

Tanțău, Adrian Dumitru; Paicu, Eliza Laura

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Managing knowledge risks in intrapreneurial environment

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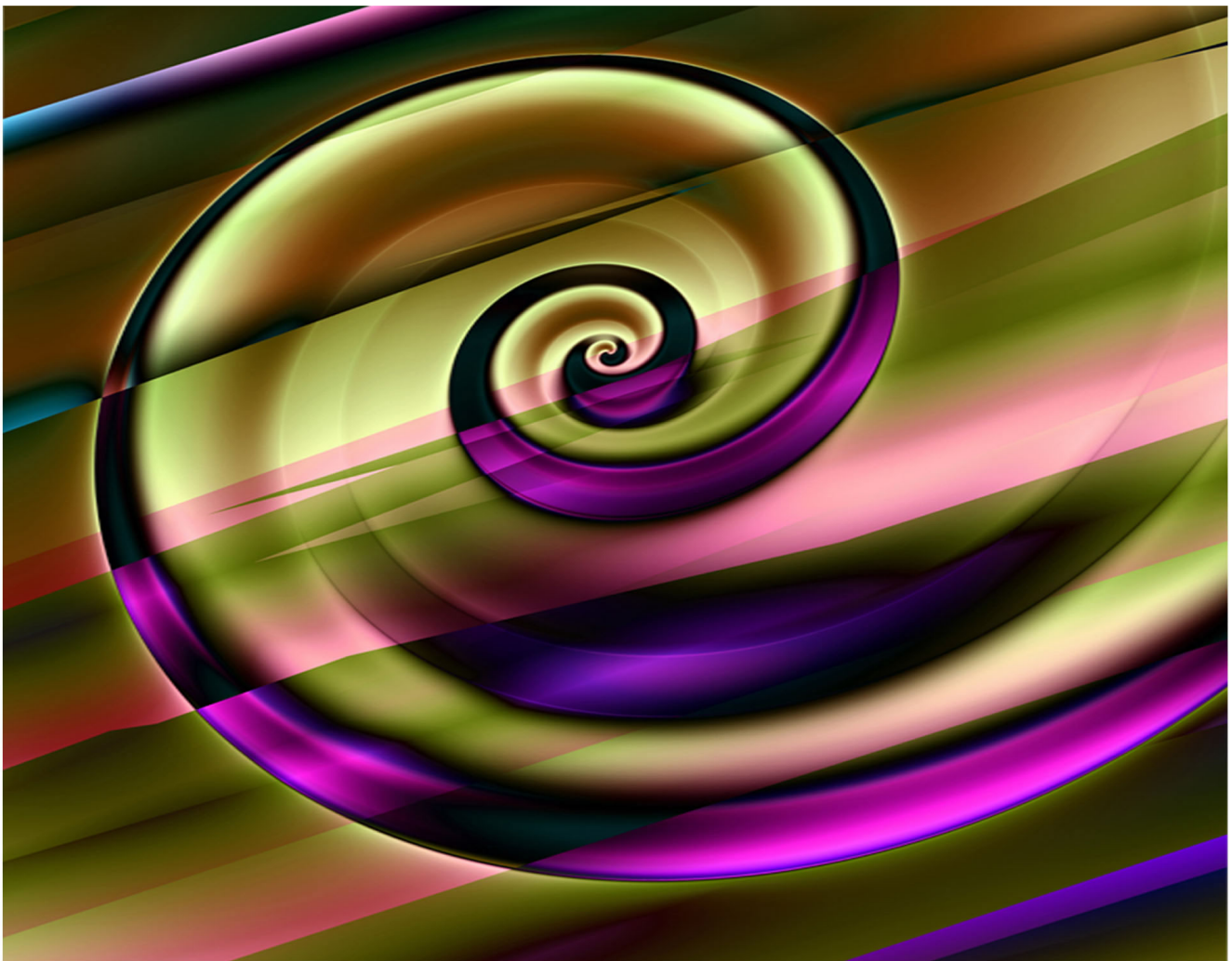
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Table of Contents

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Managing Knowledge Risks in an Intrapreneurial Environment

Adrian Dumitru Tanțău, PhD. Professor
Eliza Laura PAICU (CORAȘ), PhD. Student (corresponding author)

Faculty of Business Administration, The Academy of Economic Studies
Calea Grivitei 2-2A, 010731, Sector 1, Bucharest, Romania

ad_tantau@yahoo.com
eliza.paicu@yahoo.com

Abstract:

The knowledge-based view of the firm argues that knowledge and the capability to create and share it are the key resource of the firm's competitive advantage. Since many organizations are becoming knowledge intensive, an increased need of awareness regarding the risks residing in the knowledge processes develops, as well as the need to know how these risks affect the entrepreneurial behavior of people inside the company.

In this paper we seek to provide a structured framework of knowledge risks, based on relevant literature and results of semi-structured interviews conducted with middle managers inside ten banking institutions. Using the Delphi method, we also explore whether effective management of knowledge risks boosts the entrepreneurial skills of employees working in a bank, thus fostering intrapreneurship.

Our qualitative research provided us with a much needed classification framework of knowledge risks, molded on the classic configuration of the knowledge processes. Moreover, we have validated the knowledge variables which highly influence the intrapreneurial environment in a bank.

We contribute to the scarce literature written on the topic of knowledge risks, by identifying the critical knowledge risk drivers and we detail how managing these risks can enhance the competitiveness of the firm. The research led us to discover that the most powerful variable residing in the knowledge processes flow is collaboration and communication among the actors involved.

Keywords: communication and collaboration, intrapreneurship, knowledge risks, knowledge sharing, organizational culture.

1. Introduction

Since many organisations are becoming knowledge intensive organisations (Drejer, Christensen and Ulhøi, 2004), there is an increased need of awareness regarding the risks residing in these intense

knowledge processes and a need to know how these risks affect the entrepreneurial behaviour of people inside the company. The knowledge-based view of the firm thus sees a firm as a knowledge-creating entity, and argues that knowledge and the capability to create and utilize it are the most important source of a firm's sustainable competitive advantage (Nonaka et al., 2000).

Financial institutions are highly oriented towards managing and mitigating financial, operational and market risks efficiently, but they are less focused on enhancing knowledge management in their risk management process and especially on addressing knowledge risks. Even if intrapreneurs working in a banking institution focus merely on financial risks, market risks, liquidity risks, weighting considerably on the risk profile of the organization, they should not avoid considering the knowledge risks. The little attention paid to these risks may reside in the lack of awareness related to the implications of knowledge risks, which are seldom identified, monitored and reported. (Brunold and Durst, 2012).

Since knowledge required for banking operations is more complex than in most industries, known for its diversity and its abstractness (Shih, Chang, and Lin, 2010), the risks deriving from knowledge processes are equally intricate. Empowering employees by stimulating their creativity and innovative skills is completed by creating and managing the corporate knowledge and the organizational knowledge risks.

The challenge of the current financial market requires a shift toward the focal point of human interactions: communication and collaboration empower the institutions to exploit the heart of their business, the people, and thus gaining an advance from their competitors who fail to become conscious of the potential of integrating their intellectual capital resources with their risk management flow. Though the widely accepted perception is that intangible assets are the key drivers for an institution's growth, performance and success, there is an inexplicably low accent put on their role to enhance a business competitive advantage and to minimize the risks encountered. Financial institutions are under pressure to produce returns in an extremely unfavourable environment, which increases the risks they need to overcome. Knowledge management is essential to gain advantages over competitors in the current rapidly changing financial environment, challenged by the global economic crisis and the emergent financial risks. Shih, Chang, and Lin (2010) point out that in an environment of high uncertainties and looming crises, banks should not only more efficiently integrate their work force, financial assets, and other tangible assets, but also improve their ability in the management of IC to achieve sustainable operations.

In this study, we endeavour to address an unexplored stream of research, referring to business risks associated with knowledge dynamics, on the background of an intrapreneurial environment. Dealing with knowledge risks builds up to the framework of knowledge risk management, in which the

intellectual capital resources of the organization are handled with excellence to efficiently control the risk management flow, in the scope of meeting the overall strategic objectives.

Trkman and Desouza (2011) articulate there is a limited literature written on the subject of knowledge risks and their classification, compared to other types of business risks. While the importance of effective knowledge management for mitigating risks is well established, it is surprising that the management of knowledge risks is rarely mentioned in the literature (Trkman and Desouza, 2011). The authors state that this approach dwells in the assumption that knowledge is an infinite resource that does not depreciate, whose value is not diminished if it not handled with care and that no transaction costs arise from its handling. The authors also point out that knowledge being the most important strategic resource, the effective identification and management of risks connected with this resource are crucial.

2. Main purpose of the research

The goal of our research is to build an exploratory framework that may help study the various kinds of knowledge risks that emerge in an entrepreneurial oriented company. Parting from the work of Trkman and Desouza (2011), our theoretical framework classifies knowledge risks structured on the processes in the knowledge risk management flow. Through our qualitative study, we further seek to validate our two basic assumptions:

- (1) as knowledge is the source for innovation, an efficient management of knowledge risks is a crucial factor that fosters intrapreneurship in an institution, and
- (2) the decrease in the level of knowledge risks is expected to positively impact the degree of intrapreneurship.

Innovation is increasingly considered to be one of the key drivers of the long-term success of a firm in today's competitive markets. Intrapreneuring becomes thus a distinctive component of companies that makes the difference, since the innovation potential is brought about by the entrepreneurial skills of the employees. This is why we study the way an effective management of knowledge risks influences the intrapreneurial potential.

In order to support the structure of our research, we define five knowledge variables that are expected to influence the intrapreneurial environment in a bank:

- the transparent communication and the propensity for collaboration among knowledge actors
- the top executives' creation of a climate of trust

- the level of definition of the organizational culture of the company
- the establishment of a rewards programme for innovating activity
- the empowerment of employees-to-be-intrapreneurs through education, training and trust

We will further show their capacity of reducing the negative effects of knowledge risks and the extent of their influence on the intrapreneurial environment in a bank.

3. Research methodology

Given the nature of our study and the lack of extensive knowledge around the approached subject, we believe an exploratory (qualitative) research is more appropriate. The selection of a qualitative approach allows the researchers to get close to participants and their thinking in order to scrutinise the entire research problem (Maykut and Morehouse, 1994).

Data were collected through semi-structured interviews with thirty-eight middle managers in ten banking institutions in Romania. This qualitative technique is regarded as appropriate when very little is known about the subject in hand (Maykut and Morehouse, 1994), thus it is suitable when the topic comprises an exploratory element (Saunders et al., 2007).

Apart from individual feedback of experts in the banking field, we advanced our study through the Delphi technique, a widely used and accepted method for achieving convergence of opinion concerning real-world knowledge solicited from experts within certain topic areas (Hsu, 2007). We applied the Delphi method in a series of workshops conducted in the period September – November 2012, organized with the logistics and knowledge support of the Romanian Banking Association. The discussions parted from questions related to general perception of knowledge processes in the bank, followed by awareness of knowledge risks and how they influence the capacity of the organization's environment to foster intrapreneurship. The final goal of the workshops and the individual semi-structures interviews was to build consensus on our two basic assumptions and to define the structure of a classification framework of knowledge risks.

We consider highly relevant the opinions of middle managers, since they foster communication about the organization's objectives, interact with a diversity of employees and encourage rational risk taking. Middle managers stimulate corporate entrepreneurship (Hornsby, Kuratko and Zahra (2002). In banks, middle managers are empowered to hold and manage the key knowledge of the institution, being highly trained and competent within the specialized area of knowledge (Hsu, 2007) necessary for our research – the knowledge processes.

4. Theoretical background

- **Intrapreneurship and innopreneurship**

The real challenge of a company is to establish a competitive advantage, and the only way to accomplish that is continuous innovation and creation of new ideas (Drejer, Christensen and Uhløi, 2004). According to Morris and Kuratko (2002), the answer is adaptability, flexibility, speed, aggressiveness and innovativeness which can be boiled down to one word – intrapreneurship. In modern organizations, intrapreneurs manipulate knowledge rather than physical assets (Drejer, Christensen and Uhløi, 2004), which places a great deal of focus on their ability to manage knowledge derived risks.

Intrapreneurship is the practice of developing a new venture within an existing organization, to exploit a new opportunity and create economic value (Pinchot, 1985). Intrapreneurship helps managers to renew and revitalize their businesses, to innovate, and to enhance their overall business performance (Kuratko et. al. 1990).

Since the era we live in relies on innovation for economic and technological development, the intrapreneurial dimension relies heavily on the innovative potential, thus being created a new actor in the knowledge field – the innopreneur, a term coined by Gündoğdu in 2012. An orientation towards innovation as critical factor for sustainable competitive advantage requires a dramatic shift of the entrepreneurs towards innopreneurship. It is the capability of managing knowledge risks and opportunities derived from them what provides distinctiveness to the classical intrapreneur, who makes the adjustment towards innopreneurship.

The innopreneur undertakes to manage, and take the risks of a business model. In our time, an innopreneur is interested in research and development and characterized as an innovation hunter who aggressively seeks for opportunities; transforms those opportunities into concrete marketable ideas; creates value-added; makes maximum efforts, assesses and undertakes the relevant risks to apply those ideas; and gathers the crops at harvest time (Gündoğdu, 2012).

- **Knowledge risks and knowledge processes**

The consequences of risks related to knowledge might be subtle in the beginning but in the end their devastating effects are reflected in financial results (Brunold and Durst, 2012).

Knowledge risk is defined as a likelihood of any loss from an event connected with the identification, storage or protection of knowledge that may decrease the operational or strategic benefit of any party

involved in the network (Perrot, 2007). Knowledge risk can be caused by the loss of, unsuccessful intended or unintended transfer of knowledge assets that result in loss or non-exclusivity of these assets (Bayer and Maier, 2006). In order to foster intrapreneurship, knowledge risks should be regarded as strategic risks. Summarizing the various definitions of knowledge risks, these are risks arising from a lack of knowledge. This may occur for a number of reasons including loss of records, gaps in existing knowledge and insufficient knowledge of those involved or related to the project.

Alter (2006) defines the dark side of knowledge management as activities that directly reflect unethical motives. This approach, along with results from our conducted interviews, lead us to propose three distinct criteria for determining the factors that induce knowledge risks: an existing negative attitude, respectively unethical reasons, an existing negative process, knowledge loss and, finally, an inexistent positive feature, respectively the lack of communication which stands for the major obstacle in knowledge creation and knowledge sharing.

The immateriality of knowledge brings about the extent of loss it may generate. Since the knowledge creation stands at the beginning of the whole knowledge flow inside an organization, the importance of properly identifying and managing the knowledge risks is crucial for the entire chain of processes and we believe currently understated, which also makes it a vulnerable issue.

In order to define the risks associated with knowledge, it is first necessary to label the main knowledge processes. Regarding the knowledge management process, researchers have identified many chief stages: acquisition, collaboration, integration and experimentation (Leonard, 1995); creation, transfer, assembly, integration and exploitation (Teece, 1998); creation, transfer and use (Spender, 1996); acquisition, conversion, application, and protection (Gold et al., 2001); generation, codification and transfer (Franco and Mariano, 2007); creation, dissemination and application (Law and Ngai, 2008). (Barbeira, Franco and Haase, 2012).

We have decided to use in our study the major processes of managing knowledge proposed by Alavi and Leidner (2001) and Rodriguez and Edwards (2009: knowledge creation (acquisition, synthesis, fusion and adaptation of existing risk knowledge), knowledge storage and retrieval (codification, organization and representation of risk knowledge), knowledge transfer (knowledge dissemination and distribution), knowledge application (risk knowledge can be converted in competitive advantages for financial institutions adopting the best practices. We also assert, supported by opinions of expert middle managers, that knowledge loss is a knowledge risk in itself. From these processes, Edwards and Rodriguez enhance the important influence of knowledge sharing in risk management, since it provides connection among people producing dissemination, collaboration, innovation and acquisition of

knowledge (Ipe 2003). Consequently, communication and collaboration act as enablers for knowledge sharing and innovation, being also critical knowledge variables that influence the intrapreneurial environment in a bank.

We have structured our research framing the indentified knowledge risks on the main knowledge processes, providing a classification framework of the knowledge risks. For each knowledge risk we have studied what knowledge variables are decisive in the management of those risks and how the effective supervision of the knowledge risks favours the development of the innovative potential of a company and building an intrapreneurial conduct for its employees. The results presented in the subsequent sections reflect the opinions of middle managers interviewed, who reached consensus on the approached subjects through the Delphi technique. A few other issues are supported by the studied literature, which completed our qualitative research.

5. Knowledge risks framework

With knowledge being the primary resource for achieving competitive advantage, managing optimally the risks deriving from knowledge processes increases the chances for the organization to gain advantage on the market. Managing risks approaching the forecasting dimension ensures the prerequisite of intrapreneurship. Constructing a syllogism based on the above affirmations, would lead us to assert that effectively managing the knowledge related risks ensures a climate that fosters intrapreneurship. During our research, we focused on validating this assumption using the extensive expertise of middle managers working in the banking environment.

While innovation inherently requires knowledge exchange, such an activity also holds notable risks in terms of possibly losing competitive advantage if core knowledge flows out to competing organizations (Hurmelinna-Laukkanen, 2011). All middle managers who contributed to our research agreed that knowledge risks are highly correlated to the innovation potential of a company and its chance to prove its competitiveness on the market.

Because knowledge-based resources are usually difficult to imitate and socially complex, the knowledge-based extension of the resource-based view of the firm posits that these knowledge assets may produce long-term sustainable competitive advantage. However, it is less the knowledge existing at any given time per se, than the firm's ability to effectively apply the existing knowledge and create new knowledge that forms the basis for achieving competitive advantage from knowledge-based assets (Alavi and Leidner, 2001). Also, knowledge creation and knowledge manipulation stand at the core of any entrepreneurial activity, since they create the frame that fosters idea generation and, hence, innovation.

Proactively approaching the risks that derive from knowledge creation and its manipulation is furthermore a module of entrepreneurship. Based on these considerations and on extensive feedback obtained from the thirty-eight middle managers involved in extensive workshops' discussions, we propose our knowledge risks frameworks, which stands as starting point for a detailed approach of the knowledge risks (Fig. 1):

Fig. 1. Knowledge risks and knowledge risk management flow



The collaborative and communicative environment, standing in the core of our framework, is part of an approach requiring financial institutions to go back to basics in their business: the power of human interactions. The internal and external stakeholders augment the organization's value by communicating their objectives, expectations, and most important, knowledge." Open and transparent communication is essential." (Thomas Wilson, chief risk officer at Allianz). The managers' interviewed highlighted that collaboration among partners in a business environment (employees, the management team, clients, suppliers, stakeholders), across all levels, bottom-up and top-down, brings the opportunity to acquire and exploit knowledge from all partners, with the purpose of better manage the risk management flow within the organization. This led us to assert that transparent communication and the propensity for collaboration among knowledge actors is a key knowledge variable which influences the innovative potential of employees in a company.

The development of this proposed knowledge risks framework is also important in the context of strategic knowledge risk management for the following reasons: First, the identification of risks is vital for their communication and management. In general, such frameworks provide a common language

that all of the participants can use to describe the basic elements. Second, a proper approach to either proactive or reactive risk management may differ considerably for various types of risk. This view broadly follows the structure used by Trkman and Desouza (2011) in their proposed framework of classifying knowledge risks in a network setting.

Managing effectively the risks derived from the five knowledge processes of creation, storage and retrieval, distribution, application and knowledge loss is essential to build organizational knowledge risk management, in a corporate entrepreneurial environment. In order to reinforce knowledge risk management, from the perspective of managing knowledge risks, it is essential to address equal importance to each of the five knowledge processes, which we approach individually in detail in the next section.

5.1. Knowledge creation risks

The majority of respondents depicted that knowledge accumulation capability is critical for the development of a climate of intrapreneurship, since knowledge creation leads directly to organizational innovation. In today's knowledge-intensive working environment knowledge creation as the source of sustainable competitive advantage has become widespread among practitioners as well as researchers (Nonaka, 1991, 1998). In an economic system where innovation is crucial for competitiveness, the organisational ability to create knowledge becomes the foundation of innovating firms (Fischer, 2001).

Parting from the three ways of creating knowledge by Reus et al. (2009), internal knowledge creation, externally (on the market of the organization) and through collaboration (through networks), we have asked the managers interviewed about the associated risks of these knowledge creation processes. The respondents were convinced that knowledge creation is highly correlated with the idea generation, leading to affirming that managing efficiently the knowledge risks stimulates innovation and therefore an intrapreneurial behaviour.

Knowledge risks related to knowledge created internally reside in the limited available knowledge of people, not connected to the outside information and biased. It is a closed environment which puts in danger the updating of knowledge. Externally created knowledge refers to adopting the industry's knowledge and adapting it to its own strategic goals. This process may bear the risk of incompatibility or artificial translation of knowledge, with no effects on internal processes. If knowledge is obtained through networks, the additional costs are the costs of creating/maintaining the ties in the network and managing the risk of the knowledge transfer (Trkman and Desouza, 2011). While acquisition costs in a network are lower, the costs of maintaining ties and managing knowledge risk can be higher, especially

due to the high fixed costs of establishing the relationship (Ellram et al., 2008). However, importantly, the higher costs involved in maintaining the network can reduce the costs of managing knowledge risks, due to the early detection of potential issues (Blome and Schoenherr, 2011). These considerations all converge to the idea expressed repetitively by the experts taken part in our workshops that communication and collaboration are knowledge variables that facilitate the knowledge flow among the stakeholders in a business process and affect the translation of strategic goals to all structures of a company. Most of middle managers concluded that a transparent communication process enabled them to lower risks in their company, especially people related risks.

Acs et al (2008) proved that an increase in the stock of knowledge has a positive effect on the level of entrepreneurship. Seven interviewees expressed the belief previously stated by Acs et al (2008), that intrapreneurial activity is greater where investments and incentives for new knowledge and new idea generation are relatively high and where risk related to knowledge creation are eliminated or managed properly. Consequently, some of the middle managers exemplified that knowledge created but not suitably exploited translates into a business risk that lowers the potential for intrapreneurship.

The lack of transparency in the organizational flows prevents the company to develop accurate information through knowledge creation. Knowledge creation is focused on the disseminated and delivered informational flows within an organization (Shih, Chang, and Lin, 2010), through the network of people interactions. Noticeably, communication was named by twenty interviewees a driver for knowledge creation and source for innovation. In support of that, the theory of cognitivists and connectivists stresses the importance of communication. Cognitivists and connectivists are considered the main knowledge creators in the banking industry. While cognitivist refers to developing more accurate and precise knowledge through the absorption of new information, and to construct a solution in order that the created knowledge can be systematically shared, the connectivists believe that the source of knowledge resides in the connection of information, therefore in communication as connector of knowledge processes (Shih, Chang, and Lin, 2010).

Since the majority of respondents were convinced that communication is the main driver for knowledge creation, following the results of our interviews, we assert that the lack of communication negatively affects the overall performance of the institution and the intrapreneurial potential.

Since the general perception of our banking experts was that continuous generation of new knowledge impacts on the potential of R&D of a company, there proves to be a strong connection between knowledge creation and enhancement of entrepreneurial skills inside the organization. Additionally, this

relationship has a correspondent on the risk level: knowledge creation risks endanger the entrepreneurial potential of the institution.

5.2. Knowledge storage and retrieval

Individual knowledge storing risks generally refer to biases in recall, belief systems and blind spots and affect the decision-making process of the person (Walsh, 1988). Potential risks at organizational level, regarding knowledge storing are mentioned by a selection of authors: March (1972) was concerned about "encased" learning, stating that memory is the enemy of organizations. Similarly, Argyris and Schon (1978) stated that organizational memory may lead to maintaining the status quo by reinforcing single loop learning (defined as a process of detecting and correcting errors). This process may lead to a closed knowledge environment, resistant to change.

Consequently, knowledge storage refers to organizational memory. Thus, storage, organization, and retrieval of organizational knowledge constitute an important aspect of effective organizational knowledge management (Alavi and Leidner (2001). As it can be concluded from several interviews conducted, the risk of loss of knowledge or not structuring appropriately the existing knowledge addresses the need to organize knowledge effectively.

All the managers interviewed agreed that knowledge storage has strong links with knowledge loss through the corporate memory dimension: key employees leaving the organization imply key knowledge exits also. The respondents were aware of the necessity to develop an efficient knowledge sharing system inside the company in order to ensure a permanently available knowledge back-up that can prevent the loss of knowledge. Furthermore, six participants articulated the following conviction: the higher the risk residing in knowledge loss, the more crucial is the intellectual capital of people leaving. Hence, it may be the case of losing capable, highly skilled, innovative and risk taking people, holding all the right resources for intrapreneurship. This finding would also enforce the argument that investing in key people and cultivating their key knowledge promotes intrapreneurship.

Also, nine middle managers referred to knowledge concentration as to a risky situation in which the company relies too much on just too few people with key specific knowledge necessary to achieve the strategic goals. They were aware of the fact that the higher the degree of knowledge concentration, the higher the risks associated: extreme negative impact when key people leaving, time pressure, decreased quality and excessive workload for these key people, absence of key knowledge sharing, insufficient time for these skilled professionals to generate new ideas and thus meet their role as intrapreneurs. Losing key staff of the company equals to a high intellectual capital risk since their individual knowledge

and best practice knowledge in a specific area cannot be replaced. The middle managers explained that the cost of this damage can be exponentially higher than the cost of mitigating this risk by keeping the critical personnel.

Wasting organizational resources by reinventing the wheel represents a knowledge retrieval risk mentioned by several respondents: not being able to identify necessary existing knowledge inside the bank assumes its inexistence and moves forward by re-creating that specific knowledge. The reasoning of these managers was that an organizational system that efficiently retrieves the needed knowledge at the needed moment mitigates this risk.

5.3. Knowledge sharing

Knowledge transfer involves the sharing of experience, expertise, know-how, and learning from one member of the network to another (Christopher and Gaudenzi, 2009). Since each organization has only limited knowledge and resources to leverage knowledge, the sharing of knowledge is essential for the development of new products, services and practices (Easterby-Smith et al., 2008). Therefore, knowledge sharing can be regarded as a prerequisite of corporate entrepreneurship (intrapreneurship), by its capacity of leading to innovation, which is the core component of intrapreneurship. We can also define the following flow of actions, ensuing in an entrepreneurial environment: knowledge transfer enhances communication which presently rapidly develops as the new strategic resource, which generates new ideas thus leading to innovation. For Mintzberg (1973), entrepreneurship is a visionary process, which lies on the foundation of the innovation process. Consequently, the knowledge sharing framework of an institution determines its potential to foster intrapreneurship. We will further present at what extent knowledge sharing is accompanied by risks, also on the background of intrapreneurship, since bearing uncertainties and risks, along with forecasting them, stand as a second factor that defines entrepreneurship, apart from innovation.

The middle managers interviewed reached a quick consensus on the following aspect: While knowledge sharing fosters communication and collaboration among people, thus constructing the new key strategic resource – resourceful human interactions, the process is also endowed with inherent risks. “The improper sharing of knowledge and a loss of knowledge during transfer can have disastrous results (Hackney et al., 2008).” Toledano, Urbano and Bernadich (2010) regard collaboration as a process that emerges from interactions among individuals in order to develop entrepreneurial actions within established firms. Since human interactions derive from knowledge sharing, lack of collaboration is seen

not only as a factor to foster intrapreneurship but also a knowledge tool to reduce the knowledge risks inside the organization.

Knowledge sharing improves the innovation performance of a firm (Hurmelinna-Laukkanen, 2011). In this context, managing knowledge sharing risks enables the creation of a business platform that supports innovation and embraces risks, both prerequisites for intrapreneuring. Because knowledge is personalized, in order for an individual's or a group's knowledge to be useful for others, it must be expressed and communicated in such a manner as to be interpretable by the receivers. Also, hoards of information are of little value (Alavi and Leidner, 2001). Hence, two issues were raised to the managers interviewed, in the knowledge transfer process: the utility of knowledge sent and the appropriateness of communication method.

Trkman and Desouza (2011) address the issue of knowledge risks in a comprehensive way. They state that a critical challenge organizations face is how to manage the risks associated with knowledge sharing. It is a question of volume of knowledge transferred, balancing between too much and too little knowledge sharing, and knowing how to protect and secure the knowledge that is being shared in the network.

All the participants to our questionings described how the development of employees provides the key to mitigate the risks of knowledge sharing. They highlighted that if employees understand their role in the business process, it is more likely that they will realize when/if the benefits of knowledge sharing exceed the risks. An increase of training costs should lead to lower transaction costs of every-day sharing (Trkman and Desouza, 2011).

Our interviews suggested that not being able to access necessary knowledge is a risk, therefore diffusion of knowledge is critical. Several managers perceived the lack of organizational culture as a knowledge risk, since a solid defined identity of the organization is a requirement for the knowledge sharing frame. The analysis of Arntzen and Worasinchai (2012) highlights that the top important organizational factors hampering the knowledge sharing concerns the lack of rewarding mechanisms, followed by leaders' reluctance to share knowledge and the fact that the company doesn't share the outcome or best practices from knowledge sharing. The importance of the subject was also pointed out by thirty of our experts interviewed. They perceive the lack of organizational culture as a major barrier for knowledge sharing. In order to avoid this danger, they stated that company needs to build a culture of communication and collaboration, people exchanging permanently ideas, documents and best practices and taking risks rationally. The enhancement of a strong leadership culture, whose visions and strategic

goals are transparently shared throughout the company is a strong instrument to limit the knowledge sharing barriers.

In support to our results obtained through the banking workshops, Assefa, Garfield and Meshesha study (2012) illustrates how organizational culture affects knowledge sharing: (1) It shapes individual belief and interpretation towards knowledge sharing. If the organization has a knowledge sharing culture, employees will not hoard their knowledge to get personal benefits. When they share their knowledge, they know that others will also do the same thing. (2) It creates a context for social interactions. An organization that promotes knowledge sharing creates different social interaction contexts such as team work, meetings, reward systems, technological infrastructure and get together that leverage knowledge sharing among its members.

The risk avoidance culture of the Bank hinders employees' creativity and innovation. Unless there is instruction from top management, employees don't take risks to try new things outside approved procedures. Employees are blamed for making mistakes but they are not rewarded for creating new things. (Assefa, Garfield and Meshesha, 2012).

Fischer (2001) highlights that knowledge is performed by individuals, not by the organisation itself. If the knowledge can't be shared with others or is not amplified at the group level, the knowledge does not move up to the organisational level. As stated by the majority of our respondents, the lack of communication as enabler of knowledge sharing is thus perceived as a knowledge risk. The lack of knowledge integration of individual knowledge endangers the ability of the organisation as a whole to efficiently manipulate knowledge in the benefit of competitive advantage. One manager expressed a convincing assertion: "Even if individual knowledge fosters individual knowledge creation which leads to new idea generation, the facet of individual knowledge development is a false path to intrapreneuring, since only through knowledge integration there can be knowledge synergies that foster intrapreneurship."

In big organizations employees might be less willing to share knowledge due to the "safety mentality" and competition between individuals (Brunold and Durst, 2012). The general perception of all our interviewees were that, in big firms, the lack of trust among employees endangers collaboration, a key strategic resource. Assumptions and rumours also favour a failed knowledge transfer which results in misinterpretation, time lost, minus in productivity and raises a significant ethical doubt among employees – trust. Lack of trust, named by thirteen managers as a knowledge risk, limits the channels of knowledge distribution and highly endangers the efficiency of the organizational knowledge flow, biased by people misconceptions of appropriateness of transparently managing knowledge. They affirmed that

trust empowers the knowledge sharing and acts as an integrator of knowledge processes, while lack of trust favours the development of deadlocks in the course of transferring knowledge with the purpose of gaining competitive advantage. Being regarded as key component in the collective risk taking structure, trust is even more a knowledge sharing incentive and lack of trust a knowledge risk (Park, 2006).

Some interviewees affirmed that knowledge sharing risks may also arise from the diversity of employees that take part in the knowledge transfer and their conflicting interests that may alter the message. This is the expression of a relational risk, which arises because of the fact that stakeholders may have their own individual interests that may conflict with those of other partners. This may result in opportunistic behaviour such as cheating, distorting information or knowledge and appropriating shared resources (Aljafari and Sarnikar, 2010). In order to decrease individual knowledge risks, educating personnel is a key factor in effectively protecting knowledge without limiting the benefits (Norman, 2001). More than 50% of the middle managers we interviewed spoke about the increased necessity of addressing knowledge risks related to the personnel; they also define what knowledge variables are key to the mitigation of these knowledge risks: continuous education and permanent training of employees, a strong retention policy based on motivation incentives and rewards schemes, people empowerment, people understanding of their role to the company's performance.

Assumptions and rumours also favour a failed knowledge transfer which results in misinterpretation, time lost, minus in productivity and raises a significant ethical doubt among employees (Park, 2006). A factor that significantly influences the knowledge sharing in a knowledge intensive company is trust. Lack of trust limits the channels of knowledge distribution and highly endangers the efficiency of the organizational knowledge flow, biased by people misconceptions of appropriateness of transparently managing knowledge. Trust empowers the knowledge sharing and acts as an integrator of knowledge processes, while lack of trust favours the development of deadlocks in the course of transferring knowledge with the purpose of gaining competitive advantage. Being regarded as key component in the collective risk taking structure, trust is even more a knowledge sharing incentive and lack of trust a knowledge risk.

5.4. Knowledge application

An important aspect of the knowledge-based theory of the firm is that the source of competitive advantage resides in the application of the knowledge rather than in the knowledge itself (Alavi and Leidner, 2001). In a parallel approach, entrepreneurship resides in implementing innovation and

proactively risk taking, rather than generating new theoretical ideas and showing a risk appetite. It requires an active dimension in order to succeed.

A major challenge in knowledge application in organizations is the absence of a collective mind and a central memory (Alavi and Leidner, 2001). The authors refer to knowledge integration process as essential to knowledge application in organizations. We observed the majority of convictions of middle managers: the integration of individual knowledge in a bank, in order to build the required products or services and to fulfill the strategic goals, is realized through effective communication and collaborative processes among individuals and teams.

The general view of respondents was that in a continuous changing financial environment, the bank has to be permanently connected to the market dynamics. Alavi and Leidner (2001) specify the risks enhanced by inadequate knowledge application: blindly applying knowledge without appropriate modification to current environment and choosing the wrong codified rules and routines for a specific choice making scenario.

In addition, seven interviewees emphasised that narrow mindedness, resistance to change equal to a mishandling of available knowledge. A decision to voluntarily avoid adaptation to new knowledge translates in the company's refusal to further develop, grow, and innovate. This attitude is exactly opposite to the one found in an entrepreneurial environment, even though awareness of this logic is relatively scarce, as resulted.

5.5. Knowledge loss

The loss of knowledge was named by eighteen managers as a significant knowledge risk. Knowledge loss is also a complex process that involves: forgetting, unlearning, retirement or just leaving the company from different individual or organizational causes. These different activities can be grouped into two main categories: intentional unlearning and unintentional unlearning, and the knowledge loss represent their final result (Bratianu and Orzea, 2011). While intentional unlearning (replacement of obsolete knowledge with new knowledge) has a positive dimension, unintentional unlearning is a significant knowledge risk.

Unlearning can liberate companies from knowledge that hinders the absorption of new knowledge (Kunish, Wolf and Quodt, 2010). In situations where organizations face changing environments it is necessary that the old knowledge represented in the organizational memory be challenged prior to the addition of new knowledge (Akgün et al., 2007). A lack of awareness regarding the benefits of

unlearning leads to a risk that impacts directly on the performance of the company to generate and adopt new ideas, therefore on its entrepreneurial potential.

Unlearning may have an indirect effect on innovation processes by providing support through the use of new technologies and by changing the ways individuals interact or come to interpret things (Acs et al, 2008). Consequently, as stated by eight participants, unlearning stands as a prerequisite of corporate entrepreneurship.

In a knowledge driven environment, firms cannot afford to lose key employees and their expertise particularly against the background that the battle for talents in certain industries will become tougher (Dess and Shaw, 2001). Firms need to take measures to reduce voluntary turnover and enhance employee retention (Hislop, 2005). However, as the retention of organization members is not possible forever, the firm's management should plan for staff replacement in due time (Durst and Wilhelm, 2011b).

A middle manager asserted: "When a key member of the team leaves, key knowledge is lost and irreplaceable". This sums up the general perception that even if explicit knowledge may be available, the lack of key experience and skills cannot replace the loss of unique tacit knowledge. Also, loss of competencies and expertise (leading to repeated mistakes and wrong decisions) (Brunold and Durst, 2012) stand as a solid knowledge risk. These findings draw attention on the shortage of key employees, which concentrate the key knowledge of the organization, as substantial danger for companies, translated into knowledge loss. Secondly, the skills shortage means that these people are more likely than ever to leave, being valuable and open to job offers. The result of this lack of crucial skills and capacity could be "corporate incompetence" (www.knoco.com). The authors of the same website present three ways of addressing that risk: by eliminating the risk, by retaining access to knowledge through retaining access to people, and by retaining the knowledge itself.

Parting from the organizational knowledge dynamics framework proposed by Bratianu and Orzea (2011), structured along the three knowledge processes (knowledge creation, acquisition and loss) and with the help of expert judgements of people we have interviewed, we have defined backwards the risks entailing knowledge processes in regards to knowledge loss: (1) poor recruitment of personnel, unsuited to the strategic goals of the company; (2) lack of continuous learning, unavailability of training programs; (3) inexistence of a motivation system inside the organization; (4) inexistence of physical learning support: books, journals, software and other informative materials. The banking middle managers all agreed that the most influential knowledge variable on the loss of key knowledge in an institution would be continuous education and permanent training of personnel. Furthermore, the

people's empowerment grants responsibility and authority increasing significantly the potential of a company to foster an intrapreneurial environment.

6. Conclusions, limitations and further research

This paper has extended previous scarce research on knowledge risks, proposing a framework of classifying these risks in an intrapreneurial environment. We conducted our analysis on the business background of ten Romanian banking institutions, with the inputs of middle managers who gathered, in our opinion, the most relevant knowledge necessary to support our study. Following our research, considering the discussions during interviews and workshops with experts in the banking field, we have succeeded to validate our two basic assumptions formulated at the beginning at our analysis: an efficient management and mitigation of knowledge risks is a critical factor that fosters intrapreneurship in an institution and, second, a decrease in the level of knowledge risks acts positively upon the potential of a company to build an intrapreneurial climate. All thirty-eight middle managers reached consensus on the current need to increase awareness on the magnitude and impact of knowledge risks, which is highly correlated to the innovative potential of an institution.

Many factors influencing the intrapreneurial dimension came up during our research, since the extended business experience of our subjects provided us with specific examples. However, there were five variables which were exemplified repeatedly and which moulded perfectly on the knowledge variables we proposed as having the greatest influence of mitigating knowledge risks: efficient communication and collaboration among stakeholders in the knowledge processes, the creation of a climate of trust inside the company, the building of a strong organizational culture, the establishment of a rewards programme for innovative employees, people's empowerment through continuous education, training and trust. From all these knowledge variables, transparent communication of knowledge, goals, strategies was perceived and specifically named by all middle managers involved in our study as the main driver for knowledge creation, sharing, storage and application, and a key factor to foster intrapreneurship in a banking institution. They asserted that limited or poor communication among individuals can be a barrier for implementation of a solid risk management practice and for achieving the strategic goals the organization defined. For that reason, we affirm that poor or lack of communication is the most significant knowledge risk.

The limitations of our study were given by the high degree of subjectivity of middle managers judgments and that our analysis was set in the limited background of a single industry, namely the banking industry. Furthermore, a quantitative study would be needed in order to verify our findings, currently

limited by the qualitative research we have conducted. We thus recommend further research on the subject of knowledge risks by expanding the number of organizations investigated in the banking industry and furthermore examining the findings in other service sector industries. We also consider a subject for further research the integration of the risk management process with the knowledge processes presented in our study, analyzing the increased potential for innovation of the integrated model.

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