

ANALYZE OF INTERRELATION BETWEEN KNOWLEDGE MANAGEMENT AND ORGANIZATIONAL STRUCTURE OF ORGANIZATION

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Abstract: The aim of the article is to discuss interrelation between knowledge management and organizational structure of organization. Organizational structure is a backbone of the organization. Type of organizational structure used has strong impact on everyday life of organization and influences all its activities, including knowledge management. From the point of view of knowledge management, three basic groups of organizational structures can be identified in organizations; top down structures, bottom up structures and combined structures. The article defines advantages and disadvantages of these groups of organizational structures and explains how they influence knowledge management activities in the organization. Combined organizational structure represents the best choice for those who want to use full potential of knowledge in their organization. The article presents results of the research made by Department of Management, University of Economics Prague in organizations in the Czech Republic. The research started in 2004. Till today, 131 organizations have been interviewed. The results of research show growth in number of combined organizational structures, especially in highly competitive industries.

Key Words: knowledge, knowledge management, organizational structure

1. Introduction

Organizing is an important managerial function. It enables to connect separate elements of the organization to one whole. Organizational structure, the result of organizing, represents a backbone of the organization; it defines roles, rights and responsibilities of individual organizational elements - departments, people, and technology. Character of organizational structure predeterminates behavior of the organization and its elements, the way how it responds to both internal and external incentives. Different types of organizational structure have different advantages and disadvantages. Inconvenient organizational structure inhibits the organization, convenient supports its activities.

We live in knowledge society these days. Knowledge society is a society where knowledge is a major creative force and all spheres of human life depend on ability of people to create, distribute and share knowledge. Organizations that want to succeed in their markets are forced to search for ways how to exploit their knowledge as much as possible. Many knowledge management activities are implemented but not all of them are successful. Character of organizational structure is one of factors which influence success or failure of knowledge management activities.

From the point of view of knowledge management, three basic groups of organizational structures can be identified in organizations; top down structures, bottom up structures and combined structures. Top down structures are hierarchical organizational structures with clearly defined competencies and responsibilities. Knowledge and right to decide depend on a hierarchical ladder; the higher is an employee on a hierarchical ladder, the more decision making rights he has and the more knowledge he is supposed to own. Bottom up organizational structures are flat, with less organizational levels. Employees share their tasks, they often work in teams. Knowledge and decision making is diffused to specialists (knowledge workers) and those who are close to a customer. Combined organizational structure is a hybrid structure that puts together best of first two types of structures and connects it with knowledge base of the organization.

The article defines advantages and disadvantages of three groups of organizational structures and explains how they influence knowledge management activities in the organization. The

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interrelation between the type of organizational structure and knowledge management is demonstrated on results of the research made by Department of Management, University of Economics Prague in organizations in the Czech Republic. The research started in 2004. Till now, 131 organizations have been interviewed.

2. The research

The research on knowledge management in organizations in the Czech Republic started in 2004 and goes on to these days. The intention of the research is to monitor development of knowledge management activities in our country. Organizations are chosen randomly, they come from different industries, including the public administration and governmental area. A size of organizations also differs; we have interviewed both big multinational organizations and SME's. The smallest organization had only 7 employees. The only prerequisite for organization to be covered by the research is location of its premises in the Czech Republic.

The research is based on a questionnaire. The questionnaire mostly consists of closed questions with option of commentary; some opened questions are supplied, too.

Organizations are chosen by students of the course Knowledge Management who are also responsible for the interview based on the questionnaire. Students are asked to choose organization to which they have good access. They usually choose the company where they or their relatives or friends work. The person they interview must work for the organization at least (if possible) for two years or know the organization well. The position, job title and job description of the person are not important.

When the questionnaire is completed and answers of respondents are analyzed students defend them during the final course examination. The examiner checks the quality of analysis, and accepts it or rejects. Questionnaires which quality is dubious are immediately rejected.

The questionnaire is divided to following sections.

Section 1 covers questions on character of the interviewed organization – name of the company, description of its major business, annual revenues, number of employees, and educational profile of employees. We also ask organizations if they are owned by foreigner capital and if they export to abroad markets.

Section 2 is focused on questions that analyze profile of human resources of organization in more detail; like those on structure of employees by age and sex. Major part of section 2 consists of questions on important structural prerequisites of knowledge management; knowledge strategy, type of organizational structure, cooperation, relation of the organization to knowledge, and trust.

Section 3 asks questions on ICT. Its role is to find out which means the organization uses to support work with explicit knowledge.

Section 4 is focused on style of work in the organization and includes questions on type of meetings, job descriptions, communication and communication channels. This section helps us to found out whether the organization has environment for sharing of tacit knowledge or no.

Section 5 asks questions on traditional apprenticeship programs. Section 6 enquires how organizations train new employees. This section helps us to find out about work knowledge intensity in the organization. We ask not only questions how the organization train newcomers but also how the newcomers' knowledge fits organizational needs and requirements.

Next three sections are dedicated to tools of work with tacit knowledge. Section 6 asks questions on coaching and mentoring. We are interested especially in average time of coaching activities, style of relationship between a coach and a coached, how the organization rewards coaching activities.

Section 7 analyses communities of practice. We are interested in both formal and informal communities, physical and virtual ones. Organizations are also asked about typical dysfunctions communities of practice tend to suffer.

Section 8 is the last section and it gives questions on storytelling. Existence of negative and positive stories in the organization is checked. We also ask if stories are used in the company purposefully or no and where they are usually told.

The questionnaire provides us with detailed information about work with knowledge and knowledge management in interviewed organizations. It helps to identify best practices and mistakes and problems and gives us a picture about quality and functionality of knowledge market in the organization. Some questions are interlinked; answers to them should be compatible. These questions are important as they validate the questionnaire. The reason of incompatibility of answers to such questions is always strictly enquired and the student is asked to explain the reason in rich details. Incompatibility is mostly caused by the attempt of a student to cheat the assignment. In that case the questionnaire is rejected.

This article covers only part of the research, the one that is dedicated to basic prerequisites of functional knowledge management – cooperation between employees, knowledge sharing, trust and application of self management (3S). These factors are analyzed in relation to different types of organizational structures because we believe that it is the organizational structure that predetermines what they look like.

3. Theoretical background

Knowledge management literature offers various definitions and concepts of knowledge. Knowing well business reality in our country and having in mind the fact that final users of our work are our managers we decided to use simple knowledge concept. The definition of knowledge we use is build on terms data and information.

We understand data as everything we can monitor by our senses, everything we can feel, smell, taste, and hear. It is a set of discrete, objective facts about events. Data can be structured and stored in some type of technology. Data is absolutely objective; it exists even when we do not know about it (Veber, 2000, 226).

Information is data that the user finds important during the process of their interpretation. The involvement of the user makes information much less objective than data. Information depends on the user and his ability to identify it and on context he gives it (Veber, 2000, 226).

Knowledge is a changing system with interactions among experience, skills, facts, relations, values, thinking processes and meanings (Veber, 2000, 228). Knowledge is always related to human action and emotion. Knowledge is highly subjective.

This simple hierarchy enables us to explain difference of data, information and knowledge and differences in their management to our managers.

As for knowledge, we proceed similarly, and use the simplest concept. We divide knowledge only to two dimensions, explicit and tacit one.

We explain explicit dimension of knowledge as knowledge which can be expressed in formal and systematic language and can be shared in the form of data, scientific formulae, specifications, manuals, etc. It can be processed, transmitted and stored. We support idea that

explicit knowledge is actually information and can be transferred to data. E.g. explicit knowledge can be formalized and stored and distributed as data (Mládková, 2005). Data is usually distributed and stored in some ICT these days. It means that when working with explicit knowledge we often work and manage work with a technology.

Tacit dimension of knowledge is perceived as highly personal and hard to discover and formalize. Explicit knowledge and intuition, mental models, experience, crafts, skills, etc. create it. It is deeply rooted in action, procedures, routines, commitment, ideas, value and emotions. It is always related to living being or to the group and is difficult to share and communicate (Mládková, 2005). We agree on Polanyi's statement that tacit knowledge is problematic to externalize because the process of externalization damage it (Polanyi, 1966, 6). Managing tacit knowledge means managing people.

Both dimensions of knowledge can be identified in any organizations. Explicit dimension is usually present in the form of data in some corporate ICT system; tacit dimension is in heads of employees (Mládková, 2005). Both dimensions interact in the process of knowledge conversion (Nonaka, Takeuchi, 1995).

We are well aware of the fact that knowledge cannot be simply split to two parts and that it is difficult to separate its explicit dimension from the tacit one and we always highlight this fact when explaining what knowledge is to students and managers. From our point of view the concept of two dimensions has important practical advantage – it helps us to explain to our students and managers that tacit knowledge cannot be managed the same way as the explicit one. This mistake is quite common in our traditionally hierarchical environment.

4. Knowledge management and organizational structures

Knowledge management is a discipline of management prior task of which is to optimize the work with knowledge in organization. It can be successful only when organization knows its knowledge needs and can address both dimensions in relation to its own situation. Even though some best practices can be transferred among organizations, concrete external and especially internal situation of organization should be taken into account and knowledge management activities should be adjusted to it.

One of crucial factors that influence success of organization with any knowledge management activities is its type of organizational structure. We adopt classification of organizational structures defined by Nonaka and Takeuchi (Nonaka, Takeuchi, 1995) for our research and work. Nonaka and Takeuchi write about three types of structures: top down structures, bottom up structures and combined structures (Nonaka and Takeuchi call combined structures middle up down model). As many organizations in the Czech Republic try to adjust their organizational structures to rapidly changing environment we decided to extend the classification and we incorporated two transitional types of organizational structures; transition from top down to bottom up structures and transition from bottom up to combined structure.

Next chapters give basic description of strengths and weaknesses of three basic groups of organizational structures defined by Nonaka and Takeuchi (Nonaka, Takeuchi, 1995) from the point of view of knowledge management.

4.1. Top down organizational structure and knowledge management

Top down organizational structures are hierarchical organizational structures based on the principle of the division of labor. The power and decision making competencies are concentrated in the hands of top managers. They create basic concepts, ideas and objectives

and distribute them as tasks to subordinate levels of the organization. The role of the employee is limited. They fulfill their tasks that are controlled.

Even though top down organizational structures may be efficient in implementing, exploiting, and accumulating new knowledge, they limit knowledge management activities. Knowledge channels are opened only in the top down direction and only simple explicit knowledge can pass through them. Subordinate levels do not communicate on the horizontal level and the co-operation of individual hierarchical levels is also limited. A bottom up flow of knowledge is problematic. Hierarchical borders damage the knowledge. The knowledge loses its context and different departments explain it differently. The flow of tacit knowledge is restricted even more. Tacit knowledge exists only in the heads of individuals, and is owned and shared in specialized parts of departments (Mládková, 2003, 92-94).

Top down organizational structures support knowledge market dysfunctions and pathologies. Managers do not know where knowledge is localized, whether it is or it is not in their organization. The organization often misses maps of knowledge (explicit knowledge including), warranty of knowledge quality and rules for knowledge evaluation. Knowledge is asymmetrically spread around the organization and employees who need it do not have access to it. In top down structures people tend to compete with their colleagues. Knowledge becomes power which inhibits reciprocity and altruism. People naturally share their knowledge only with people who they know and trust. Knowledge sharing with strangers is too risky.

Knowledge market dysfunctions lead to knowledge market pathologies. Monopolies, artificial knowledge shortage and knowledge barriers are the most common of them (Davenport, Prusak, 1988). People who withhold knowledge which somebody else needs create knowledge monopoly. Monopoly enables exclusive control of knowledge in the organization and gives its owner power over other people. Monopoly is a form of artificial knowledge shortage. When the owner of knowledge is not at work knowledge is not available. Knowledge monopoly is a part of top down organizational structure philosophy. The higher an employee is in the hierarchy the more and more broad knowledge he has. Top down structure does not support sharing of this knowledge – a higher level employee uses his knowledge to create a task and pass it on the subordinate. Subordinates are not supposed to know the knowledge that led to creation of their task; they are supposed to fulfill the task. Knowledge owners who have knowledge monopoly tend to solve problems of other people but do not share their knowledge with them.

Another problem is brain drain. Organizations lose people who have important knowledge because they do not know that their employees have it.

People in organizations with top down structure often hesitate to accept and use knowledge developed by employees on lower hierarchical level than is theirs. It is called knowledge market barriers.

Classical hierarchical organizational structures are hostile to formal communities (problems with communication, finances, responsibility to more than one boss, differences in style of management in different departments). Informal communities tend to suffer with dysfunctions like ‘we against the whole company, we are the best, or community members overestimate the importance of the community.

4.2. Bottom up organizational structures and knowledge management

Bottom up structures are flexible, flat organizational structures. Their boom was initiated by the change of stable external environments to the chaotic, non-linear one in the 1970s. Bottom up organizational structures have less organizational levels, and allow companies to build direct relationships with their customers. In bottom up structures people work more independently. Decision making is related to the knowledge (Mládková, 2003, 92-94).

The bottom up model is based on autonomy and teamwork and strong horizontal relationships (for example around processes). Knowledge is localized in the middle or bottom level of the organizational structure. Top management has limited power to influence the work with it. Top managers give rules, set principles and co-ordinate their dissemination to the whole organization. Middle managers are responsible for a creation of proper working environment and work with people. One of their important roles is to build trust because people who do not trust each other do not share their knowledge.

Bottom up structures support creation and work with both dimensions of knowledge; they are beneficial especially for work with tacit knowledge that is naturally shared in teams and communities. Unfortunately barriers between departments limit across border sharing.

Bottom up organizational structures support creation of informal and formal communities, especially in departments or teams. Creation of communities across departments may be difficult due to barriers between individual departments.

When managers find out the way how eliminate barriers between departments and teams, bottom up structure may support development of healthy knowledge market. As this is not easy, many organizations with bottom up structures also suffer knowledge market dysfunctions and pathologies, mostly knowledge monopolies (knowledge is owned by department or team) and asymmetries. Bottom up structures do not provide environment for systemic knowledge recording and reuse in organization.

Bottom up structures have higher potential for knowledge management than top down structures but still they are not ideal.

4.3. Combined organizational structures and knowledge management

This group of organizational structures is the combination of top down and bottom up structures, e.g. of bureaucracy and task force. Bureaucracy is efficient in implementing, exploiting, and accumulating new knowledge. Task force organization offers flexibility, it is more adaptable and dynamic; people can participate more in decision making processes. Combined structures as a hybrid type of structure benefit from the advantages of the two mentioned structures and suppress their disadvantages.

In combined structures, knowledge of all employees is important and all employees should co-operate on both the vertical and horizontal levels. Combined structures allow creating and using the full potential of different relationships in the company and fully support its knowledge management activities (Mládková, 2003, 92-94).

Combined organizational structure consists of three layers. The vertical layer is responsible for the management of the company (both day-to-day and strategic) and can be hierarchical. It is the layer where normal, routine operations are carried out by formal, hierarchical bureaucratic organization.

The horizontal layer is responsible for creation of major values of the organization. It creates, distributes and uses knowledge (both tacit and explicit). The horizontal layer consists of project teams who use knowledge from the vertical layer.

The third layer, the knowledge layer, sometimes called the library, is responsible for archiving and recording knowledge. It includes all tacit and explicit knowledge of the organization - documents, filing systems, IT databases, etc. All employees of the organization are obliged to record their knowledge there. Both explicit and tacit knowledge is archived there.

When the team finishes its task, people record their new knowledge and skills in the knowledge layer and wait for the opportunity to start another project. They can join the vertical layer in some organizations. Communication among all three layers has to be managed and coordinated (Mladkova, 2003).

The philosophy of combined structures stresses that all employees are important and all employees should co-operate on both the vertical and horizontal levels. Combined structure allows creating and using the full potential of different relationships in the company which result in functional, fast and healthy knowledge market.

Combined type of organizational structure offers important roles to middle managers who are responsible for communication and knowledge management in the company. Combined structure is the ideal organizational structure for innovative and a knowledge driven companies (Mládková, 2003, 92-94).

5. Results of the research

As mentioned above, 131 organizations have been interviewed up till now. Being aware of the fact that change of the organizational structure is a difficult process that cannot be done in one moment, we added two transitional types of organizational structures to our research; transition from top down to bottom up structure and transition from bottom up to combined structure. We do not analyze how far organizations get in the transformation but it is generally expected that they are at least in the middle of the process.

Out of 131 organizations, 44% reported top down structure, 12% transition from top down to bottom up structure, 15% had bottom up structure, 5% transition from bottom up to combined structure and 24% organizations reported combined organizational structure. High number of organizations with top down structure can be explained as a cultural factor. Top down structures are traditional structures in our country and many organizations naturally choose them without taking into account their advantages and disadvantages.

Table 1: Types of organizational structures

Type of structure	Nb. of organizations	
Top down	58	44%
Transition from top down to bottom up structures	16	12%
Bottom up	20	15%
Transition from bottom up to combined structure	6	5%
Combined structure	31	24%
Total	131	100%

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5.1. Interrelation between type of organizational structure and cooperation

When implementing knowledge management activities, organizations hope that they improve knowledge sharing. Knowledge sharing depends on many factors; one of them is cooperation and interest in other people. Employees who are interested only in their own tasks do not cooperate and they do not share their knowledge. Cooperation and interest in other people are important not only for knowledge sharing, they are also important for health of knowledge market. Table 2. shows the result of our research. People are interested only in their affairs and do not voluntarily cooperate with their colleagues in 52% of organization with top down structure (out of 58), which indicates that top down structure supports individualism and

separation. When looking at other types of organizational structures, situation is dramatically different; 75% of organizations with structures in transition to bottom up structure reported that their employees cooperate, the same reported 80% of organizations with bottom up structure and 87% of organizations with combined structure. Organizations that were in transition from bottom up to combined structure were only 6 and all of them reported that their employees cooperate.

Table 2: Interrelation between organizational structure and cooperation

Type of structure	Number of Organizations	Cooperation			
		Yes		No	
Top down	58	28	48%	30	52%
Transition from top down to bottom up structures	16	12	75%	4	25%
Bottom up	20	16	80%	4	20%
Transition from bottom up to combined structure	6	6	100%	0	0%
Combined structure	31	27	87%	3	10%

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5.2 Interrelation between type of organizational structure and knowledge sharing

Table 3 shows results of answers to questions concerning knowledge sharing and knowledge ownership. First we were interested if people in different organizational structures share their knowledge. Answers to this question showed that the more cooperative is the structure the more intense is knowledge sharing. Knowledge sharing reported 55% of top down organizations, 56% organization in transition to bottom up structure, 75% of bottom up organizations, 100% of organizations in transition to combined structure and 87% of organizations with combined structure.

Question on knowledge ownership offers two options – knowledge is a property of individual, and knowledge is a property of department. We know that positive answer to these questions is not in conflict with answer to question on sharing. People in organization may share knowledge and still perceive it as a personal ownership. Some organizations answered that their employees share knowledge and see it as personal ownership. But we had an idea that people in structures based on intense knowledge sharing, e.g. in bottom up and combined structures will understand knowledge ownership differently. This idea was proved. 31% of top down organizations and 31% of organizations in transition to bottom up structure reported that they understand knowledge as a personal property of individual; the same reported only 15% of bottom up organizations, 17% of organizations in transition to combined structure and 3% of combined structure organizations.

Table 3: Type of organizational structure and knowledge sharing

Type of structure	Employees share knowledge		Knowledge is property of individual		Knowledge is property of dep.		Number of Organizations
	Count	Percentage	Count	Percentage	Count	Percentage	
Top down	32	55%	18	31%	9	16%	58
Transition from top down to bottom up structures	9	56%	5	31%	5	31%	16
Bottom up	15	75%	3	15%	4	20%	20
Transition from bottom up to combined structure	6	100%	1	17%	1	17%	6
Combined structure	27	87%	1	3%	3	10%	31

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We were also curious if bottom up structures really represent problem for across department knowledge sharing. Only 16% of top down organizations reported that knowledge is property of department, but the same was reported by 31% organization in transition to bottom up structure, 20% of bottom up organizations, 17% organizations in transition to combined structures and only by 10% of combined structure organizations. E.g. organizations structures that have some portion of bottom up structure tend to understand departments as owners of knowledge. Top down structure and combined structure organization understand knowledge ownership differently.

5.3. Type of organizational structure and trust

Trust is another important factor that influences work with knowledge and knowledge sharing. People do not share their knowledge with people who they do not trust. We understand trust as defined by Fukuyama and Robinson. Fukuyama thinks that trust is the expectation of regular, honest, and cooperative behavior based on commonly shared norms and values (Fukuyama, 1995). Robinson defines trust as “one’s expectations, assumptions, or beliefs about the likelihood that another’s future actions will be beneficial, favorable, or at least no detrimental to one’s interests” (Robinson, 1996, 574-579).

Trust can be classified to certain groups. Deterrence trust is derived through the presence of sanctions for opportunistic behaviour (Rousseau et al, 1998). Knowledge based trust is based on knowing other individual and being able to predict his behaviour (Shapiro et al, 1992). Identification based trust is derived through empathy and sharing of common values (Shapiro, 1992). Relational trust is derived over time through information of trustee within the frame of the relationship (Rousseau et al, 1998, 399-404). Calculus based trust is calculated on the basis of deterrents and intentions and competence (Rousseau et al, 1998, 399-404). Economic factors based trust is derived from a rational decision based on costs and benefits (Kim, Prabhakar, 2000, 537-543). Institutional trust is a feeling of confidence and security of institution (Ford, 2003). Personality based trust is trust based on personal and professional character of individual. (Mládková, 2010, 4-6).

We asked organizations which types are applicable for them. In our opinion knowledge, identification, relational and personality types of trust support knowledge sharing. Deterrence trust inhibits especially tacit knowledge sharing because it creates fear, in case of calculus and economic trust, knowledge is a power and is not shared. Institutional trust does not influence internal knowledge sharing in organizations; it was involved due to our curiosity.

Table 4. gives an overview of types of trust our respondents mentioned as most applicable for them, e.g. trust in their organization is mostly based on that type. Fifteen organizations (25%) from total did not answer this question or the answer was not clear. All percentages are calculated from 131 organizations.

In top down structures three mostly mentioned types of trust are knowledge (29%), relational (21%), deterrence (12%). In transition to bottom up structure it is knowledge (38%), relational (18%) and personality (6%), no other type was reported. In bottom up structures, it is knowledge (30%), relational (20%), deterrence, identification and economic factors trust (all 5%). In transition to combined structure it is knowledge (33%), identification (33%), relational trust (17%), no other type was reported. In combined structure it is knowledge (42%), personality (16%), relational (10%) trust.

Trust based on knowledge is the mostly reported type, 34% of organizations of all structures reported it. Second mostly reported type is trust based on relationships 18%. These results show that people tend to trust people who are known to have certain knowledge and people with whom they have good relationship. Except of one organization with bottom up structure,

trust based on deterrence was mentioned only by organizations with top down structure (12%). This result is logic. Top down organizational structure based on hierarchy and sub ordinance supports this type of trust.

Table 4: Type of organizational structure and trust

Type of trust/Type of structure	Top down structure		Transition from top down to bottom up structure		Bottom up structure		Transition from bottom up to combined structure		Combined structure		Suma	
Deterrence	7	12%	0	0%	1	5%	0	0%	0	0%	8	6%
Knowledge	17	29%	6	38%	6	30%	2	33%	13	42%	44	34%
Identification	1	2%	0	0%	1	5%	2	33%	2	6%	6	5%
Relational	12	21%	3	18%	4	20%	1	17%	3	10%	23	18%
Calculus	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Econ. factors	1	2%	0	0%	1	5%	0	0%	1	3%	3	2%
Institutional	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Personality	5	9%	1	6%	0	0%	0	0%	5	16%	11	8%
No answer	15	25%	6	38%	7	35%	1	17%	7	23%	36	27%
Nb. of organizations	58		16		20		6		31		131	

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5.4. Type of organizational structure and 3S

Theory of organizing says that employees in less hierarchical types of organizational structures have much more decision making rights than those in top down structures. They are supposed to use their knowledge, work and decide independently. Independent work and decision making puts new requirements on employees who take over part of work historically executed by their managers. They must self manage, self organize and self control (3S). We wanted to find out if and how this is applicable to types of organizational structures we chose.

We asked if employees work in accordance with 3S or no. Only 21% of top down structures reported that their employees work in accordance with 3S. Other types of organizational structures use 3S more, organizations in transition to bottom up structure reported work in accordance with 3S in 69%, bottom up structures in 80%, organizations in transition to combined structures in 100% and combined structures in 65%. The score reported by combined organizational structures is quite low which surprised us. We still think that organizations with combined structure whose employees do not work independently may face problems in efficiency of decision making and flexibility.

Table 5: Type of organizational structure and 3S

Type of structure	Number of Organizations	No answer	3S			
			Yes		No	
Top down	58	1	12	21%	45	78%
Transition from top down to bottom up structures	16	0	11	69%	5	31%
Bottom up	20	2	16	80%	2	10%
Transition from bottom up to combined structure	6	0	6	100%	0	0%
Combined structure	31	2	20	65%	9	29%

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Conclusions

Organizational structure is like a backbone; it determines what the organization can or cannot do. Organizational structure is an underlying structure of the organizational system that defines rules and principles of everything, starting with distribution of rights and duties, communication, style of work and management, trust. Results of our research confirm that type of organizational structure influences basic prerequisites of successful knowledge management.

Knowledge management activities can be successful only when organization manages both dimensions of knowledge and manages them in line with its knowledge requirements and internal and external environment. Knowledge sharing is an important factor of knowledge management. Knowledge management activities and programs miss sense if employees do not cooperate because in that case they do not share their knowledge. Cooperation and knowledge sharing depend on trust. People do not cooperate and share knowledge with people who they do not trust. Different types of organizational structures support or limit these important factors differently.

Organizational structures can be divided to three basic types; top down structures, bottom up structures, and combined structures (Nonaka, Takeuchi, 1995). Top down structures are hierarchical structures based on division of labor. Power, knowledge and authority are linked to level on corporate hierarchical ladder. Top down structures do not support creation of healthy knowledge market, e.g. they do not support knowledge management. Bottom up structures are flat structures with high potential for knowledge sharing in separated departments and teams. Still they face problems in across boundaries sharing which often hits barriers of knowledge market pathologies and dysfunctions. Combined organizational structures are hybrid structures built on three layers; business layer, project layer and knowledge layer. They offer best environment for implementation of systemic knowledge management.

Our research in 131 organizations in the Czech Republic proves some of strengths and weaknesses of chosen groups of organizational structures and shows that internal environment created by individual groups of organizational structures remarkably differs. 52% of top down organizations reported that their employees do not cooperate, 45% that their employees do not share knowledge and 31% that knowledge is perceived as individual property. Top down structures also had highest score of deterrence trust, 12%. They do not support independent decision making and management, 78% reported that their employees do not use 3S. E.g. this type of structure does not provide environment for knowledge sharing, and independent decision making.

In 75% of bottom up organizations employees share knowledge, in 80% they cooperate and the most important trust is the one based on knowledge - 38%. 80% of top down organizations stated that their employees apply 3S. On the other hand 20% of bottom up organizations understand knowledge as an ownership of departments. It is quite high score that indicates potential problems with across border knowledge sharing.

Combined structures seem to be the best for systemic knowledge management. 87% of organizations with this type of structure reported that their employees cooperate, 87% that they share their knowledge, 42% reported trust based on knowledge and 65% that their employees use 3S.

In our opinion, type of organizational structure determines internal environment of organization and the way how it responds to internal and external incentives. Combined type

of organizational structure seems to be the best for knowledge management. When asked why they chose combined organizational structures, many organizations said that they had to. They found themselves in highly competitive market and had to use any knowledge available. Most of them arrived to combined structure intuitively without knowing about theory.

Combined organizational structure has high potential for knowledge management and can be recommended to organizations that want to manage their knowledge in systemic way.

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