new for one certain person. Already in one work of Bögel [23] experimentation emerged among the ways of enhancing knowledge capital. He stated that in every part of the organization can good ideas emerge; it is the task of the leader (the lecturer) to encourage these initiatives, to provide opportunities for the good conceptions. For this, supporting organizational culture is elementary, as it creates balance between structure (order, regulation, control) and chaos (change, innovation).

Knowledge can not be developed directly, only in an indirect way with the increase of individual and collective creativity. If the level of individual or collective creativity is high, knowledge develops almost on its own. To improve creativity, you can use the following instruments:

- To improve individual creativity: to create the proper environment. It involves the recognition of creativity, to tolerate mistakes (to a certain degree), to allow students to choose projects freely, to listen to creative ideas and implement them.
- To improve collective creativity: emphasis is primarily on the promotion of communication. Such groups need to be established members of which are glad to work together, to communicate with each other. This results automatically in synergy, where the performance and knowledge of the group is much higher than the sum of the knowledge and performance of the individuals.

3.4 Knowledge Sharing

The aim of knowledge sharing (or knowledge distribution) is to multiply knowledge. Knowledge transfer has two main parts: the transmission part and the absorption part by a certain individual or group. If knowledge is not accepted by the consignee, knowledge transfer will not be implemented. To make the knowledge available does not mean knowledge transfer. It is not even sure that transmission and absorption is valuable and profitable. It happens only if the new knowledge causes some kind of change in behaviour or it lead to such novel ideas which then result in different behaviour. How easy to understand and anchor knowledge depends on the type of knowledge. Explicit knowledge can be embedded into methods, documents and databases and can be exactly forwarded. Transmission of implicit knowledge [24] requires wide range of personal relations.

Transfer connection can be a partnership, a mentorship (tutorial system) or the system of professional practices. These relations presumably promote some kind of knowledge transmission method – from explicit knowledge to the hidden one. Electronic technology and knowledge maps are the part of the infrastructure of implicit knowledge transfer.

3.5 Knowledge Storing

This phase includes the assurance of the identified, acquainted or developed, distributed or utilized knowledge in order to be available in the future again. Connected to the fixing of knowledge, the assurance of searching and availability has to be mentioned. Here belongs the continuous, regular and conscious updating and data protection to a necessary extent. Knowledge can be fixed or saved in the following ways:

- Individual saving: individual students are efficient knowledge stores but this does not mean a solution in the long run as in the case of higher education institutions, the basis of students always keep changing, and when a student leaves his/her saved knowledge leaves as well.
- Collective saving: groups can be regarded as knowledge storing entities, collective sense saves information more effectively than individuals in many cases. Here participants need to take care of the proper flow of knowledge within and among the groups, such as regular meetings, note-taking.
- Electronic saving: knowledge existing in an explicit form can be saved in information systems as well. We need to take care of that the saved information should be searched, current and appropriate in its quality. Low-quality or out-of-date information have to be deleted.

According to our assumptions distinct student clusters will represent significant differences in the efficiency of methods and techniques of knowledge saving. Other sources and explanatory variables of knowledge asymmetries will be the subject of our survey – mainly with the aim of eliminating.

3.6 Knowledge Application

Knowledge application has to ensure that knowledge is used productively. This is the purpose of knowledge management: to utilize knowledge. It means that the toolkit of knowledge management needs to adapt to the user, here to the lecturers and students and they have to be involved in the establishment of activities. Processing of knowledge contents have to touch the spot in order to the user of the knowledge may receive goal-oriented information on what he/she has to learn.

Interpretation of the external cycle to knowledge management in universities is going to be a remarkable part of the empirical survey as well, planned phases are the following:

3.7 Knowledge Goals

When defining goals, we have to determine what competencies need to be created, stored and/or developed at students. In practice definition of knowledge goals is a difficult task as knowledge management is quite a young discipline, the lack of common language may hinder the determination of goals.

3.8 Knowledge Assessment

At the introduction of knowledge management we have to face the problem that based on experience what cannot be measured seems to have no importance. Measuring knowledge revises the achievement of goals and the transparency of changes in organizational knowledge. According to Davenport and Glaser [25] key of knowledge management's success is (among others) the implementation of measurement culture in which time and money spent on the knowledge system needs to be certified. In order to be able to survey the whole system, the organizational culture needs to be measure-oriented. Its interpretation in case of universities is equal to an efficient responsibility system which requires the knowledge and application of the delivered information. Particularly, exchange of knowledge to future success on the labour market should be emphasized, for which the tutorial system applied at the University of Pécs Faculty of Business and Economics provides a proper framework.

Summary

„New knowledge always begins with the individual.” [26]

It is important in the Bologna BA studies to apply new up-to-date educational methods and techniques which can foster the support of talented students and which ensure structured frames to the permeability between different educational levels [27]. Knowledge-oriented organizations which characteristics are quite similar to the ones of KIBS (Knowledge Intensive Business Services) give numerous knowledge management tasks to all of the stakeholders of the organization. In case of higher education institutions this has a particular importance in case of university and faculty leaders and students. Different character of knowledge management is not only an organizational aptitude; it is a question of observable competencies in case of students. Mass education (supported by Bologna process) especially strengthens this knowledge asymmetry phenomenon. The European University Association outlined 10 key success factors in the Prague Declaration [28] for European universities to be able to cope with the challenges of the rapidly changing environment. These are:

- widening opportunities for participation in and successful completion of higher education;
- improving researcher careers;
- providing relevant and innovative study programs;
- developing distinctive institutional research profiles;
- shaping, reinforcing and implementing autonomy;
- increasing and diversifying income;
- enhancing quality and transparency;
- promoting internationalization;
- increasing and improving the quality of mobility;
- and developing partnerships.

If any conclusion can now be drawn, it is the need and opportunity to reveal the place of knowledge asymmetries and the possibilities of reduction. BA students have to be the subjects of knowledge management process, the phases of which provide different ways to handle the asymmetries and lacks, and as a final goal – to abolish them. Based on empirical experiences the implementation of the task can be conducted in the hope of success. This study and the planned research contribute to all of this with their own toolkits.

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