



Knowledge management models as a source of employee and organization's efficiency

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Abstract

Motivation: Knowledge management in an organization is a new and less explored area in business literature and business practice. The scope of changes to enterprises influenced by competitive environment forces them to continuous seeking new ways of achieving the success. So-called intangible development factors start to be extremely meaningful — especially knowledge, consciously gained, created and disseminated through diversified methods aimed at shaping employees' appropriate behaviours and developing information technology, which succours this process. Applying this approach requires the proper preparation of the organizational background and the system operation allowing the selection of a specific model. There are a lot of knowledge management models for organization's decision-makers to be able to manage the resources properly and skilfully.

Aim: The aim of the article is to present the significance of knowledge management models' use in modern organizations. The authors constructed 2 main research questions for which they sought answers within the collection of empirical material: What are the main knowledge management models used in a company? And How can models influence the effectiveness of an organization? The following research hypothesis has been constructed: In practice management has not yet developed appropriate models for evaluating



and diagnosing the impact of models on the effectiveness of business decisions. The empirical material was collected by means of a qualitative method and the technique used was a secondary analysis of the existing data in the form of thematic sources.

Results: The results of the review of the literature of the subject are presented as a synthetic description. Literary research was conducted at the turn of 2016 and 2017. Added value is a review of existing models that can be used in management practice.

Keywords: management; organization; effectiveness, knowledge management models

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1. Introduction

Competitiveness nowadays lies in constant development, coming up with new ideas, launching new products or providing services, technologies and organizational solutions. This process requires involvement creative people and turning their ideas or knowledge into innovative solutions. Thus, the change from the post-industrial era to the knowledge-based one can be observed.

Virtually until the end of 20th century, traditional economy embraced mainly two production factors: work and capital. However, the basic character of the world's economy has vastly altered, especially over a dozens of years. Its predominant features include global competition, fast information flow, and a wider range of communication. The scope of changes to enterprises influenced by competitive environment forces them to continuous seeking new ways of achieving the success. So-called intangible development factors start to be extremely meaningful — especially knowledge, consciously gained, created and disseminated through diversified methods aimed at shaping employees' appropriate behaviours and developing information technology, which succours this process.

A significant number of organizations implemented in their structures the assumptions of knowledge management with particular emphasis on information technologies and invested resources in the implementation of the knowledge management system (Suhwan et al., 2011, p. 251). There are a lot of knowledge management models for organisation's decision-makers to be able to manage the resources properly and skilfully. The above mentioned methods will never replace human minds, but they will make employers and employees aware of how knowledge arises and what actions they can take to grow organization's potential. The objective of the paper is to present the significance of knowledge management models' use in modern organizations. The article is based on qualitative method and secondary analysis of the subject literature.

2. Literature review

The paper uses national and international publications. Books in the field of economics and management have been used, with particular reference to those regarding knowledge management, knowledge models and organizational ef-

ficiency. The greater part of the literature are current items, a significant part of which is dated after 2010.

3. Methods

The purpose of the study is to describe the impact of knowledge management models on organizational effectiveness. The authors constructed two main research questions for which they sought answers within the collection of empirical material: (1) what are the main knowledge management models used in a company? (2) how can models influence the effectiveness of an organization?

In order to answer these questions, the following research hypothesis has been constructed: In practice management has not yet developed appropriate models for evaluating and diagnosing the impact of models on the effectiveness of business decisions.

The empirical material was collected by means of a qualitative method and the technique used was a secondary analysis of the existing data in the form of thematic sources. The results of the review of the literature of the subject are presented as a synthetic description.

Literary research was conducted at the turn of 2016 and 2017.

4. Result

The results of the review of the literature of the subject are presented as a synthetic description. Literary research was conducted at the turn of 2016 and 2017. Added value is a review of existing models that can be used in management practice.

5. Various definitions of organization's effectiveness

Effectiveness belongs to one of the basic criteria of organization's assessment, however, as a matter of practice, there is huge divergence in defining this phenomenon (Ziębicki, 2007, pp. 332–336). In the literature there are a lot of interpretations of this notion, according to which effectiveness is:

- in economic context — a report between the results and spending expressed through the basic criteria: productivity, efficiency, profitability;
- in terms of goals — the extent to which organizational tasks are completed regarding economy or thriftiness — the concept deriving from praxeology;
- in systemic context — the extent to which organizational resources are exploited and establishing a rapport within environment;
- in comprehensive context — organization's ability to achieve its operational goals; this approach involves both systemic and task-based context; in fact, there are diverse effectiveness assessment concepts regarding its various aspects (Ziębicki, 2007, pp. 333–334).

Among many definitions of effectiveness in organization, there is one which states that it is an organization's ability to strategically adjust to particular changes in a given environment and also to productively and economically exploit resources in order to complete the formerly assumed tasks. Organization's effectiveness vastly depends on the degree of task completion, the amount of money and the way of allocating resources for particular actions. It depends on the delegated staff's working time as well.

As B. Kożusznik (2005) states various skills influence organization's effectiveness. The most significant ones include good communication and creative problem-solving. This definition considers quantitative and qualitative categories of organization's ability to process and act in changing circumstances. This ability can be easily recognised and the way of choosing and achieving goals can be verified.

Effectiveness is a visible result of organization's operation. Each organization tends to achieve the assumed goals or complete the tasks. It is hard to define if the given result meets expectations or if it stays in compliance with the previously accepted norms. Effectiveness is a feature that can be measured through different indicators. If an organization is able to stay on the competitive market and adjust to constant changes, its success is tangible.

Organization's effectiveness improvement process can start from the properly defined strategy, which should be characterised by:

- intellectual simplicity — a few key elements that can be presented in the chart; implementation on the operational level should be described in detail;
- external cohesion — matched with market trends or situations in a general and target environment;
- internal cohesion — operational programmes should indicate positive feedback (to support and complement one another);
- communicativeness — this strategy should be explained to employees to be accepted (Obłój, 2007, pp. 67–69);
- empowerment it is crucial knowledge sharing factor which supports to implement strategy (Wong & Laschinger, 2013, p. 950).

In the literature there are completely different approaches to organization's effectiveness assessment, taking its diverse aspects into consideration. The most common approach is elaborated by R.S. Kaplan and D.P. Norton (2001, pp.27–29), that is Balanced Scorecard. In this case, effectiveness is shown as the extent to which organization's strategy is accomplished and it embraces four categories: financial, operational, market and developmental.

Defining strategic goals, the appropriately linked assessment measures for all above-mentioned perspectives should be selected. This approach, according to the authors, forces managers to follow the holistic path in organization and to draw attention to organization's steady development.

Organization's effectiveness assessment model focuses mainly on performing the processes presented by M. Hammer (2007) (table 1.).

G.A. Rummler and A.P. Brache (2000) raised presented an interesting approach to organization's effectiveness (Kaplan & Norton, 2001, pp. 27–29). The model assumes that organization is a system and different processes between various fields within organization take place. It also indicates that compilation of actions in the whole organization and excluding problems arising within cross-functional connections are inseparable constituents. According to this idea, a research study is two-dimensional, as it includes organization's level and needs for effectiveness. In the demonstrated dimension the following organization's levels ought to be considered:

- the whole organization — the emphasis is laid upon relationships and dependence between the basic elements of organization and the market which it operates on; factors influencing effectiveness: strategy, organization's overall objectives and methods of measuring the results, organizational structure, resource efficiency;
- process — performing tasks, the way of results flow through organization; effects appear thanks to interdepartmental processes in organization such as: developing new products, supplies, production, sales, distribution, invoicing, executing liabilities;
- individualized workplace — the employed on particular positions perform tasks constituting a given process; the variables impacting effectiveness embrace: recruitment and promotion methods, scope of tasks and responsibilities, working standards applied, feedback conveyed, awards, rewarding system and training courses (Kaplan & Norton, 2001, pp. 27–29).

The second dimension refers to effectiveness needs heavily influenced by the outcomes achieved on each organization's level. Here one can mention:

- goals — defined by standards reflecting customers' expectations which concern: quality, quantity, delivery and execution date, cost of product or service;
- ways of projecting — organizational structure; arranging the process and workstation requires specific configuration of particular elements making effective goal achievement possible;
- way of management — each of the three levels of effectiveness analyses entails the appropriate way of management aimed at goal accomplishment (Kaplan & Norton, 2001, p. 46).

It has to be pointed out that skilful effectiveness management entails proper presentation of goals, projecting, and managing each of the three above-mentioned levels: organization, process and position, but all the levels have to be correlated with each other, e.g. a given post cannot be described properly, with no understanding the processes it involves. All attempts of defining organization's goals not linking them with the processes and employee's effectiveness system may result in not reaching the assumed aims.

Hajro et al. (2017, p. 245) points out that to develop a model illuminating team knowledge exchange processes ask key link between organizational diversity climate and the effectiveness of multicultural teams.

Not much as yet known how knowledge management models affect the organization's effectiveness (Rai, 2011, p. 779).

6. The Japanese model

The success of implementing and coordinating knowledge management depends to a large extent on the sharing of this resource (Wang & Noe, 2010, p. 115). This model was elaborated by the two Japanese: Nonaka and Takeuchi at the beginning of the 90s in their research study and is called 'a knowledge spiral'. It is considered the most innovative and futuristic approach to knowledge management. The model is based on tacit and explicit (formal) knowledge. Knowledge management by the rule of 'knowledge spiral' is a repetitive cycle of four knowledge conversion processes:

- socialization — from tacit to tacit knowledge. The key is to capture knowledge through direct contact with people. A significant factor is the experience of people passing the knowledge, that is e.g. teachers conveying the knowledge to students, 'brainstorm' meetings in organizations, or training courses conducted by managers;
- externalization — from tacit to explicit knowledge. Owing to this process it is possible to create knowledge, provide new solutions and come up with new ideas;
- combination — from explicit to explicit knowledge. It allows to systematize available/ accessible knowledge through categorizing and unifying of the information gained;
- internalization — from explicit to tacit knowledge. It allows to learn through action (Jasińska, 2015, p. 98).

The basis for effective modelling is knowledge sharing by workers in teams (Hormiga, 2017, pp. 10–32). Key players play a key role in this process, which encourages and motivates them to share knowledge. One of the key management tools is feedback (Quigley, 2013, p. 580) (scheme 1).

A. Jarugowa and J. Fijałkowska (2002, pp. 22–31) distinguish a few principles the Japanese model is based on:

- two types of knowledge: tacit and explicit;
- knowledge is not only a set of data and information, but also values, emotions or premonitions;
- apart from knowledge management enterprises ought to drive at creating it;
- all employees are involved in knowledge management and creation process;
- a fundamental role in the knowledge creation process is played by mid-level managers.

An essential thing here is that an organization should create knowledge properly, it must mobilize or stimulate tacit and explicit knowledge, reinforcing it through four conversion methods. The basic conditions fostering knowledge creation include: intentions, autonomy, instability, excessiveness and diversity. Basing on the spiral of knowledge creation within organization, a five-phase



model can be presented. The whole process starts with spreading tacit knowledge, next — creating the concept — explicit knowledge, next — concept confirmation phase in which verified and confirmed knowledge moves to the next stage — building a pattern. The fifth stage lies in equalizing the knowledge which ends all knowledge flow within the spiral.

7. The resource-based model

The resource-based model just theoretically shows how organizations generate and use knowledge. It is based on the ideas put forward by D. Leonard-Barton known as ‘Wellsprings of Knowledge’ (Presley Noble, 1996). D. Leonard-Barton indicates that in order to effectively manage knowledge, it is indispensable to correlate the following five elements with each other:

- key skills and competence including physical, technical and management systems, employees’ skills and knowledge, norms and values;
- solving problems together, sharing knowledge and looking for the best solutions;
- implementation and combination of new tools and technologies;
- experimentation, that is searching for better and innovative solutions;
- knowledge transfer, that is capturing knowledge from the environment.

The constituents of this model are strictly related to the internal structure of organization (implementation and integration of knowledge) and with environment they interact with (knowledge transfer). The factor linking all the elements and thus forming one system is key competence.

The model highlights that generating new knowledge and using the already-existing ‘know-how’ is determined by making particular kinds of knowledge interact as well with each other as with knowledge resources available in organization’s surroundings. An indispensable condition of this synergy is proper shaping and using personalized knowledge of other components of organization’s human resources that always get involved in turning codified knowledge into well-established one and vice versa.

The resource-based model affects present time, future, organization’s inside and its environment.

8. The process-based model

This model is based on experiences and solutions applied in practice, mainly in big consulting companies. Generally speaking, in this approach there are three major knowledge management processes (Laloux, 2015):

- creating knowledge — these are all actions aimed at expanding the knowledge resources within an organization. The process may take place through developing human resources or through gaining information from the target or general environment. Knowledge should be acquired or captured externally only when the development of an organization’s human resources is

not promising. Knowledge is unique exclusively when it is created on one's own. Therefore, the best alternative is to acquire knowledge internally through expanding intellectual capital, and if impossible, through acquisition of the whole businesses including their potential. As a result, a company becomes able to take its own decisions and initiatives single-handedly in order to implement changes;

- codifying knowledge — it aims at securing, gathering and making knowledge (documents) accessible. The process tends to present knowledge in the most assailable way to all members of organization. It lies in presenting organization's knowledge appropriately, making it accessible for everybody wanting to make use of it at the given moment, and disseminating these resources inside and outside an organization. Consequently, the gathered knowledge becomes intelligible and is easy to localize;
- knowledge transfer — it embraces knowledge transfer and absorption. In case of explicit knowledge, it is transferred via phone or email. There are plenty of methods: audio or videoconference, groupware, email, Internet, Intranet. In case of hidden/ tacit knowledge, which results from experiences and skills, it has two dimensions: professional (gestures, movements) and integrating (thinking, perception of reality, vision of the future).

The determinant of the effectiveness of knowledge transfer is the appropriate management of the organizational culture that improves individual and team engagement (Wennberg et al., 2013, p. 778).

9. The model by Gilbert Probst, Steffan Raub and Kai Romhardt

This model illustrates management of intellectual capital in organization (Probst et al., 2002). According to the authors, there are six processes connected with knowledge management and that are presented in the form of circles and ellipses (scheme 2).

The above mentioned processes can be described as follows:

- knowledge localization — it is aimed at discovering wellsprings of knowledge and creating the methods allowing to capture knowledge through structuring intellectual capital and through creating knowledge maps (as a tool to locate the resources of knowledge in organization);
- capturing knowledge — knowledge is gained through interactions or social relationships with external environment, that is customers, suppliers or business partners. There is also a possibility to hire external experts or to acquire an innovative organization;
- expanding knowledge — these are research studies and developing new products, improving processes or the skills possessed. Here employers should pay attention to their employees' ideas and appreciate or reward their creativity;



- sharing and disseminating knowledge — it is a complex aspect. On the one hand, the knowledge possessed by organization or employee constitutes a competitive advantage, is unique and people do not want to share it. On the other hand, employees should have access to some information so as to bring some benefits for organization if combined with their skills. It should be taken into consideration what knowledge particular units in organization need, what it should concern, influence or change and how it will be disseminated;
- knowledge exploitation — knowledge should be used effectively, thus, creating an added value. One has to overcome obstacles or barriers connected with routine, fear of the unknown or losing a job;
- knowledge preservation — if knowledge is captured and exploited, it must be also preserved. The appropriate data is selected and saved. It is also updated once in a while. Access to such information contributes to vast development within organization, the mistakes are not repeated and intellectual capital is fully taken advantage of. Through defining goals, knowledge management is given a proper direction which allows to make some assumptions, plan a strategy and define the specific tasks. Such an approach affects shaping corporate culture in a knowledge-based organization. All plans and strategies refer to the resources that a given organization possesses.

10. Conclusion

Only organizations being able to achieve high rates of entrepreneurship and economic growth can manage knowledge well and skilfully. They can handle knowledge management thanks to flexible adjustment to the surroundings, innovativeness and productivity. But it requires a new way of thinking about company management. Excessive concentration on details at the expense of the holistic approach is absolutely unacceptable. Responsiveness to changes, stimulating and revealing organization's strength, participation of all employees in discussions or debates on business operation and creating the business vision or strategy vastly minimize the number of mistakes, contribute to the appearance of innovative solutions, trigger people's creativity and identify them with company's goals.

Knowledge management is a hard fact. More and more organizations resort to this model. New IT solutions and better-qualified staff make organizations be able to capture not only explicit knowledge, but also make use of tacit knowledge. The formerly acquired knowledge resources constitute a well-established foundation to create new doctrines and theories. In professional literature, the four concepts described above are mentioned as the most immanent models of knowledge management. They form the basis and foundation for creating further theoretical assumptions. The prerequisite for the above-described models and their impact on the organization's effectiveness is properly shaped corporate culture. It has to be open to environment, innovative and pragmatic.

Friendly atmosphere fostering cooperation and a moderate level of competitiveness between the employed are essential as well. Managers of business entities should be aware of benefits from implementation of a given knowledge management model in their enterprise. They have to initiate, propagate and propel all changes. A crucial factor for implementing this kind of management is also staff and rewarding system applied in organization. An employee has to be persuaded that it is worth sharing knowledge. It is worth highlighting that possessing appropriate knowledge resources, one can break all barriers and gain access to new possibilities contributing to effectiveness growth on a micro and macro level. In contemporary approach to organization's effectiveness assessment, different areas of business operation and correlating all actions should be taken into account. Organization's effectiveness assessment is mostly connected with company's strategy and its proper implementation. Individualization of business entities' actions lies in choosing the proper knowledge management model which should fit into their long-term development strategy.

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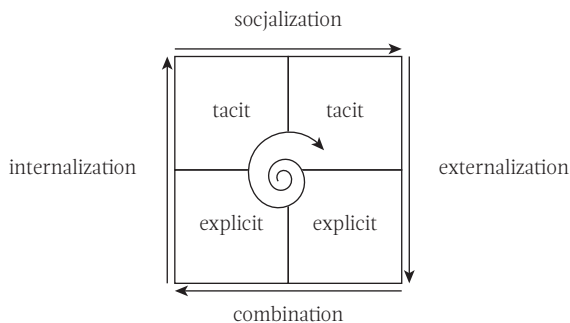
Appendix

Table 1.
Comparison of organization’s effectiveness measures by selected authors

J.L. Price, D. Lawless	M. Holstein-Beck	M. Bielski	R.S. Kaplan, D.P. Norton	M. Hammer
<ul style="list-style-type: none"> – productivity; – morale; – conformism; – flexibility; – institutionalism; – stability. 	<ul style="list-style-type: none"> – efficiency; – dexterity/skill; – competence; – functionality; – morality; – communicative-ness; – ecological balance. 	<ul style="list-style-type: none"> dimensions: – material; – economical; – systemic; – ‘political’ (relationships/rapport with environment); – political (political effectiveness); – behavioural. 	<ul style="list-style-type: none"> perspectives: – financial; – customer’s perspective; – internal processes; – development. 	<ul style="list-style-type: none"> factors concerning process completion: – project; – contractors; – owner; – infrastructure; – measures; organizational abilities: – leadership; – corporate culture; – competence; – supervision.

Source: Hammer (2007, pp. 112–121) and Ziębicki (2007, pp. 332–336).

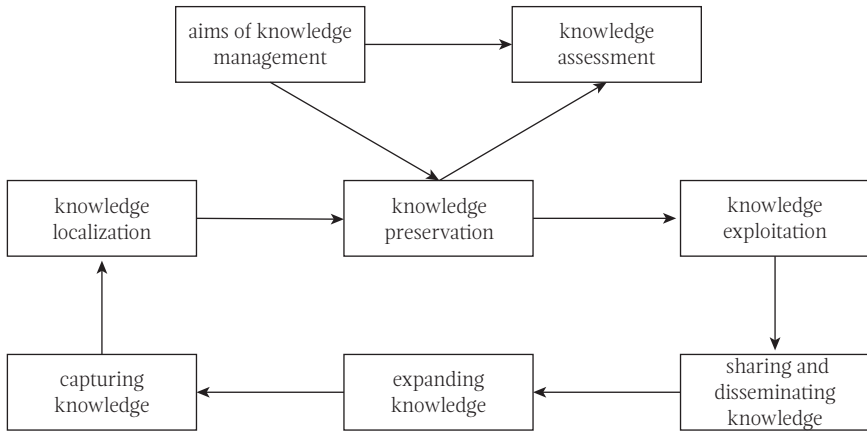
Scheme 1.
Knowledge spiral



Source: Frost (2012).



Scheme 2.
Six knowledge management processes feedback



Source: Probst et al. (2002, p. 46).

