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Functionality and Feasibility of Knowledge Management in Enterprises

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Abstract

The announcement issue is knowledge management from the viewpoint of structural and systemic theory. According to the determination of main concepts such as elements, information, knowledge, an attempt to apply the above in enterprises and organizations is made via the current announcement. These concepts are considered strategic assets for companies and organizations. It is significant to provide effective management and efficacy. This knowledge management is based on the principle that knowledge segmentation leads to its increase. Knowledge management is one of the greatest challenges of modern times.

Knowledge, and in particular the surfeit of knowledge, creates a vast and complex situation which requires to be balanced in order for companies and organizations to be viable and successful. Through this structural-systemic analysis, theoretician Baecker describes knowledge management via complexity. Knowledge complexity is not merely an issue that needs to be resolved, but it is the solution to the actual problem. This means that we understand enterprises as learning and communicative social organizations which follow a certain model of knowledge management which is in constant motion and change.

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1. Introduction

The research of this article focuses on the systems theory of Luhmann and his successors, which brings new insights into the current debate on knowledge management. According to the systems theory, the company is a learning self-creating system. The concepts knowledge, knowledge management, company structure and learning

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are explained by a parallel: which is the meaning of these concepts according to other scientific theories of organizational learning [1] and whether they have affected the systems theory:


- **Culturell Perspective**, where the context of the business (the beliefs of its members) are transferred to the company and represent the culture of the company, as it was formulated in their research C. Argyris and D. A. Schön in 1978, E. H. Schein in 1985 and P. M. Senge in 1990.


2. **The meaning of knowledge within a company**

2.1. **Types of knowledge**

Knowledge management has been a central area of research for several years, because knowledge is the productive force of the 21st century. Consistent with the complexity and the fast pace of work and society, which pose new problems and challenges for businesses, the production form and object have changed. Today's society is based on information technology, generates data and information based on data quality (potential knowledge) and offers opportunities for storage and wide access to information. In relevant studies, such strategic issues have been approached with the use of computational methods [2-16]. The form of production is based on knowledge, namely on unlimited forms of perception and application of knowledge. The difference between an industrial society and a knowledge society is following:

| Industrial society = traditional production of *necessary* material |
| Knowledge society = technological production of knowledge and *smart* knowledge services |
In order to understand the concept of knowledge, we should refer to the distinction between Data and Information, which is particularly important for many scholars. Data is the primary source of knowledge. They are symbols, observation tools (numbers, pictures, text) that require interpretation (coding). Through interpretation, these symbols acquire the value of information. The interpretation factor is particularly important for a learning company, since it provides meaning to the information: The essence of organizational learning is a reduction of equivocally, not data gathering [17]. The networking of information for achieving a target is called knowledge and organizational skills. There are two types of knowledge: The “implicit” or “declarative” knowledge, which concerns the “knowing that” of the members of the company, namely their personal cognitive construction, and the “explicit” or “procedural” knowledge, which concerns the “knowing how”, namely knowledge in the form of files, which helps to the solution of the problems of the company and to information processing.

![Diagram of implicit and explicit knowledge](image)

**Fig. 1: Diagram of implicit and explicit knowledge**

The combination of implicit and explicit knowledge, and more specifically the process of implementing them, consists the knowledge base beyond the information is an additional source of knowledge (know more). At this point there is a separation in functional knowledge and in procedures knowledge:

<table>
<thead>
<tr>
<th>Functional knowledge</th>
<th>Procedures knowledge</th>
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<tbody>
<tr>
<td>Experience, knowledge and skills relevant of the targets of the company</td>
<td>Information on the course of the proceedings, participating individuals, roles, systems, applications and workflow data</td>
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</table>
2.2. Knowledge in systems theory

In systems theory, Knowledge refers to cognitions, which are highly intertwined with expectations, in particular with expectations that promote learning. The expectations, namely the visions of the company, are located at a basal level, where “data” and “elements” acquire the quality and value of information. It is worth noting that Luhmann does not separate knowledge from ignorance, but from information, namely from the unexpected transfer of ignorance into knowledge. This means following: Information implies the existence of a learning structure within the company, while information itself is one event that activates the learning structure. At the procedural level this information acquires (linking elements in a link) sometimes a cognitive and sometimes a normative character, depending on the expectations and decisions within the enterprise. Cognitions and Norms define the “Knowledge” of the company, aim to teach its members and define the learning structure within the company. Consequently, learning is a reflexive combination of Knowledge constants (norms) and Knowledge (cognitions) that vary. Willke defines the company knowledge as follows: The knowledge of an organization lies in systems of rules that define the processes of the organization. This knowledge consists of standing operating procedures, guidelines, routines, traditions, special data banks, codified production and design knowledge and features of the special culture of the organization [18].

![Diagram of learning process by Luhmann](image)

3. Definition of Knowledge management

Undoubtedly, knowledge management is a value lever for businesses. Knowledge is the central “strategic stock” [19], namely the knowledge available for the competitiveness of an enterprise. The proper management of knowledge is proof of the ability of innovation in relation to the ability to adapt to the ever-changing market demands. Consequently, the efficient management of this knowledge is important. In other words, knowledge
management must be functional for the company, namely for the business organization. Knowledge management consists of three stages and three procedures:

<table>
<thead>
<tr>
<th>Knowledge Creation</th>
<th>Knowledge Transfer</th>
<th>Knowledge Retention</th>
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<tbody>
<tr>
<td>Knowledge creation</td>
<td>Knowledge usage</td>
<td>Knowledge retention</td>
</tr>
<tr>
<td>Knowledge production</td>
<td>Knowledge application</td>
<td>Knowledge identification</td>
</tr>
<tr>
<td>Knowledge development</td>
<td>Knowledge sale</td>
<td>Knowledge storage</td>
</tr>
<tr>
<td>Knowledge management of data/information in correlation with the owners of this knowledge</td>
<td>Knowledge acquisition</td>
<td>Knowledge availability</td>
</tr>
<tr>
<td>Knowledge externalization</td>
<td>Knowledge management of the owners of this knowledge</td>
<td></td>
</tr>
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</table>

3.1.1. Knowledge Creation

Knowledge Creation is the learning level of the company and is based on the process of knowledge externalization. Externalization is a progress of articulating tacit knowledge into explicit concepts [20]. This level, which is the basis of knowledge management, consists of the analysis and design of visions. Knowledge externalization in combination with Mental Models and technological skills, as well as with consumer needs, can lead to conceptual Knowledge in the form of a new product concept. Knowledge externalization of is a prerequisite for the creation of knowledge, which involves the creation of a specialized plan that describes activities, people and information.

3.1.2. Knowledge Transfer

Knowledge Transfer is the level of implementation and use of processes. Technological support leads to the improvement and establishment of knowledge. Knowledge transfer requires integration of the knowledge into the existing knowledge base of the company through Tools such as Meetings, Networks, Project groups, Documentations, Presentations, Expert systems etc. Knowledge integration into the existing knowledge base of the organization means following: identification, acquisition, development, division, use, and retention of knowledge.
3.1.3. Knowledge Retention

Knowledge Retention is the development level of the company. At this level takes place the identification and implementation of the knowledge management processes for the modelization, optimization and automation, so that new knowledge can be systematically incorporated into existing knowledge. The organization uses Databases, Expert systems, Neuronal networks for the retention of knowledge. Important are also the cultural storage systems, such as Routines, Archetypes and personal relationships, which form the organizational memory, term used by Hedberg [21] as an ability for knowledge retention for future use. Retention consists of experience, knowledge and programs that form the structure of the company, the organization of which co-defines the business success. A drive of this structure is networking the Internet. Internet allows for a multimedial networking knowledge, a "network culture" [22], which opens up new potentials, new values and innovations. Thus the network becomes the organizational form of the companies.

3.2. Knowledge management in systems theory

In systems theory, core of knowledge management is communication, which is always considered a decision, because it is subject to the pressure of expectation. Communication disposes the structures of the organization, according to which the creation, processing and storage of knowledge are defined. Structures are standards that guide the creation, edition and storage of knowledge. In other words, they affect which item (capability from the environment of the company, such as the market) will have the value of information and how knowledge could be saved and reused. These structures determine what changes occur in the knowledge base, how anything new is acquired and what is the appropriate management of anything new. The creation of new knowledge in the systems theory involves learning, which is considered learning only when it brings changes to the knowledge base. The second characteristic of the transfer of knowledge is an impossible process for systemic theorists. That's why they refer to knowledge sharing in the context of communication within the company. Knowledge retention (storage and repeated use) is a complex control process, namely a result of critical selections and not a static situation in file format, where anyone can search for something. Stored knowledge comprises the organizational memory of the company, performed as communication and reproduced any time. The storage options are the forms that company uses to remember (verification of knowledge) and forget (non-reuse of knowledge). The memory of the company is in short content and content format at the same time [18]. Consequently, the classical distinction between Knowledge Creation, Knowledge Transfer and Knowledge Retention as successive stages is defined by the Systems Theory as follows: Knowledge creation is a process of self-control, which derives from the critical thinking of the system of the organization. Knowledge transfer is replaced by communication. The information that is verified, namely confirmed at communication level, is knowledge. For this purpose, the organization does not simply develop storage systems, but the memory of the organization. This memory of the organization is a dynamic and web circle of structures, options and procedures. Memory is identical to knowledge management.
4. Definition of Knowledge management

A learning organization is an organized system, which promotes and integrates the knowledge of its members and their ability to solve problems – an ability that according to Fengler [23] is the Know-How with regard to the combination, the construction, the extension and use of existing knowledge - while the company develops. Learning organizations are a special form of organization where enhancing learning is a strategy to increase intellectual capital [24]. The process of development is a result of learning. The principles of a learning organization are: Personal Mastery (processing of personal vision), Mental Models (perception and interpretation), a common vision, collective learning, thinking and systemic thinking (perception of the company as a whole) [18]. Knowledge has cognitive and normative functions, is integrated into every facet of the organization and comprises an object of communication, dialoguing and collective thinking.

Under the perspective of the systems theory, a company is a complex social formation that operates with its own specific structures and processes, which determine the management and storage of knowledge aiming at maintaining the status quo, the identity and the power of the company. Through knowledge management, the company is not simply a social fact but a constructionist paradigm, according to which the company is a social group designed and interpreted by its members, according to a leading. Leading is a reflexive form of the development of the organization. Is the orientation of present decisions looking to future situations [25]. The company is a system, the reality of which is planned by means of perception, observation and intersubjectivity, in the light of what is beneficial and what is not for the company itself. The importance of knowledge management is crucial to the dialectic between individuals and company, between the personal identity and the structure of the company. According to Minssen, during the organization of knowledge in the communicational economy takes place a transition from control problems to problems of cooperation [26]. It is a loss of control regarding the workplace and its social and time-class structures. The important factor in a company is cooperation and communication and thus collective work.

5. The organization of a learning company

According to Luhmann, who considers that the cognitive effect is a design [27], we could say that the company is a result of knowledge management, which results from the observation of the interaction of acts and communication, which according to Luhmann is decisive for the structure of the company due to the fact that the expectations (relationships) and decisions (elements) of the company are based on this interaction. Luhmann characteristically defines that the precondition and fact of an enterprise's organization is the unknown, namely the unknown evolution. The success lies in the management of this unknown [28]. Companies are guided by rules among their members and by roles that define expected behaviors. Expectations and decisions play an important role in creating the structure of the company. These decisions are responses to the expectations and the pressure they exert. More specifically, decisions exist only when the meaning of an act is a reaction to an expectation. In short, decisions and expectations compose according to Luhmann the structure of the company, which is a specific pattern that determines which information and which knowledge requires processing and storage.

Based on this theoretical approach, we will see the importance of a learning organization in accordance with the systems theory of Luhmann. According to Luhmann, a learning organization is characterized by active
preparation according to the knowledge of the organization and its challenges. Every organization has its own structure, which is not limited to formal rules, programs and norms that apply to businesses, but is also based on selections (comparison of existing knowledge with a new feature), goals (the difference between real and achievable) and strategies (emergent attributes). Luhmann separates expectations into knowledge, which changes the structures of the company and is consistent with changes in the performance of its members. Any change in the cognitive maps is inherent with the adaptation to new experiences, with changes of the experience maps: “Organizations […] learn from experience. They act, observe, and draw implications for future action” [29]. On the other hand, the organization of a company consists of norms and context factors, which ensures stable structures, thus the typical class of the company, which affects the planning of the company and characterizes the communicative value within the company. Consequently, a Learning organization is based on communication, through which knowledge is born in an interactive manner. This knowledge is not the access to certified experience but a momentary control of knowledge consensus. The quality of learning abilities, as well as the learning strategies comprise new criteria for the success of business, namely the proper selection and the proper elaboration of the environment data, which Luhmann interprets as stimuli and confusion, which turn into information. This means that the process of knowledge depends on the communication structure of the company. Communication leads to growing momentum, wellness and relaying information flows.

6. Conclusion

Consequently, knowledge is not a stable stock, but a kind of a complicated proof operation, which leads to Organizations-Clusters [30], where the potency of the company is the correlation of information and the intelligence in the creation of standards. It is a self-control – a necessary condition for any system – of the company, stemming from critical thinking through communication. Wilke, referring to companies as Learning organizations, talks about negotiation systems [30]. This reviewing reflection is in conclusion the system reflection of the company, which determines learning capability and ability: "System thinking is a conceptual framework, a body of knowledge and tools that has been developed over the past fifty years, to make the full patterns cleaver, and help us see how to change them effectively." [31]. At this point, as well as due to the gravity the systemic theory gives in communication, comes in the human factor, thanks to which we can speak of a learning company.

Learning, as well as the adaptation and management of an enterprise focused to knowledge, which can adapt to the environment and preserve its autonomy, is the request of the systemic theoretical framework. In today's network era, the company is now in this sense a non-bureaucratic organization, is decentralized, promotes teamwork and knowledge sharing, replaces hierarchies and commitment of space with regard to knowledge.
management According to Willke, if the management of the company has no place, it is characterized by the irrelevance of space and defines nowhere as anywhere [25].

References