FINDINGS REGARDING ROMANIAN ICT SMES' ORGANIZATIONAL PERFORMANCE IN KNOWLEDGE ECONOMY

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Abstract

The purpose of this paper is to examine the influence of knowledge management (KM) on the performance of small and medium ICT companies from Romania. To achieve this goal, I conducted a survey on a sample of 79 SMEs. By using relevant statistical techniques. I found out that hypothesis of the research are checked and results indicate that knowledge management has significant direct effects on the performance in SMEs. I must emphasize that this paper shows only in a compact manner results of research who suggests that the promotion of initiatives in the field of knowledge management definitely improve organizational performance.

Keywords: *Small to medium-sized enterprises, Knowledge management, SMEs performance*

Introduction

Firm performance was studied intensively in the last decades, but results were obtained particularly only in large companies. Moreover, performance it is also a complex and multidimensional business phenomenon. Performance can be characterized as "the firm's ability to create acceptable outcomes and actions" (Ceptureanu EG et al, 2014). For any organizations obtaining improved performance is not only dependent on the successful deployment of tangible or intangible assets but also on the effective management of knowledge (Ceptureanu SI, 2015a). SMEs have their own roles to play in the economy, as to large organizations. Therefore, not only do large organizations need to improve themselves through knowledge management (KM) in their pursuit for excellence, but so also should small and medium ones.

The concept of knowledge-based economy is widely used in a variety of contexts and with several meanings (Nonata et al, 1995; Ceptureanu SI, 2014). Initially, knowledge-based economy was addressed only to high-tech industries but now days, knowledge-based economy is viewed more broadly. Moreover, application of knowledge to generate new products or services, occupies a central place in the literature devoted to the knowledge economy. However, more recent work (Sissons, A, 2011) tends to address broader concept,

addressing not only innovation. Florida emphasizes the key role of "social class creative" in generating competitive advantage (Florida, R, 2002).

The concept of KM has witnessed considerable research during the last decades (Carrillo et al., 2003; Tsai and Shih, 2004; Lin and Tseg, 2005; Young, 2006). Nonaka and Takeuchi (1995), in their theory on knowledge-based organizations, further emphasized the importance of knowledge in the new economy. Their thesis is that knowledge represents one of the sources of sustainable competitive advantages and that knowledge is the basic foundation for economic performance. Knowledge is an important asset for small and medium-size firms in the time of global competition. Knowledge can be determined an important determinant of success of small and medium-size firms and undoubtedly one of the sources of sustainable competitive advantage. For these organizations, KM is an innovative management tool that enables them to benefit from the current interest in the subject in academia and business practice. Gloet and Terziovski (2004) describe KM as the formalization of and access to experience, knowledge, and expertise that create new capabilities, enable superior performance, encourage innovation, and enhance stakeholder's value.

Literature review

Knowledge is important to any modern organization in XXI century. Knowledge had witnessed considerable research in the past few years (Bruton et al., 2007). It is widely recognized that knowledge is an essential strategic resource for a firm to retain sustainable competitive advantage (Ceptureanu SI, 2015b). As knowledge is created and disseminated throughout the company, it has the potential to contribute to the company's value by enhancing its capability to respond to new and unusual situations. Knowledge is "an asset that needs to be effectively managed" (Davenport et al., 1998). Interest in knowledge management has grown dramatically in the recent years, as more researchers and practitioners have become aware of the "knowledge potential to drive innovation and improve performance" (Cavaleri, 2004). Knowledge management is an emerging concept in the field of management and widely adopted in organizations for enhancing performance. It is promoted as an essential cornerstone for companies to develop sustainable competitive advantage and to remain at the forefront of excellence in a level playing field market (Ceptureanu EG, 2015a). Liebowitz and Wilcox (1997) stated that KM can be defined as the explicit control and management of knowledge within an organization aimed at achieving the company's objectives.

Knowledge management is an approach of more actively leveraging "the knowledge and expertise to create value and enhance organizational effectiveness" (Gold et al., 2001; Scarbrough, 2003). It provides a new way for the organization to achieve explicit and tacit knowledge sharing (Ceptureanu SI et al, 2015b). Knowledge management impacts firm performance through its efficiency in developing the intellectual assets that are a source of competitive advantage (Ndlela and du Toit, 2001). For an organization to remain competitive, it must effectively "practice the activities of creating, acquiring, documenting, transferring, and applying knowledge in solving problems and exploiting opportunities" (Zack, 1999). Further, effective KM entails an "understanding of the interrelationships that may exist among KM processes such as knowledge acquisition, knowledge creation, knowledge documentation, knowledge transfer, and knowledge application" (Lee et al., 2005). Firms that exhibit a greater level of KM capacity experience a learning effect that can reduce redundancy, respond rapidly to change and develop creative ideas and innovation (Gold et al.,

2001; Scarbrough, 2003, Ceptureanu EG, 2015b). The quality of decision making depends on acquisition, sharing, and application of knowledge across individuals and organizational groupings. As described by Bergeron (2003), the KM approach or process consists of eight fundamental components, namely acquisition, modification, use, archiving, transfer, translation, access, and disposal. Scholars have addressed several KM processes or activities, including acquisition or creation, storage, sharing or transfer, and usage or application (Bouthillier and Shearer, 2002; Beckman, 1999; Wiig, 1999). In this research I study three KM processes: acquisition, sharing and application of knowledge.

Knowledge acquisition is one part of KM which, in turn, has been defined as "[...] the process of critically managing knowledge to meet existing needs, to identify and exploit existing and acquired knowledge assets and to develop new opportunities" (Quinstas et al., 1997). Knowledge acquisition is "the process by which knowledge is obtained" (Huber, 1991). Knowledge acquired can be tacit, explicit or a combination of both. Knowledge acquisition results from individual participation and interactions with tasks, technologies, resources, and people within a particular context (Tsoukas, 1996). Several scholars agree that part of managing knowledge within the organization is developing processes that acquire knowledge (Leonard, 1995; Nonaka and Takeuchi, 1995). Two primary means for collecting knowledge are as follows:

(1) to seek and acquire entirely new knowledge;

or

(2) to create new knowledge out of existing knowledge through collaboration between individuals and between business partners (Leonard, 1995; Nonaka and Takeuchi, 1995). Several researchers also emphasize that collaboration with other organizations is critical to knowledge acquisition (Grant, 1996; Matusik and Hill, 1998).

Firms who can acquire external and internal knowledge would reduce uncertainty and achieve a greater number of administrative and technological distinctiveness (Sarin and McDermott, 2003).

The goal of **knowledge sharing** can either be to create new knowledge by differently combining existing knowledge or to become better at exploiting existing knowledge. It comprises a set of shared understandings related to providing employees access to relevant information and building and using knowledge networks within organizations (Hogel et al., 2003, Ceptureanu SI et al., 2015a). Knowledge sharing refers to collective beliefs or behavioural routines related to the spread of learning among different individuals or units within an organization (Moorman and Miner, 1998). It is about how individuals, groups, and organizations communicate and learn from each other. Personal or organizational networks play an important role in accessing knowledge. The sharing of knowledge is facilitated by some kind of personal or virtual network. Without networks there is no opportunity for accessing knowledge. Networks can be maintained by formal or informal face-to-face meetings, or – the latest trend – by physical structures that do not allow individual cubicles, but emphasizes transparent community spaces. Knowledge sharing is critical to a firm's success (Davenport et al., 1998). Knowledge sharing creates opportunities to maximize organization ability to meet those needs and generates solutions and efficiencies that provide a business with a competitive advantage (Reid, 2003).

Another important aspect of the KM process in organizations is **knowledge application**. Wiig (1999) notes that the value of knowledge assets is realized when the assets are

used to create products or deliver services, or when they are sold or traded for value. Knowledge application is a focal element in KM process (Grant, 1996). Knowledge application is defined by some researchers as "the utilization and use of knowledge in an enterprise's value-adding process". It includes adapting, integrating, and applying knowledge to the organization's processes and products. By effectively applying knowledge, individuals might make fewer mistakes or improve their efficiency and reduce redundancy (Gold et al., 2001).

SMEs **performance** is an indicator which measures how well an enterprise achieves their objectives. Ho (2008) defined performance in terms of "how well an organization accomplishes its objectives". Schermerhorn et al. (2002) point out that "performance refers to the quality and quantity of individual or group work achievement". Delaney and Huselid (1996) suggest two ways to assess SME and market performance. Koh et al. (2007) rightly pointed out that although performance is measured by both financial and market criteria, the short-term objectives of supply chain management are to enhance productivity and reduce inventory and lead time. A number of prior studies have measured performance using both financial and market criteria, including return on investment (ROI), market share, profit margin on sales, growth of return of investment, growth of sales, growth of market share and overall competitive position (Vickery et al., 1999; Stock et al., 2000). Tippins and Sohi (2003) propose performance measures on four dimensions: relative profitability, return of investment, customer retention and total sales growth. Morales et al. (2011) identifies four dimensions of performance, including:

- Return on assets,
- Return on equity,
- Return on sales and market share
- Growth of sales.

Zack et al. (2009) propose performance measures on five dimensions: innovation, rate of new product development, customer satisfaction, customer retention, and operating costs. Based on the above literature, I focus on three dimensions of performance including turnover, TQM and stakeholders satisfaction.

Wolff and Pett (2006) argued that SMEs and entrepreneurial firms are a key segment and driver for most national economies. Successful SMEs have a similar competitive advantage factor that allows them to create a niche in the market by changing their product mix to satisfy customer needs (Gadenne, 1998). SMEs are defined in different ways in different parts of the world. Some define them in terms of assets, while others use employment, shareholder funds or sales as criteria. Some others use a combination of revenue and employment as a hybrid criterion. Current literature suggests that SMEs may be differentiated from larger companies by a number of key characteristics. These are generally described (Ghobadian et al., 1997; Berry, 1998) as: personalized management, with little devolution of authority; severe resource limitations in terms of management and manpower, as well as finance; reliance on a small number of customers, and operating in limited markets; flat, flexible structures; high innovatory potential; reactive, fire-fighting mentality; and informal, dynamic strategies.

Lane et al. (2001), suggest that large organizations may suffer from inertia and thus retard learning. This view is also highlighted by some studies, which propose that larger organizations may gain less knowledge internally than smaller organizations, because they are able to create knowledge by themselves (Minbaeva et al., 2003) or are likely to have

more opportunities to acquire knowledge from external sources (Almeida et al., 2003). According to Day et al. (2006), this is because SMEs have a propensity to seek out information more eagerly through interactions with knowledge possessors than large firms. One important dimension that has an effect on the practice of KM in SMEs is their special characteristics – management structure, markets, systems, culture, etc. – that differentiate them from large organizations. SME characteristics are likely to influence all activities in the life-cycle of knowledge – from the acquisition and capture of knowledge, its organization and storage, and its dissemination/transfer, to its ultimate application. The practice of KM in SMEs differs from that of a large organization because SMEs are not "a little big business" (Wong and Aspinwall, 2004). First, they are a source of innovation in products and services; they supplement a variety of products and services by operating in niche markets (Storey, 1994). Thus, SMEs are an important and indispensable part of a country's growth. Second, some of the widely cited potential benefits of KM apply aptly to SMEs. These are improvements in efficiency, decision making, competency, learning, innovation, and responsiveness, among others (Civi, 2000; Frey, 2001; Jarrar, 2002). The vast majority of studies in the literature of KM suggest that KM positively impacts firm performance (Hoopes et al., 1999; Lloyd, 1996; Lubit, 2001). In Jantunen's (2005) research, he states that knowledge is posited in an organization as a strategic asset which can help the firm maintain its competitive ability in a turbulent environment. Gorelick and Tantawy-Monsou (2005) view KM as a system or framework that integrates people, processes, and technology to achieve sustainable results by increasing performance through learning. The results indicate that KM practices are positively associated with OP as generally suggested by the KM literature, both qualitative (Nonaka, 1994) and quantitative (Choi et al., 2003; Darroch et al., 2002; Schulz et al., 2001; Simonin, 1997; Tanriverdi, 2005, Ceptureanu EG, 2015c). Given the importance of organizational knowledge, many companies have been trying to influence the acquisition, sharing and application of knowledge (Coombs et al., 1998; DeCarolis et al., 1999; Von Krogh et al., 2001). In fact, knowledge-based assets and KM processes are critical for a firm's performance. Based on the literature review and research objectives, the following hypotheses were derived: KM processes are positively related to SMEs' turnover, TQM and stakeholder's satisfaction.

Research methodology and results

Variables in the questionnaire include background information, knowledge acquisition, knowledge sharing, knowledge application, turnover, TQM and stakeholder's satisfaction. All independent and dependent variables require five-point Likert style responses ranging from "strongly disagree" to "strongly agree". This study examined a sample of 79 SMEs in Romania. Each company received five questionnaires to answer. The authors request the questionnaires to be completed by entrepreneurs or managers who are familiar with the topic of this study. Of the 112 SMEs 79 returned questionnaires and those was valid and complete for the quantitative analysis (valid return rate is 0.7053 percent). The reliability of the measurements in the survey was tested using Cronbach's coefficients. Hair et al. (1998) stated that a value of 0.70 and higher is often "considered the criterion for internally consistent established factors". The Cronbach's coefficients in parentheses indicating the internal consistency reliability of the measures in the six factors are all above the suggested value of 0.70 (Hair et al., 1998). Table I displays the research statistics and Table II presents the re-

sults of regression analysis regarding the effects of KM processes on SMEs' performance. Coefficients of knowledge acquisition, sharing and application are positive and significant for turnover ($p < 0.05$, $p<0.01$, and $p<0.01$, respectively). These findings indicate that SMEs would achieve a higher level of turnover if they have well-developed knowledge acquisition, sharing and application. In summary, all three factors of KM processes have the expected signs and also have significant effects on SMEs' performance.

Table I. Research statistics

The variables	Mean	SD	1	2	3	4	5	6
Knowledge acquisition	5.38	0.89	1	-	-	-	-	-
Knowledge sharing	5.24	0.81	0.28*	1	-	-	-	-
Knowledge application	5.18	1.01	0.57**	0.31*	1	-	-	-
Turnover	5.01	1.0	0.18*	0.27*	0.42**	1	-	-
TQM	5.44	0.66	0.19*	0.44**	0.41**	0.42**	1	-
Stakeholders satisfaction	5.11	1.02	0.17*	0.19*	0.49**	0.55**	0.54**	1

Notes: Significant at: *p<0.05 and * *p<0.01

Table II. Results of regression analysis

Variables	SME Performance		
	Turnover	TQM	Stakeholders satisfaction
K acquisition	0.09*	0.21**	0.1*
K sharing	0.21**	0.23**	0.17**
K application	0.27**	0.35**	0.32**
R2	0.26	0.34	0.22
F	18.2**	10.4**	15.2**

Note: Significant at: *p<0.05 and * *p<0.01

Discussion and conclusions

This study examines the role of KM processes on SMEs' performance. My results indicate that KM processes have positive and significant effects on SMEs' performance. The implication of the results is that entrepreneurs or senior managers need to actively manage their firm's human capital to stimulate managing knowledge acquisition, sharing and application. Furthermore, research suggests appropriate investments in KM initiatives can enhance performance. It is therefore important that firms recognize the variableness of knowledge processes and the need to deploy strategies that lead to the acquisition and deployment of those that are most relevant to the firm's objectives. This study has also some limitations. The first limitation is the number of responses obtained from the survey was rather small. A larger number of responses would probably yield a more accurate finding and so, future research could replicate this study, with the hope that more SMEs have implemented KM. In addition, since this study only investigates Romanian SMEs, hence, the findings and conclusions drawn from this research are representative of the Romanian SMEs, and the findings may not generalize to other geographic regions or cultures.

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