

Re-Thinking Knowledge-Based Management

Harri Laihonen, and Antti Lönnqvist

Abstract—This paper challenges the relevance of knowledge-based management research by arguing that the majority of the literature emphasizes information and knowledge provision instead of their business usage. For this reason the related processes are considered valuable and eligible as such, which has led to overlapping nature of knowledge-based management disciplines. As a solution, this paper turns the focus on the information usage. Value of knowledge and respective management tasks are then defined by the business need and the knowledge-user becomes the main actor. The paper analyses the prevailing literature streams and recognizes the need for a more focused and robust understanding of knowledge-based value creation. The paper contributes by synthesizing the existing literature and pinpointing the essence of knowledge-based management disciplines.

Keywords—Knowledge-based, knowledge management, value creation.

I. INTRODUCTION

KNOWLEDGE management as a discipline aims to improve organizations' effectiveness and performance. This is aspired with two objectives, first, by making the enterprise act as intelligent as possible to secure its viability and overall success and second, by otherwise realizing the best value of its knowledge assets [1].

The theoretical foundation of knowledge management lays in the resource-based theory of the firm, which tries to understand and explain how internal resources contribute to organizations' sustainable competitive advantage [2], [3]. Its follower, the knowledge-based view (KBV) stresses knowledge resources and conceptualizes the firm as an institution for integrating knowledge [4], [5].

This paper takes a wider perspective than the traditional knowledge management and uses the term 'knowledge-based management' disciplines when referring to the research streams examining the challenges and managerial practices related to information and knowledge. These approaches aim to support managers (and organizations more widely) in utilizing existing knowledge efficiently (i.e. exploitation) and in creating new knowledge (i.e. exploration) [6], [7].

Management science evolves and continuously produces new concepts and approaches that require more research, definitions and explanations. In the area of knowledge-based management, literature streams of information management, business intelligence, intellectual capital management and knowledge management have been established since the mid

1990's when the very profound articles of knowledge-based view of the firm brought the discipline to the attention of the general management research community. All these approaches aim to provide solutions to overcome management challenges related to knowledge.

The literature provides a wide range of managerial frameworks and models for managing knowledge resources, for example, information management cycle [8], SECI-model [9], different business intelligence process-models [10] and intellectual capital management frameworks [11]. These provide a slightly different perspective to gathering, providing and refining data, information and knowledge.

The first argument of this paper is that knowledge-based management disciplines have grown into their separate species with intrinsic value. Value creation aspect has been put aside and the focus is primarily on information and knowledge provision, not on improving organizations' performance [12]. We call this as a push-strategy. The main problem of the push-strategy is that researchers continuously develop models that are not relevant for organizational usage. For example, there are dozens of models available for managing and measuring intellectual capital but organizations are not using them [11]. This means that an enormous amount of research resources are used for developing models and frameworks which are not managerially relevant.

As a solution, this paper proposes that instead of the abovementioned push-strategy the focus of knowledge-based management activities as well as research initiatives should be on information and knowledge usage, that is, knowledge-based value creation. Value is only created when knowledge is utilized. Already [1] stated that objectives of knowledge management are "making the enterprise act as intelligent as possible" and "otherwise realizing the best value of its knowledge assets". The focus of knowledge-based management disciplines should be returned to value creation aspect. In today's highly knowledge-intensive environment this means that every employee is a knowledge manager and responsible of knowledge acquisition and utilization.

The second argument of the paper is that knowledge-based management disciplines lose their strength in over-analyzing and over-conceptualizing the fairly simple idea of turning knowledge into value. As a result, the literature is fragmented and especially the practitioners seem to get confused by the complexities of the knowledge-based management literature and the provided solutions. Researchers of the different disciplines on the other hand seem to more or less repeat the same managerial innovations by using different terminology and key concepts. Furthermore, the knowledge-based research disciplines seem (with a few exceptions) detached from the mainstream management research discussion. Thus, the knowledge-related management discussion is left in a marginal, specialist role – although the knowledge-related

Harri Laihonen, PhD., is with the Department of Business Information Management and Logistics, Tampere University of Technology, Finland (phone: +358 3 3115 11: fax: +358 3 3115 4680: e-mail: harri.laihonen@tut.fi).

Antti Lönnqvist, Prof., is with the Department of Business Information Management and Logistics, Tampere University of Technology, Tampere, Finland (e-mail: anttoi.lonnqvist@tut.fi).

challenges are faced by basically all organizations and managers.

As a solution to the fragmentation problem, this paper calls for a re-engineering and re-thinking of the whole knowledge-based management research. At present, too much attention is given to studying and refining, for example, business intelligence process models (as an independent management support activity). Instead, the focus of scholarly attention should be on the value that these knowledge-based management activities create for the organization. Moreover, simpler models and management guidelines are needed. More or less independent research streams should join their forces and seek for more general solutions to current management problems.

The rest of the paper is organized as follows. First, the paper provides a short introduction to the wide literature on knowledge-based management approaches. This is followed by a discussion which turns the focus from academic disciplines and their push-strategy towards the information and knowledge user and his/her business need. Finally, some preliminary conclusions and suggestions for future research are drawn.

II. LITERATURE – KNOWLEDGE-BASED MANAGEMENT DISCIPLINES

A. Information Management

Information and communications technology (ICT) enables the sharing of information between employees, organizations and networks. Ideally, technology acts as a lever for business value and therefore ICT is often considered as the key enabler of information and knowledge management. The focus of information management is strongly on explicit knowledge and exploitation. Some work tasks related to information processing can be automated using ICT which is likely to significantly improve efficiency and decrease the possibility of human error in handling the information.

Reference [8] defines information management as a continuous cycle of six closely related activities. The cycle begins with the identification of information needs. Then, information acquisition addresses these needs. It is important that information sources are continuously evaluated, new sources assessed and the matching of sources and needs re-examined. Third step is information organization and storage. The objective of this phase is to create and compose an appropriate organizational memory [13], [14].

The gathered and structured information is then packaged into information products and services targeted at different users and their information needs. Next, information is distributed to users. Finally, information is used for the creation and application of knowledge through interpretive and decision-making processes. These involve social construction of reality and information representation and are expected to lead to adaptive behavior.

Information management creates value through information storage and fast and efficient sharing of data and information. Data is refined into structured information and is given a

meaning. From the viewpoint of knowledge strategy the focus is on explicit knowledge and codification strategy, which typically aim to support decision-making and deliver value in this way. In some occasions and with the support of modern technology, it is also possible to generate value for external interest groups. Nevertheless, unless the collected and stored information is utilized the whole process becomes worthless.

B. Business Intelligence

Business intelligence aims at finding relevant information about markets, changes in customer preferences and competitors' actions. Internal and external information sources are typically used. The task is not only to find the relevant information but also to condense it so that decision-makers can make speedy decisions based on it [15]-[17]

According to [10], the term business intelligence has two meanings. First, it refers to the refined information and knowledge that describes an organization itself and its state in relation to its markets etc. Second, business intelligence refers to the process that produces insights, suggestions and recommendations (i.e., the information and knowledge described above) for decision-makers.

The business intelligence process starts with the identification of information needs [18]. These are based on the (managerial) decision that is to be taken. Then, information is gathered, processed and analyzed (e.g., using data mining techniques) and disseminated for the users. The final phase is the actual usage of the refined information in making decisions. This process has clear similarities with the above described information management cycle. Nevertheless, business intelligence brings in the business decision context compared to above described information management.

Business intelligence is a discipline focused on scanning, analyzing and condensing information in order to facilitate decision-making. Especially the newer approaches of business intelligence aim further than information management. The purpose of the business intelligence process is to provide new insights with business value. Business intelligence function aims to provide a snapshot of the operating environment and thereby provide decision-support. The approach is typically strongly connected to information systems, data-mining techniques and more recently analytics. Therefore, explicit knowledge and codification strategy are implicitly connected to this management approach. However, qualitative approaches have gained a firm foothold in the most recent applications. The value of disseminated information and understanding is delivered when the business process utilizes and puts the intelligence in action.

C. Knowledge Management

Whereas RBV and KBV aim to explain organizations' value creation logic at a very profound level, knowledge management proposes that firms' know-how (i.e., knowledge) determines its capability to combine and apply other resources (tangible or intangible) [19]. Knowledge management as a discipline aims to improve organizations' performance by stressing the importance of knowledge creation, development,

organization, and, finally leveraging [1].

The discipline of knowledge management can be further categorized, for example, into sub-streams of knowledge typology [20], [9], [21], knowledge transfer [22]-[25], knowledge creation [9], [26] and knowledge storing [13], [27]. Management of these knowledge processes can be approached with two different strategies [28]. Other organizations emphasize technical solutions and aim to explicate their employees' knowledge and expertise into information systems (i.e. the focus is on information management). Some other organizations adopt a more person-oriented approach and build on person-to-person contacts and interaction.

The underlying strategic choice leads to different kinds of management practices [12]. Focusing on technological solutions requires investments on ICT and then reward systems should reward employees for using and contributing to document databases. Organizations applying codification strategy typically hire young professionals who are able to efficiently reuse existing knowledge. In contrast, person-oriented organizations invest in facilitating conversations and the exchange of tacit knowledge. They hire people who are capable of problem-solving and who tolerate ambiguity. Here, reward systems encourage knowledge sharing with colleagues.

Knowledge management as a discipline makes a distinction between the tacit knowledge (e.g., experts' skills and experience) and the explicit knowledge (i.e., information that can be documented). This approach gives room for human perspective. Other disciplines perceive knowledge more as an object whereas this approach pays attention to social phenomena and sense-making. Correspondingly, also value creation within this discipline can be perceived in two ways. Either as a straightforward technical process of decision-support or as a complex social process where individuals create and give meaning in interaction. The latter view contains the creation of new knowledge and many other human-centric approaches such the peer-support of individual knowledge workers. Value here refers also to, for example, transfer of tacit knowledge as well as protecting it from leaving the organization. Here the human-being is not only the user of information but also participates into knowledge creation.

D. Intellectual Capital Management

Intellectual capital refers to an organization's "non-physical sources of value (claims to future benefits) generated by innovation (discovery), unique organizational designs, or human resource practices" [29]. Typically, intellectual capital is defined through its three subcategories: human capital, including competences and employees' knowledge; relational capital, including customer relationships and brands; and structural capital, including business processes and documented information stored in databases [30], [31]. Intellectual capital management is a strategically oriented management activity which aims to take overall care of an organization's non-physical, knowledge-related assets [11].

A lot of models and frameworks for measuring, managing and reporting intellectual capital can be found in the literature

[32]. Different models are designed to serve different purposes. For example, some models are aimed at capturing the monetary value of intellectual capital, some for internal management and others for external reporting.

Intellectual capital management as a more strategic discipline examines knowledge-related resources comprehensively. Resources such as the brand, immaterial properties, customer relationships and employee competence are identified and managed as strategic value drivers. Value in this particular management context is difficult to perceive. On the one hand, value lays in the recognition of different knowledge assets and their prioritization. This supports strategic management and possesses mainly internal value for strategic decision makers. On the other hand, especially the relational capital turns the focus outside the organization and considers value of knowledge resources from an external perspective. Many different models for intellectual capital management have been proposed but once again the overarching question is – who is actually using these? [11].

III. DISCUSSION - KNOWLEDGE-BASED VALUE CREATION IN FOCUS

The purpose of this paper was to draw knowledge-based management researchers' attention to two alarming phenomena. First, the relevance and value of the knowledge-based management agenda will be endangered unless the focus is not returned to value creation aspect. By following [1] each knowledge management initiative should make organizations act more intelligently or otherwise realize the best value of knowledge assets.

This relates also to the wider discussion on resource-based theories that been criticized due to their excessive internal focus [33], [3]. This is clearly observable also in the descriptions of the above-described management disciplines. Especially the service-orientation of the modern business world poses management challenges that cannot be solved only by staring at internal resources. Customers' role as co-producers of services as well as the networked nature of service provision necessitates new management approaches and tools [34]-[36].

Furthermore, during the two decades of knowledge-based management research the worlds as well as some of the basic assumptions and starting points of the early applications of knowledge management have changed. Knowledge is still a resource, an important one, but it is also the main output in many business activities. Knowledge is everywhere – knowledge workers, knowledge-intensive organizations and knowledge economies have changed many of the basic rules of business (e.g., service-orientation). More than ever, the key to success is the ability to process information and create value from knowledge resources.

The main message arising from this knowledge-intensity of modern societies is that knowledge-based management should not be considered only a support function whose task is to produce and provide information (see the left part of Fig. 1). Instead, the whole arrangement has to be turned the other way round – focus should be on the information-user and his/her

knowledge needs. After all, knowledge is turned into value by the user, who then becomes the main actor.

This means that knowledge-based management is actually embedded in every business process (see the right part of the Fig. 1). This will not take away the importance of knowledge management or business intelligence unit or the chief information officer but emphasizes knowledge usage instead of information provision. The variety of knowledge usage is endless – decision-support, consulting, advertising, educating, cleaning, cooking etc. but the value is exercised only by putting knowledge into action. In the figure knowledge-based management tasks are divided into two distinctive categories: managing with knowledge and managing knowledge assets. The former refers to practices that are used, for example, for utilizing data, information and knowledge for development purposes or to support decision-making. The latter task of managing knowledge assets refers to managerial practices that are directed to maintaining and developing the value of knowledge assets. This means, for example, organizational learning and renewal, knowledge creation and knowledge storage. We argue that understanding how these two types of activities are applied to practice as embedded management routines and how they contribute to customer value creation is where the focus of knowledge-based management disciplines should be.

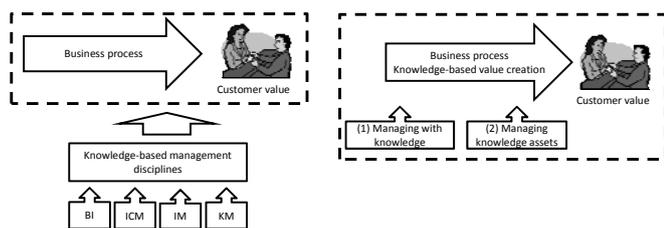


Fig. 1 From support function to an embedded strategy

The second starting point for the paper related to the fragmentation of knowledge-based management literature and practices. It was argued that over-analyzing and over-conceptualizing the idea of knowledge-based value creation has led researchers to re-produce management innovations and practitioners to scratch their heads, confused by the complexities of the knowledge-based management and the variety of different frameworks and approaches. In this paper four knowledge-based management disciplines were chosen as a target for more careful analysis. Also some other selection could have been made. However, here the purpose is only to illustrate the point, not to slander or underestimate the value or importance of any of these disciplines.

Fig. 2 illustrates the overlapping nature of knowledge-based management disciplines. First, all the disciplines seek for an in-depth understanding of the role of knowledge in organizational value creation. Second, various managerial models and practices are developed to deal with knowledge and knowledge-related activities. Third, ICT tools are needed to carry out the management activities in practice.

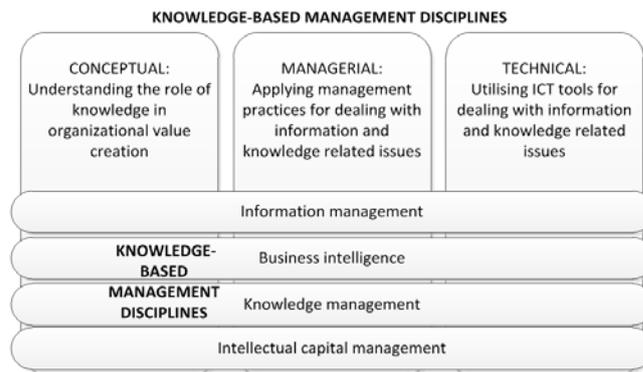


Fig. 2 Knowledge-based management disciplines

During the last decade of knowledge-based management research the above described research streams have grown from practical knowledge management tasks into separate disciplines with intrinsic value. As a result, the individual disciplines have professionalized and specialized. The positive consequence of this development is the improved quality and depth of the concepts and models developed in each discipline. However, the negative consequence is that the disciplines have “stopped talking to each other”, resulting in a confusing array of closely related but different managerial approaches for knowledge-related problems. Whereas the management is in need of concepts, managerial models and technical tools to deal with knowledge-related phenomena (the top part of Fig. 2) the research disciplines currently seem to be somewhat detached from these basic aims of their activity. Instead, their efforts are used in building up each discipline as a proper academic field with its own specialized conferences and journals.

In the practice of management, it may be difficult to distinguish the discussed disciplines as independent management functions. Instead, they are typically integrated in the general managerial practice. Whereas in 1995 it was important and relevant to pay a special attention to the recognition of knowledge assets, the role of knowledge-based management has changed when speaking of it in 2013. After two decades of analysis it would be time to synthesize what has been learnt.

From a critical perspective, knowledge-based management disciplines have forgotten the business linkage when developing sophisticated applications within their own academic circles. The aim of these disciplines and functions has been to develop theoretical models, frameworks, conceptualizations and information or reports in business context without critically considering what the users actually need and questioning whether those models and practices are even needed.

Today, the objective of knowledge-based management should be to improve our understanding about the role of knowledge in organizational value creation. Only by understanding how the knowledge assets are turned into value it is possible to develop managerial practices and tools to better master the value creation process. Individual disciplines have their important role in producing these tools and also

improving the understanding of the underlying business logic. However, the basic question of how to turn organizations' knowledge assets into value for knowledge workers and customers constitutes a common mission for all disciplines. Therefore, it makes no sense that every discipline re-produces the same basic process models with only a slightly modified terminology.

At a certain level, a re-engineering and re-thinking of the whole knowledge-based management research is called for. Business need should drive the solution seeking, not the other way round. More or less independent research streams should join their forces and seek for more general solutions to current knowledge-based management problems. And, when recognizing a real management problem, simpler models and management guidelines are needed.

IV. CONCLUSION

From the early contributions of knowledge-based view of the firm, the theoretical discussion has evolved to more pragmatic knowledge-based management disciplines like information management, business intelligence, knowledge management and intellectual capital management. This paper argued that these disciplines have grown into separate species with intrinsic value and somewhat forgot the original objectives of knowledge management. Another argument or concern of the paper related to fragmented field of knowledge-based management. Instead of joining their forces knowledge-based management disciplines as well as practitioners in the field have dug their own foxholes and created their own conceptualizations for knowledge-based value creation.

Table I summarizes the main aspects arising from the proposed solutions to the above-mentioned concerns. As a solution to the first argument, this paper proposes that instead of focusing on information provision and the push-strategy the focus of knowledge-based management disciplines and practices should be on information and knowledge usage, that is, knowledge-based value creation. This transforms the role of knowledge-based management from a support function to an embedded strategy, which leads to several major upheavals in the way knowledge-based management has traditionally been perceived.

TABLE I
 RE-THINKING KNOWLEDGE-BASED MANAGEMENT

	"Old way"	"New way"
Role of knowledge-based management	Support function	An embedded strategy
Focus of attention	Focus in KM process / models (process view)	Focus in the business and individuals (user view)
Responsibility	Experts / specialist units	Every employee
Implementation to organizational practice	KM brings something extra to the business process → work is done as usual	Embedded KM approach; a K-focused culture is needed
Structure of the research field	Several independent disciplines	A common knowledge-based management research discipline

The second problem concerning the fragmentation of knowledge-based management, calls for a re-engineering and re-thinking of the knowledge-based management research. It seems that there is a natural need for different disciplines to join their forces and seek for more general solutions to knowledge-based management problems. Currently, each discipline aims to resolve knowledge-based management challenges from their own fairly specific standpoints, which leads researchers to re-produce many of the management solutions with only minor conceptual differences. This is not an efficient way to advance science, especially when it simultaneously seems that the research produces models and frameworks that are not even needed by the practitioners, that is, we are conducting applied research – research that is aimed at solving pragmatic problems – which is not addressing the managerial needs in an ideal manner.

As a final conclusion, it seems that there is a time for synthesis and re-thinking of knowledge-based management research. Theory of knowledge-based value creation should be upgraded to match the requirements of the contemporary business world. Information usage and the user should be lifted to the prime focus and independent disciplines should not develop models without clearly linking their value with the business goals. Furthermore, responsibility of knowledge-based management activities cannot be delimited and pushed on the shoulders of the chief information officer. Instead, each employee should be responsible for knowledge management and knowledge-based value creation, which means that knowledge, has to be put into action.

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