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Knowledge Continuity as a Part of Business Continuity Management

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***Abstract*—**Today the intangible assets are the capital of knowledge and are the most important and the most valuable resource for organizations. All employees have knowledge independently of the kind of jobs they do. Knowledge is thus an asset, which influences business operations. The objective of this article is to identify knowledge continuity as an objective of business continuity management. The article has been prepared based on the analysis of secondary sources and the evaluation of primary sources of data by means of a quantitative survey conducted in the Czech Republic. The conclusion of the article is that organizations that apply business continuity management do not focus on the preservation of the knowledge of key employees. Organizations ensure knowledge continuity only intuitively, on a random basis, non-systematically and discontinuously. The non-ensuring of knowledge continuity represents a threat of loss of key knowledge for organizations and can also negatively affect business continuity.

***Keywords*—**Business continuity, knowledge, organizations, survey.

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I. Introduction

EMPLOYEES and generally human resources are indispensable components for organizations. The competitive advantage of organizations lays mainly in the way their employees use their knowledge, experience and skills. All employees have knowledge independently of the kind of jobs they do. Today the intangible assets are in the capital of knowledge and are the most important and the most valuable things for organizations.

Knowledge management can contribute to a higher quality of processes generally. It can contribute especially in processes which work with knowledge and it contributes to improving organizational competitiveness. Nevertheless the knowledge management does not work in crisis.

Business Continuity Management is a management process that identifies the potential consequences of losses and its aim is to develop such procedures and conditions that will permit continuity ensuring and the restoration of an organization's key process and activity at a preset minimum level in the event of their disruption or loss [4, 5, 6, 14].

Companies whose aim is to ensure the continuity of their business apply Business Continuity Management (hereinafter BCM), usually through proven and certified standards and related norms. To eliminate threats from the external and internal environments, they use the valuable knowledge of their employees – specialists, without whom the companies would fail to ensure and implement these activities [3, 11, 12].

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II. Objective and Methodology

The objective of this article is to identify knowledge continuity as an objective of business continuity management. A partial goal was to verify, based on a survey, the dependency between the BCM application and knowledge continuity ensuring.

The theoretical part of the article has been drawn up on the basis of the analysis of secondary sources while primary data has been obtained by means of a quantitative survey realized under University-wide grant focused on Business Continuity Management. The survey was conducted using the method of questionnaire survey and was targeted at knowledge continuity ensuring through Business Continuity Management processes. The survey was carried out in 106 organizations in the Czech Republic. The sample group was selected by quota sampling according to predefined criteria. The following organizations were addressed:

- 75% of organizations in the tertiary sector and 25% of organizations in the secondary sector
- 42% of small organizations (up to 50 employees), 29% of mid-sized organizations (51 to 249 employees), and 29% of large organizations (over 250 employees)
- 85% of Czech organizations, 15% of foreign organizations (operating in the Czech Republic).

The structure and categorization of the sample group corresponds to the categorization according to the Czech Statistical Office (2012).

The questionnaire was aimed at employees with operational risk competences, employees in the area of information security, or directly at managers. The questionnaire was completed electronically, using the LimeSurvey application. The survey was conducted in the period from 18 June 2012 to 15 October 2012. The data was processed using SPSS 20. To evaluate the outcomes of the questionnaire survey, descriptive statistical tools were used. To verify the dependency in the contingency table, the Chi-square ($\chi 2$) test was applied. The strength of dependency was determined by means of the correlation coefficient and Cramer's contingency coefficient.

For the purposes of the article, the following abbreviations have been used:

BCM = Business Continuity Management
KC(M) = Knowledge Continuity (Management)

III. Theoretical Background of the Work

Accepting the knowledge as the key economic factor in production and knowledge continuity as an essential

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component of knowledge preservation was built on ten stages in organizations at the end of the twentieth century [1, 9, 10]:

1) The emergence of the Information Age and the knowledge economy.
   Today organizations know their employees and their knowledge are assets for them.
2) The shift from mechanic organizations to organic ones. Change of organization structure is frequent today.
3) Data and information proliferation and overload, replacing the need for information processing with the challenge of knowledge processing and creation. The organization and their employees cannot work without the correct information and knowledge.
4) High employee turnover and brief job tenure due to downsizing and job hopping, which results in huge organizational knowledge gaps.
   Management must motivate their employees to work and to share information and knowledge.
5) Impending baby-boomer retirements, which threaten to bring about potentially devastating knowledge losses. The senior employees retire and their knowledge leaves the organization with them. It is important that these people share their experience and knowledge.
6) Knowledge turnover caused by greater use of a contingent workforce in all its forms, which depletes organizational knowledge.
7) The drive for innovation and the emphasis on organizational learning, which requires knowledge of the past and quick access to existing resources.
   The management of an organization should supervise organizational learning.
8) A commitment to higher quality and to continuous improvement, which requires knowledge continuity if it is to be achieved.
   The commitment to higher quality should ensure effective knowledge transfer in the organization.
9) The development of sophisticated computer technology that enables the attainment and transfer of operational knowledge.
   Today ICT is very important for every organization in the world. ICT supports knowledge transfer and knowledge sharing in organizations and also in external relations.
10) The highly competitive global marketplace, which rewards quick responses, agile moves, and deft maneuvering, all built on operational knowledge continuity.
    If the organization ensures their operational knowledge continuity, it will get the competitive advantage before its competitors.

It is obvious, that to use the knowledge capital effectively it is important that there is continuous information transfer. Every employee must have the necessary knowledge, experience and skills needed for their work. If the organization successfully uses knowledge management it is possible to identify the following signs:

- Every knowledge potential of the organization is used optimally and the best knowledge is available at all times and everywhere.
- Knowledge market works optimally in organizations. Key knowledge is successfully evaluated in the form of processes, structures, projects and patents.
- Knowledge is successfully used for the development of the innovative products, services and processes.
- Individual findings, successful and non-successful, are turned into knowledge and are available for every employee who needs this knowledge.
- Working learning systems based on the best practice in the organization are implemented.
- All risks associated with key knowledge is to be found in advance.
- Organizational strategy is in accordance with the policy of knowledge management.

Effective management of the knowledge asset in any organization requires the integration of two related but different processes that combine synergy and seamlessly create a megaprocess. According to Beazley et al. [1] it means:

- Knowledge transfer within the same employee generation (i.e., among current employees) achieved by means of the Knowledge management.
- Knowledge transfer between employee generations (i.e. from current employees to future employees) achieved by means of Knowledge continuity management. It is especially significant when the previous knowledge incumbent leaves the organization (for the competition or the retirement) or when the organization gets into human resource related critical situation (for example resignation or a death of an employee).

Knowledge continuity management is a branch of the field of knowledge management. While knowledge management concerns the capturing and sharing of know how valuable to colleagues performing similar jobs throughout a company, knowledge continuity management focuses on passing the critical knowledge from existing employees to their replacements [1, 8, 10]. Without a process in place to capture that knowledge and transfer it to their successors, it is lost forever. As a result, for those who follow them in the job it takes longer for them to get up to speed and important discoveries and insights disappear, and the company's ability to act quickly and intelligently is crippled. Organizations need to have effective methods for transferring employee know-how. That's where the concept of knowledge continuity management comes into play.

Retaining as much knowledge continuity as possible ensures the minimum change of knowledge level. Without adequate knowledge continuity between former and a new employee there is a drain of intellectual capital and this squanders the knowledge asset [1, 9, 17].

The concept of knowledge continuity has historically arisen on the base of development forces, for example with these which are above in the article. Ignoring the existence of knowledge continuity (in today knowledge economy) could have as a consequence a crisis involving knowledge discontinuity, a knowledge vacuum and a knowledge crisis

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(because critical knowledge went with the person who left the organization).

Non-ensuring knowledge continuity means that organizations are jeopardized by the loss of key knowledge [15, 16]. According to Urbancová [15], the dependency between knowledge continuity ensuring and a threat to an organization has been confirmed; the level of threat being dependent on the sector (p-value = 0.037, level of dependency was 0.248). A counter-measure against this threat is the targeted ensuring of knowledge continuity of key employees within the frame of organizational processes.

Business Continuity Management pursuant to the BS 25999 [4, 5] standards focuses in particular on the development of resistance of the overall organization, permitting it to overcome the loss of part of or all its operational skills, ensuring employee survival and the preservation of equipment, which is associated with the correct division of management responsibilities [2]. BCM standardization helps organizations create a better view of the situation facilitating the development of their own plans of business continuity management, introduces methods of measuring changes in progress in the system that is being established, enables the organization to evaluate the quality of the introduced BCM system and, last but not least, proves that business continuity management is an up-to-date topic that is of interest to a wide spectrum of organizations [12, 13]. An efficiently developed system of business continuity management is a guarantee of financial stability and legal liability for the organization which confirms that the organization utilizes all the necessary measures to protect its business interests, its employees and investments [2, 7].

According to BS 25999 [4, 5], all employees have a substantial impact on risks endangering the organization that have to be dealt with from the moment of recruitment, through education, remuneration, and training to the moment of termination or modification of their employment contract. People (employees) form part of an organization's assets and determine the risks connected with other assets. It is evident that this concerns primarily the risks arising from their work activities or the positions which they hold. These risks should be identified within the frame of the risk analysis phase.

IV. Results

The readiness to deal with unexpected events that have a negative impact on an organization's performance is one of the indicators of management quality and efficiency. It also gives evidence of the organization's ability to learn about risk management efficiency. The theoretical background shows that the non-ensuring of knowledge continuity can have a direct impact on business continuity and cause a crisis situation in the organization. The ability to ensure business continuity, and simultaneously knowledge continuity, turns out to be an important parameter in the evaluation of the organization by customers and investors.

The above-mentioned BS 25999 [4, 5] standard concentrates on the issues of human resources and knowledge only to a limited extent. It does not deal explicitly with the identification of key employees and ensuring the continuity of their knowledge. Simultaneously, the ICT area, which is a part of business continuity, is currently characterized by a number of different trends. Their aim is to ensure access to data and other information activities, but they neglect the human factor as an active, performing component. It is necessary to realize that the general goal of business continuity is to restore an organization's critical processes, which relates not only to facilities, tangible and intangible assets etc., but identically also to its labor force. This means an increase in the number of events with a negative impact that organizations have to be prepared for – and the loss of knowledge of key employees is definitely one of them. It is necessary to realize that the degree of an organization's resistance to events with a negative impact is determined not only by the quality of business continuity, but primarily by the level of employees' preparedness. In brief, technical support is important, however, the main responsibility of dealing with critical situations will always be on the part of people.

In 2012, a survey was carried out in the Czech Republic as part of a university-wide grant which revealed that business continuity on the basis of selected BCM standards (see Table I) was ensured only by 18.1 % of respondent organizations. These were predominantly large organizations operating in the banking and financial sectors. An evident reason for the above said is that these organizations have an obligation to apply BCM to fulfill the requirements set for this sector.

The most commonly applied standard in the Czech Republic is BS 25999-1, followed by BS 25999-1 and 2.

TABLE I
SHARE OF BCM STANDARDS APPLICATION IN THE ORGANIZATIONS IN THE CZECH REPUBLIC

BCM standards applied by organizations	Share
BS 25999-1	28 %
BS 25999-1 and 2	22 %
BS 25777:2008 (ICT Continuity Management)	19 %
ISO/PAS 22399 (Societal security)	9 %

The most commonly applied standard in the Czech Republic is BS 25999-1, followed by BS 25999-1 and 2.
Source: own survey

Other BCM related norms and standards used in the territory of the Czech Republic are ISO 27001 (ISMS) applied by all organizations, CobIT used by 16% of organizations and ITIL by 53% of organizations. Organizations applying BCM mentioned the areas of their concern. 100% of these said that the goal of business continuity management was ICT, 95% of organizations focused on business and key processes and only 58% of organizations were interested in human resources. It is obvious that the area of human resources is not perceived as an equal goal compared to the previously mentioned areas.

In total, 81.9% of the respondent organizations do not ensure BC. This is primarily due to the fact that some economic sectors do not consider BCM important (54.29%). In total 13.33% of organizations do not apply BCM due to its high costs and in 9.52% of organizations (10 organizations)

this area is not supported by management. A positive finding is that 18% of organizations that do not currently apply BCM wish to acquire standardization within a 5-year horizon.

The survey also concentrated on the dependency between BCM application and the ensuring of continuity of the knowledge of individual employees in key positions (see Table II).

TABLE II
CONTINGENCY TABLE OF KNOWLEDGE CONTINUITY RELATED TO BCM

Does your organization apply Business Continuity Management?	Knowledge continuity			
	Total	Ensure for identified key personnel	Ensure for selected positions (senior etc.)	No ensuring
NO	86	0	0	0
YES	20	6	13	1
Total	106	6	13	1

Source: Own Survey

The results in organizations applying BCM reveal that 32% of these organizations ensure knowledge continuity for all key personnel while 63% of organizations ensure knowledge continuity for selected positions only (mostly senior positions). 5% of organizations stated that they did not ensure knowledge continuity at all.

V. DISCUSSION

Knowledge continuity may be ensured solely by a systematic, ongoing and long-term process. Human Resource Management marginally deals with succession issues and talent management; however, it does not focus on knowledge continuity. It is possible to say that it concentrates on an organization's internal environment, but does not prevent the occurrence of crisis situations, which include the loss of critical knowledge. Therefore organizations should have this anchored in BCM.

Risk management and BCM represent a proactive approach based on prevention. On the contrary, crisis management is characterized by a "reactive" approach lying in responding to a critical situation and attempting to overcome it. The loss of knowledge of key employees is a threat for organizations (p–value X^2 test = 0.005, Cramer's V = 0.334; direct middle dependence) and dealing with critical situations only after the loss of knowledge has a serious impact.

Knowledge continuity management is based on proactive principles and is more appropriate to implement as part of BCM. A suitable interconnection of knowledge continuity and BCM is shown in Fig. 1.

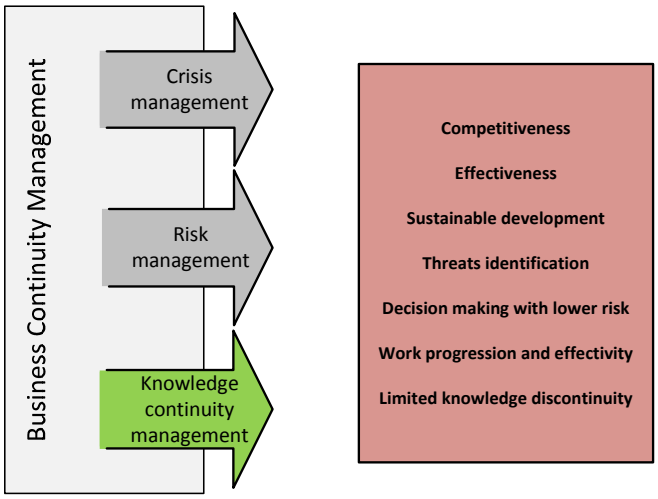


Fig. 1 Interconnection of knowledge continuity and BCM
Source: own elaboration

Knowledge continuity has other human resource related effects for organizations. Knowledge continuity management increases the commitment of new employees, lowers their stress, and raises their morale. It is very important that employees who leave organizations transfer and share their knowledge and experience before going.

BCM standards do not contain specific recommendations, principles, preconditions, systematic procedures, etc. that would help organizations considering BCM ensure continuity and preserve the critical knowledge of their key employees. Organizations thus have to rely on outputs of risk analyses and their own way of dealing with human resources issues. Organizations ensure knowledge continuity on an intuitive and random basis, non-systematically and discontinuously. Often they identify the need to preserve knowledge only shortly before a key employee's leaving. This, however, needs to be dealt with in advance by systematic ensuring of knowledge continuity within organizations.

On the basis of the outcomes of the survey, it can be summarized that the majority of organizations (82%) do not implement BCM. It is evident that managers have to realize how important the human factor and knowledge continuity ensuring within BC are, since business continuity cannot be fully ensured without knowledge employees with critical knowledge. What is important is the support of top management and integrating KCM into a company's organizational culture so that all employees understand its importance also outside BCM processes.

VI. CONCLUSION

The aim of organizations is to have or put the required knowledge, where it is needed. If successfully achieved, people can acquire and consequently use the knowledge in order to create a competitive edge in the organization. It is important to keep competitiveness in the case of human resource related business continuity events. In the Czech Republic the knowledge continuity as part of BCM is applied

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intuitively, not systematically, mostly for selected key workers.

Knowledge continuity management can currently be considered a goal of BCM; it leads to a higher competitive advantage, efficiency, better identification of threats and improved decision-making with lower risks. Systematic knowledge continuity ensuring helps increase organizations' resistance, eliminate knowledge discontinuity and improve their efficiency.

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