Turun yliopisto
University of Turku

BALANCING CREATIVITY AND RISK INTELLIGENCE IN PROFESSIONAL KNOWLEDGE-INTENSIVE BUSINESS SERVICES

Master´s Thesis
in International Business

Author:
Mariia Siniagina
506507

Supervisors:
Ph.D. Elina Pelto
M.Sc. Katja Einola

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1 INTRODUCTION

1.1 Knowledge-intensive business service (KIBS) industry

Knowledge-intensive business services (KIBS) are vital to the economic development, especially in developed countries. Knowledge-intensive firms utilize their knowledge in order to create knowledge services for their customers (Nurmi 1998, 26). Apart from being of utmost importance to the business success in general, knowledge is a specific type of business resource, which is an infinite and generative asset. Knowledge is the core element of every upfront industry in the world, every technology and every dynamic capability. Managing knowledge-intensive business services is a significant challenge and endeavor. But despite their economic and entrepreneurial importance, KIBS companies have received only limited attention in research. (Freiling 2009b, 2–3.)

In order to analyze the internal processes and challenging environment of the knowledge-intensive business services companies deeper, it is important to define the characteristics and peculiarities of such business. According to Bettencourt, Ostrom, Brown & Roundtree (2002, 100), KIBS companies are "enterprises whose primary value-added activities consist of the accumulation, creation, or dissemination of knowledge for the purpose of developing a customized service or product solution to satisfy the client's needs".

Majority of KIBS companies concentrate in the urban areas, which is explained by availability of professional skillful employees, access to technology and a bigger, more diverse market (McCann & Oxley 2013, 89). KIBS constitute a core of knowledge economy that aims generating tangible and intangible values (Miles et al., 1995; Muller & Zenker 2001; Muller & Doloreux 2009). Some classifications distinguish between two types of KIBS companies: P-KIBS – purely professional – and T-KIBS – with a technological base (Miles, Kastrinos, Flanagan, Bilderbeek, den Hertog, Huntink & Bouman 1995, 4). This study focuses primarily on the P-KIBS firms, which are generally more traditional business services, such as legal, management and marketing consultancy. These companies use their professional knowledge to offer services which provide their clients with desired solutions.

In order to understand what is special about P-KIBS companies, it is important to consider their three fundamental elements: human capital professional quality, sources of knowledge and business-to-business clients (Muller & Doloreux 2009).The essence of a professional knowledge-intensive service conceals in people managing it. Being creative and innovative when working on a project is as important as planning and meeting deadlines. Knowledge and experience are the two building blocks of business concept in a P-KIBS company. Knowledge advantage determines and defines business

success. (Freiling 2009b, 11.) Imaginative company in a service business context seeks for right balance between creativity management, knowledge management and innovation management in order to ensure continuous access to new knowledge and creative ideas. Innovation plays a primary role especially in knowledge-based and highly-competitive environments (Johannessen, Olsen & Lumpkin 2011, 29). It defines potential firm performance and fosters business development. At the same time the success of a new service itself is largely dependent on creativity flow in organization. Creativity constitutes a foundation for innovation process in the company (Amabile 1998; Rodrigues & Veloso 2013). Since any innovation requires and begins with creative ideas, creativity becomes an essential integral part of service development. (Giannopoulou, Gryszkiewicz & Barlatier 2014, 23–24.)

P-KIBS companies tend to face a wide range of uncertainties they should manage and estimate. These uncertainties are inevitable since services are unique and temporarily undertakings are based on assumptions in the demanding environment. Consequently, the competitiveness of such company is hard to keep up. Business offerings outdate faster in knowledge-intensive service industry than in any other, so that learning and exploration become professionally and strategically critical for surviving. (Freiling 2009a, 2.)

Clients of P-KIBS companies seek for creative solutions for their innovation activities, so that P-KIBS face the challenge of combining knowledge management and creativity processes in order to achieve business efficiency and avoid possible risks. In order to achieve and maintain the target level of service quality P-KIBS companies need to invest in resource development strategically outlined by the management team. In these firms, knowledge flows along with creativity through socialization and face-to-face interaction of employees. Advanced knowledge and creativity management guarantee a cognitive alignment of the human resources involved in the creative process, which enables the pursuit of strategic direction outlined by the managers, sustaining competitive advantage and ensuring brand positioning. (Bettiol, Di Maria & Grandinetti 2012, 559.)

The most significant success factors in a P-KIBS company are the dominance of knowledge and creativity flow. Other relevant criteria include high intellectual professional skills to manage the firm's operations, the focus on decision-making and problem-solving mechanisms, the high degree of differentiation of value-added services supported by high degree of interaction between the company and their customers. The environment which knowledge-intensive company operates in can be characterized by high level of uncertainty which leads to implementing risk management techniques in business strategy. (Freiling 2009b, 9.) Managing risks in innovative projects in knowledge-intensive environment is a challenging task which requires balancing opportunities and limits. Risk management implementation brings benefits as well as detriments, that is why it is important to understand to what extent this impact is significant,

why managers need to set out their priorities and how they should estimate the nature of this correlation in dynamics.

1.2 Knowledge gap and purpose of the study

It is essential for a KIBS company to sustain innovation flow and creative thinking. These elements not only employ in R&D department, but appear to be in every part of the company. Truly innovative companies focus on creativity within every action (Amabile 1998, 78). But in order to implement creative approach and apply its outcomes successfully, it is necessary to analyze risks these outcomes may cause. A significant challenge hides in choosing reasonable ways of implementing risk management, which will not limit creative ability in organization, and furthermore will contribute to the process. This choice is related to a *risk intelligent approach*, or *risk intelligence*, the term that will be reviewed and analyzed deeper in the latter parts of the study (Apgar 2006, 3; 20–21; Leo Tilman 2012; Deloitte 2013, 4).

On a theoretical level the field of managing both creativity and risk intelligence as a balanced process remains understudied in particular within KIBS industry. There is a certain gap in the research related to combining both sets of theories: creativity fostering techniques and risk intelligent approach towards risk management system implementation. For instance, there appears to be a wide range of separate models for innovation and risk management, but very little discussion in terms of trying to find the right balance between them (Ojasalo 2008, 212; Bowers & Khorakian 2014, 25). This study will help to shed light on the importance of well-managed combination of these different issues, sometimes considered to be mutually exclusive.

The research purpose of the present study is *to find out how the balance between creativity and risk intelligence can be managed in P-KIBS*. The methodological approach utilized in the study is strictly conceptual without empirical aspects. Therefore, the body of the report is constituted from existing theoretical discussion analysis, aiming to reshape and combine existing theories to fit into the studied context and explain the problem theoretically. As long as research questions are meant to specify the research purpose, in the first place it is important to investigate the building blocks of the balance between creativity and risk intelligence. There is no doubt that the whole process of managing knowledge-intensive services deals with financial, operational and strategic risks. That is why it is reasonable to apply risk management techniques and frameworks in this context. However, the main strength of a P-KIBS company is creativity which needs to be fostered, maintained and supported. That is why a risk intelligent approach becomes a justified way of finding the right balance. It does not aim to estimate and avoid all the possible risks and threats, but it analyzes and prioritizes the

risks in order to choose the ones which will enhance productivity and overall performance.

Therefore, the research supporting questions are formulated as follows:

1. *What are the characteristics and role of creativity as a component of innovation process in a P-KIBS company?*
2. *What are the characteristics and role of risk intelligence as an approach towards risk management process implementation in a P-KIBS company?*
3. *How can risk intelligence and creativity be balanced in P-KIBS?*

There are various risk management frameworks, which describe an approach for identifying, analyzing, responding to, and monitoring risks and opportunities, within the internal and external environment facing the enterprise. In the context of managing an innovative P-KIBS company business growth, it is obvious that not all of them can be easily and efficiently carried out in such a company, while keeping creativity flow at high rate. That is why it is important to analyze existing frameworks, combine them and propose a commonly appropriate framework for utilizing not only risk management methods, but also a risk intelligent approach as critical management issue for developing P-KIBS company strategy. While holding a research within the angle of P-KIBS companies, the risk intelligence implementation challenges will be analyzed from the point of view of sustaining creativity development in the organization. The structure of the report is discussed in detail in the next subchapter.

1.3 Structure of the study

This section is meant as guidance through the logic of the study, structuring the theoretical and conceptual patterns. Research questions are being answered gradually throughout the study, as presented graphically in Figure 1. The third and the fourth chapters answer the first and the second research questions respectively, introducing innovation and risk management process frameworks and discussions on the topic. The chapters reveal the potential of both sets of theories and highlight the most important aspects, which are going to be used further in the last chapter. The theoretical background of the study is compiled from various sources using systematic literature review method and results in a combined framework suggested for further empirical testing and managerial and entrepreneurial utilization.

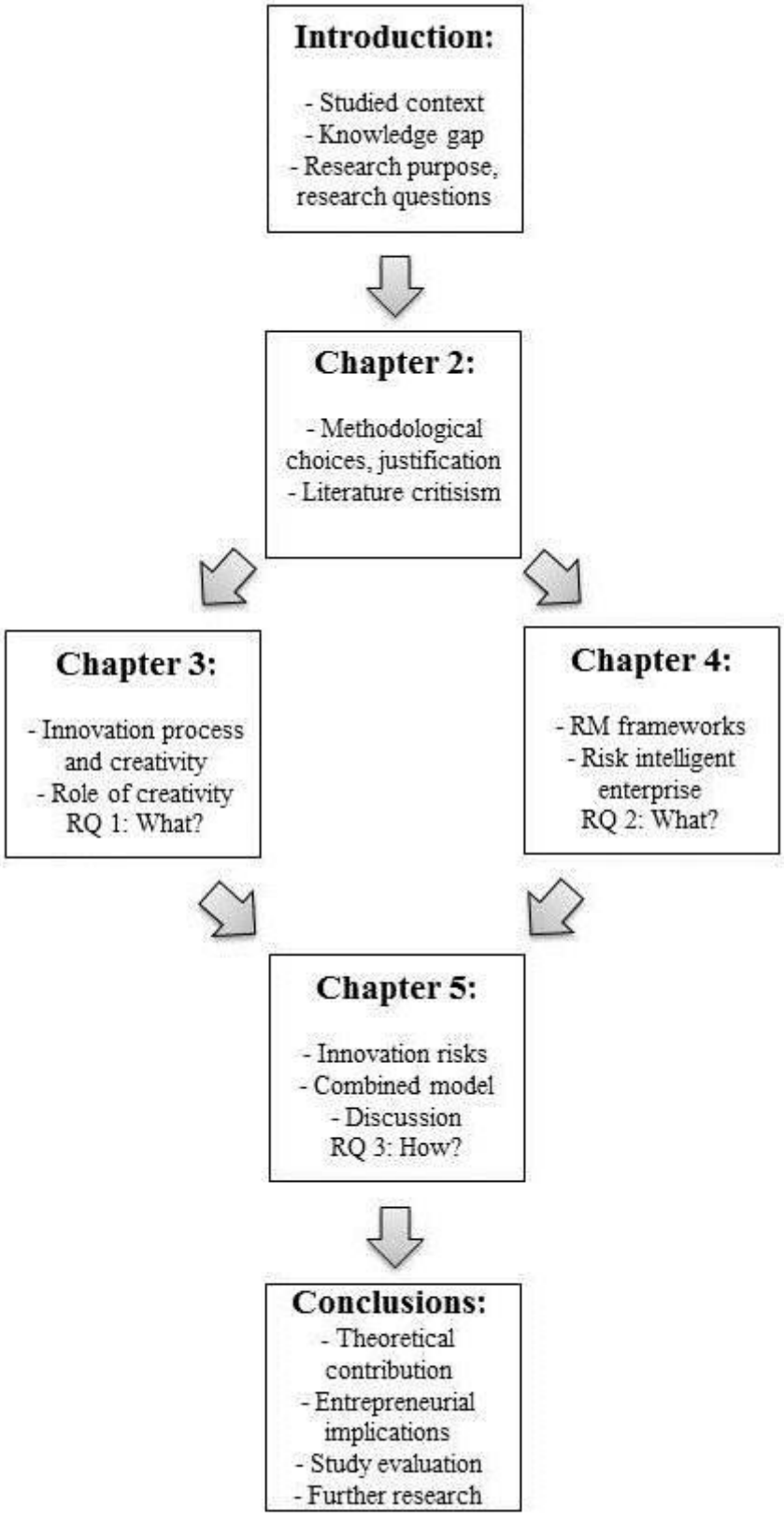

Figure 1. Structure of the study

As seen in Figure 1, the studied context and the main theoretical background are revealed in the *introduction*. The chapter focused on defining the knowledge gap and setting research purpose and research questions. The *second* chapter introduces the methodology used to explore the research gap. It serves to justify the choice of theory building through conceptual methods as being the most appropriate to answer the research questions. The *third* chapter reveals the significance of creativity process in knowledge-intensive environment. It provides explicit discussion about the role of creative ability in organization, its place in innovation process and the ways to manage it. In the *fourth* chapter, risk intelligence is introduced as a risk management approach. Diverse risk management frameworks are viewed from the angle of P-KIBS companies. The *fifth* chapter focuses on understudied research areas and synthesizes the existing knowledge. It brings along both sets of theories, studied models and proposes a combined framework for managerial utilization. The framework consists of the main studied concepts and introduces different interrelations between them. The discussion is followed by an extensive description and explanation of the stages and roles of actors in organization.

Finally, the *conclusions* are presented in the last chapter, including entrepreneurial and managerial implications, limitations of the study and suggestions for further research. Notably, in the last parts of the report, analyses and conclusions prevail over theoretical discussions occurring in the first chapters. This ensures the adequate logic flow throughout the report and brings the reader to the *summary* of the study.

2 RESEARCH METHODOLOGY AND DESIGN

2.1 Theory building through conceptual methods

Conceptual research methods deal with descriptive, explanatory investigation. They are very effective in terms of increasing validity of research implications, being especially relevant for drawing managerial conclusions and propositions. (Meredith 1992, 4.) Methodological choice for the current study is justified by the above mentioned statement, as the study aims to provide a value-added contribution to the existing theoretical basis on the topic.

To understand the essence and purpose of theory it is useful to define the term. A *theory* is used as an explanatory tool for organizing complexity of concrete events and communicating it to observers. It draws relations between a set of constraints within assumed boundaries of values, time and space. (Bacharach 1989, 496.) The common element of the theory building process is learning. It is important for the present study to use the learning potential of the new theory as a result of applying it under different contexts and conditions. (Whetten 1989, 493.)

Theory construction in this study is based on relationships between target units that have been approximated. Approximated units are usually called constructs, which by their nature cannot be observed directly, while variables are the units that can be both observed and measured. Theory presented in the current report answers the questions of *how, what, why* and *when*, and can be viewed as a system of related constructs and variables, built inside context boundaries. (Bacharach 1989, 498.) As all conceptual theories are derived from literature investigation, this study explores theoretical research, which allows it drawing the interconnections between concepts. A new theory expands the existing knowledge, contributing to different theories integration. The more theories and concepts have been integrated into a new theory, the more advanced and explanatory the theory is. (Wacker 2008, 9–11.)

A quality of the introduced theory is a significant endeavor and a major goal of any conceptual study. To make a significant impact, the current study considers Dubin's five requirements for a valuable theory (1969) as initial guidelines. A good theory is expected:

- to develop understanding about certain events
- to bring novelty to the existing knowledge
- to demonstrate interactions between different variables
- not to include undefined elements or composite variables, consisting of a number of other variables
- to include limitations and context criteria.

These characteristics are being addressed throughout the theory building process. These requirements serve as final criteria in the latter parts of the present study for evaluating a study itself, its value-added contribution through the proposed framework and other essential characteristics (see subchapter 6.3).

Regarding theoretical quality, there are several perspectives, from which the present study is analyzed from. Theories differ in the level of *generalizability* they can be utilized within. In order to reach a higher level, theory requires a higher level of *abstraction*, therefore, sacrificing the level of detalization and specification needed to fit certain situations. Consequently, cumulative body of research can be only formed using generalizable, abstract and broad theories, while detailed elaborate studies do not provide sufficient critical basis, being strictly bound in time and space. (Bacharach 1989, 500; Ketchen & Hult 2011, 14–15.) Generalizability and abstractness are two leading properties determining the nature of the theory. The first one defines the extent to which the theory can be applied to diverse contexts. Abstractness dictates theory's specific application space and time requirements, inevitably limiting its effected areas. (Wacker 2008, 10.) These characteristics do not necessarily increase the quality of the theory, but they define a theorist's objectives and incentives by serving as blueprints and designing theory building methods and tools.

Another point of view on analyzing theoretical quality deals with an even wider range of theoretical features. A "postulate of commensurate complexity" introduced by Thorngate in 1976, claims that a theory cannot be simultaneously generalizable, accurate and simple. All three characteristics are important goals for theorists, however, a theory is highly unlikely to respond to all three properties, while majority of theories serve only one of them. A postulate claims that:

1. "The more general a simple theory, the less accurate it is"
2. "The more accurate a simple theory, the less general it is". (Thorngate 1976, 405–406.)

It means that achieving contextually specific accuracy is difficult enough when targeting a high level of generalizability, and vice versa. However, in the case when a theory is very explicit and general, having the power to be applied to different certain contexts, such theory is no longer simple enough. Therefore, a perfect balance of any two characteristics will effectively constitute a good theory. (Thorngate 1976, 406.) Similarly, the current conceptual study targets to achieve balance between two characteristics: *simplicity and accuracy*, which effectively results in the poor level of generalizability.

The mentioned insights find their reflection in the Figure 2, portraying the essential elements of the theory that is being built in the present study. It is based on the theory building framework introduced by Bacharach (1989) and presenting the main components of the theory (its constructs and variables), their interconnections, contextual limi-

tations of the theory and level of generalizability, which in this particular case stays low.

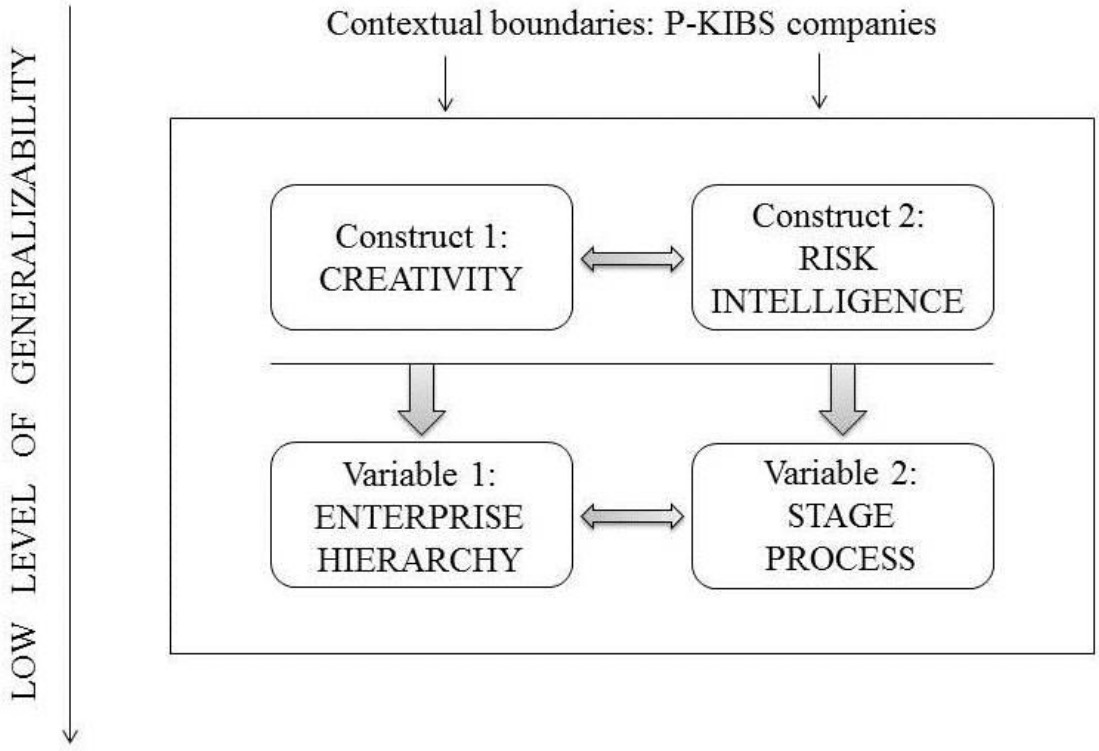

Figure 2. Components of the current theory (based on Bacharach 1989, 499)

The *constructs* of the current theory, as seen in Figure 2, are creativity on one hand and risk intelligence on the other hand. They are defined and explained throughout the study by comparing points of view of different authors, engaging the reader into the conceptual discussion. Later on, these constructs are analyzed in the context of KIBS industry, moreover, specifically in the context of P-KIBS companies. The balance between creativity and risk intelligence is seen through the prism of the new service idea implementation process in P-KIBS, which appears to be bond with both innovation and risk simultaneously. Further theoretical constructs are breaking down into smaller elements of the proposed stage process which is driven by the correlation between two independent *variables*: enterprise hierarchy and stage process. The first one seeks for diversity of roles among the enterprise levels, while the second one reflects their gradual progress aligned with time. Both constructs and variables have impact on each other, shaping the complex relationship between them.

Taking into consideration a narrow and accurate context, the level of generalizability of the built theory is likely to be rather low, while simplicity level is rather high. It makes the theory less abstract and more specific, therefore, it opens more perspectives for direct managerial and entrepreneurial utilization. It may not have a great impact on

other theories with shared constructs or variables, but it provides clear insights and solutions for certain problems in the target industry. In addition, specifying certain time and space boundaries of the theory ensures the meaningful measurement of constructs, which makes it impossible to falsify them, and hence, the whole theory (Bacharach 1989, 502).

Apart from generalizability, simplicity, accuracy and abstractness many researchers (e.g. Popper 1959; Nagel 1961; Hempel 1965) agree on other two primary criteria upon which any theory can be evaluated. They are *falsifiability* and *utility*. Falsifiability refers to the possibility of empirical proof. However, most philosophers (e.g. Popper 1959; Nagel 1961; Bacharach 1989) agree that majority of the theories can only be disproved by experience rather than proved. Utility on the other hand determines the usefulness of a theory, explaining the linkage between constructs and variables, and comparing it with the empirical evidence. What makes a theory complete is not only accepting propositions, but also providing adequate explanations for them and making relationship assumptions, as can be seen in the present study. (Bacharach 1989, 500–501.)

The current study aims to identify and distinguish elements of the theory, to describe their interactions extensively and to map the relevant variables using existing literature research. This attempt serves as an additional requirement for a good theory. (Naumann 1984, 570.) However, it is essential not only to get familiar with theory building objectives, but also its methods and research tools which differ dramatically according to the purpose and essence of the theory. In order to determine a theory building process methodology for the present study, it is useful to distinguish a type of theory being created. According to Meredith (1993, 5) conceptual research consists of seven distinct types of conceptual research methods, as seen from Table 1:

Table 1. Types of conceptual methods (Meredith 1993, 5)

Conceptual models: 1. Conceptual description 2. Taxonomies and typologies 3. Philosophical conceptualization
Conceptual frameworks: 4. Conceptual induction 5. Conceptual deduction 6. Conceptual systems
Theories: *7. Meta-frameworks*

The first three methods listed in Table 1 are basic conceptual models, consisting of "a set of concepts, with or without propositions, used to represent or describe (but not explain) an event, object and process" (Meredith 1992, 5). The second group of methods include conceptual frameworks, which sum up two or more explanatory propositions linked with each other in order to provide better understanding. Finally, the last type of conceptual research methods is meta-frameworks which deal with the final conceptual research goal – theory. Theory is a set of interrelated constructs used as means of understanding an event. (Meredith 1992, 7.)

Based on Dubin's requirements for a good theory (1969) and on Meredith's classification (1993, 5), neither of the requirements is failed by the theory introduced in the present study and therefore, it is distinguished as a meta-framework. Meredith states (1992, 10) that a meta-framework is a compilation of diverse existing theories or conceptual frameworks, using their interrelations as major principles of explaining and understanding. It may as well be a rather straightforward theoretical contribution, but it always has to meet all of the Dubin's five requirements (see page 11). A meta-framework becomes an ideal conceptual definition for this study; hence, a systematic literature review is a main investigation tool for collecting necessary information, explaining constructs and variables and defining theoretical boundaries through conceptual analysis. In order to proceed with its development it is important to list the essential rules and guidelines for building a meta-framework.

2.2 Building a meta-framework

Theorizing via building a meta-framework involves thorough exploration of the concepts and combining them in a creative way (Fisher 2010, 153). Therefore, the present study seeks to theorize strategic components in the studied context. The new theory contributes to the problem-solving, decision-making and knowledge creation processes in organization, specifically in knowledge-intensive business services. (Mahoney & Sanchez 2004, 43–44.) A meta-framework possesses a powerful capacity to synthesize multiple theories. In this sense the conceptual research findings of this study are valuable for systematizing existing knowledge and ensuring its reliability. Building a meta-framework suggests its future testing and utilization. It represents a *theory-in-use* which describes human actions and organizational principles, observing, guiding through and clarifying the process. (Chermack 2007, 7–9.)

There are several theory-building approaches (or paradigms) that vary in their goals and methods, and thus, affect the whole theory building process: interpretivist, radical humanist, radical structuralist and functionalist paradigms. These approaches treat the same issues in a different way. The *interpretivist* paradigm generates descriptions and

explanations of the situations, revealing structural and organizational processes. Interpretive theory tends to be inductive. The second paradigm – *radical humanist* – has a more critical nature with the intent of examining and changing the existing organizational structure. *Radical structuralist* paradigm reveals the motive of transforming organizational ideology by utilizing relevant argumentation and emphasizing historical evidence. Its efforts arise around structural features changes and their implications. Finally, a *functionalist* paradigm seeks to examine relationships, causation and interconnections between different elements and concepts leading to further theorizing. Such theory carries a significant entrepreneurial orientation and aims to alter managerial perspective and maintenance. (Gioia & Pitre 1990, 588–590.)

The meta-framework designed in the current study better responds to the characteristics of the latter one – the functionalist paradigm. It defines actual interrelations and studies them rationally through science. However, functionalist paradigm believes in understanding of organizational behavior through hypothesis testing, which current conceptual study does not include (Burrell & Morgan 1979, 26–28). The study is developed according to the principles of functionalist paradigm. Positioning the study in the theoretical research is an important step towards advancing the theory and ensuring its quality.

There are three stages of building a meta-framework in a conceptual study. The current report follows these stages specifically paying attention to the results and implications of each stage. The *first stage* deals with clarifying the concepts and defining the main terms. Three key elements of the study are the subject of the study, the main goal and the method of achieving this goal. By identifying the research path, the study obtains its shape and structure. As long as this study seeks to find the balance between two concepts in a particular context, the research is being developed gradually, bringing simpler terms to a more advanced level as the study progresses. The *second stage* focuses on interconnections between different elements and describes their relationships (see Figure 2). It acquires the knowledge gathered from the systematic literature review (see subchapter 2.3), criticizes and evaluates it and draws essential conclusions. The outcome of this stage represents a major conceptual basis that ensures the potential shift from confusion to certainty and from questions to answers. Finally, the *third stage* utilizes the insights from the previous stage to develop a brand new theory (a new theoretical framework) aiming to explain the patterns and connections that posed questions before the study has been conducted. (Fisher 2010, 134.)

A theoretical meta-framework in the end of this study represents a stage process model based on logic and proper order. The sequence and role distribution are essential. (Fisher 2010, 142.) The basic tool for conducting current study is a systematic critical literature review, the objectives, methods and peculiarities of which are discussed in detail throughout the next subchapter.

2.3 Systematic critical literature review

The initial intention of a literature review is to provide a comprehensive understanding on the earlier works on the general and specific topics considered in the study. By challenging previous findings and ideas, researchers attempt to improve existing theory. The more thorough and systematic the literature review is, the more solid and relevant the conducted research implications are. Furthermore, it is important to keep the literature review long enough to cover the topic and short enough to remain it exciting for the reader. (Berg 2004, 305–306.) Literature source criticism and selection is the tool of 'framing' the study topic. With an approach grounded in learning from experts and other researchers, this conceptual study incorporates a strong literature background. (Creswell 2003, 30–32.)

The present review illustrates the current knowledge accessed and explored mostly with the use of the secondary literature sources, such as journals, conference papers and reports were also utilized. Books and journals represent a wide range of valuable materials, appearing in electronic and paper form, while conference papers cover rather specific themes and are distinguished by wealth of relevant information. (Saunders, Lewis & Thornhill 2003, 50–54.)

In order to determine reliability of the sources, the literature review is primarily comprised of peer-reviewed academic journals. It means that two or more experts in the field have approved the materials before the publication. Journals are the main source for this conceptual study. They provide detailed research reports written by recognized academics ensuring quality and suitability. A few academic books and valuable material found solely on the Web have been used in this study, although were not being heavily relied upon. (Fisher 2010, 94–96; Saunders & Lewis 2012, 37.)

While investigating the literature sources, the primary focus was given to the electronic library and notable electronic academic databases covering areas of business and management, such as Emerald, ABI/INFORM Global (ProQuest) and Business Source Complete (EBSCO) (Fisher 2010, 99). The key words for using databases were drawn from the research topic, potential areas of theory development and the target literature, including both broad and narrow concepts, synonyms and alternative spellings. Evaluating the usefulness of the found materials was the next step leading to complete critical literature review. (Saunders & Lewis 2012, 39.) It is essential to base the study on key thought-through materials, identifying their limitations and weaknesses, as well as their strong profound argumentation (Fisher 2010, 93).

The logic behind mapping and building the literature review emerged from the search of theoretical models created previously which received certain academic and managerial attention. Further theoretical research expanded the discussion towards identifying particular existing gaps and possible solutions. Comparison of different models

and frameworks and their critical examination served this mission. Contrasting different perspectives and points of view helped to develop the study to a more advanced level.

A literature review is required to be critical which means that it needs to ensure validity of concepts and theories brought as a study foundation. It investigates important up-to-date discussion on the chosen topic and answers the research questions with valid evidence. (Fisher 2010, 92; Saunders & Lewis 2012, 31.) The current study is systematized in a way that existing relevant literature is presented in a series of chapters in order to contextualize and justify the research. Theoretical discussion on each of the main concepts begins from introducing general overview before narrowing it down to the context and to research objectives. An essential part of a systematic literature review is its structure organized logically while developing a coherent research, as well as its summaries for every separate theme that highlight, compare and contrast major insights. (Saunders & Lewis 2012, 51–53.)

The first block of literature review and therefore, relevant theoretical discussion deals with role of creativity and ways of sustaining its presence in a P-KIBS company. The discussion is opened by defining key terms and positioning KIBS companies in innovative organizations grid, proceeding to the overview of different approaches towards innovation models building. Later on creativity is analyzed as being a major component of innovation and described from the point of view of professional knowledge-intensive industry. The next chapter identifies differences between traditional risk management and risk intelligence, presenting and critically evaluating existing risk management models and frameworks in order to find a suitable fit for P-KIBS companies. Finally, the last chapter introduces the recent discussion on the problem of combining risk management and creativity suggesting a framework as a potential solution.

3 SUSTAINING CREATIVE ABILITY IN P-KIBS

This chapter is designed to answer the first research question '*What are the characteristics and role of creativity as a component of innovation process in a P-KIBS company*'. It explores the role and the nature of creativity as a part of innovation process in a P-KIBS company. Therefore, at the beginning it is essential to define the main concepts the chapter deals with.

3.1 Overview of innovation in business

In order to create and sustain competitive advantage and to achieve business success companies need to innovate (Johannessen et al. 2011, 21). The word *'innovation'* is derived from the Latin 'innovare' which means 'to make new'. Innovation can refer to any new object, idea or system targeting value creation, competitiveness increase and profitability. (Goodman & Dingli 2013, 167.) Schumpeter (1934) was the first theorist who defined innovation as a process. He argued that innovation "is the introduction of new products, the introduction of new method of production, the opening of a new market, the conquest of a new source of supply of raw materials and the carrying out of the new organization of any industry" (Schumpeter 1934, 88).

Innovation is currently recognized as a vital driver for organizational survival, development and growth, which ultimate success is affected by the importance of its early stages (Bassiti & Ajhoun 2013, 551). Organizations can be divided into four categories according to the type of innovation generation, as shown in Figure 3: innovation explorers, merchants, architects and missionaries (Chesbrough 2003, 39).

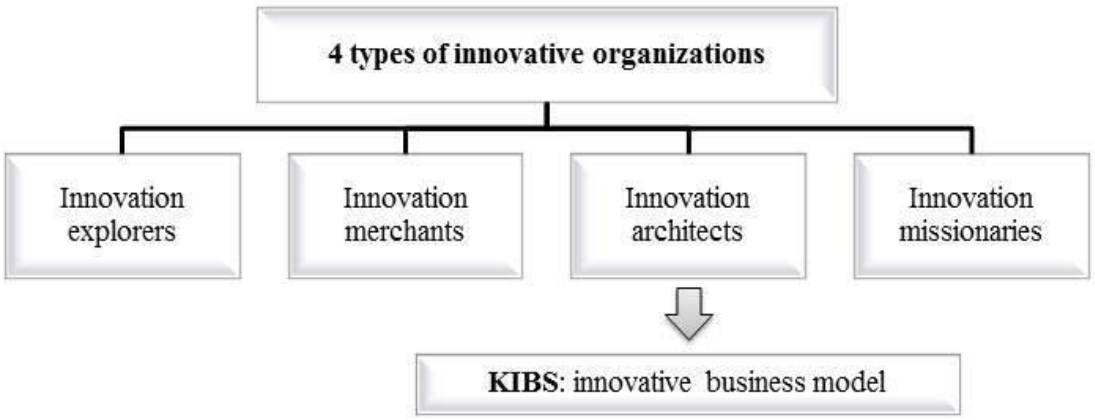

Figure 3. Four types of innovative organizations (based on Chesbrough 2003, 39)

Innovation explorers constitute the first type of innovative organizations introduced in Figure 3. These companies conduct the discovery research function, which expands outside the research and development (R&D) department and becomes a larger part of the organization. *Innovation merchants* focus on a narrow set of issues, harvesting intellectual property and exploring the efficient solutions exclusively to obtain financial goals. *Innovation architects* concentrate their activities around creating and providing complex, specific, valuable services for their customers. *Innovation missionaries* create and advance innovations to serve a cause. Unlike the innovation merchants and architects, they do not seek commercial profits. (Chesbrough 2003, 39.) After analyzing the nature of KIBS companies, it is obvious to relate them to the third type of innovators: innovation architects. They specialize in providing customers with unique service experience which is being created in a complex innovation process.

Companies develop and implement ideas through incorporating innovation processes in order to deliver the core customer-perceived value (Goodman & Dingli 2013, 135). Majority of the innovative firms are driven by the goals of their leaders that target pioneering, product novelty and service sophistication. These goals are rewarding as they attract inventors and customers, developing the company's R&D processes. (Miller 1995, 128.)

In a contemporary business environment an old-fashioned, internally oriented R&D approach is limiting organization potential. Useful knowledge has become accessible and external ideas have become embraced by the idea of open innovation which has revealed new ways of creating value through foreseeing and utilizing new opportunities. Open innovation allows businesses to source the ideas outside the company, decreasing the boundaries between the firm and its environment. (Chesbrough 2003, 41.) Opening the idea creation process allows companies to expand resources from solely in-house focus. External expertise can stimulate services development in P-KIBS companies, however open innovation challenges require careful consideration in terms of what to open and how. (King & Lakhani 2013, 42, 48.) Management teams in P-KIBS companies tend to center business operations in the B2B community which provides diverse human resources possibilities and distribution channels options. Sourcing ideas from the actual business environment is one of the possibilities for open innovation utilization in P-KIBS companies.

Companies commercialize their new ideas, products and services through their business models. While companies may have extensive investments and processes for exploring new ideas and technologies, they often have little opportunity to create an innovative business model. (Chesbrough 2010, 354.) An innovative business structure can be described by three key components. The first peculiarity is *experimentation*. (Chesbrough 2010, 360.) What P-KIBS companies are doing is that they are focusing on the flow of innovation process, as well as on their human resources as their strongest

competence and outstanding competitive advantage. They look out for new market possibilities, maintaining an innovative approach towards firm performance in its business environment.

The second characteristic is *effectuation*. This process can be depicted by the way entrepreneurs react and by decisions they make. They do not analyze the actual environment completely, but they take actions to create new information that further reveals latent possibilities in that environment. Instead of studying current market, they enact it. And finally, the third element is *organizational leadership*. CEO's of small and medium-sized companies are usually responsible for majority of decisions and are in charge of most activities and processes. (Chesbrough 2010, 361–362.)

In order to advance innovativeness, managers need to analyze internal and external factors influencing organizational processes. External factors associated with innovation process include customer-supplier relations, networks, market conditions, and external knowledge infrastructures. Each factor can be profitably managed to create innovative solutions. Internal factors are also potential sources for innovation and creativity. Cultural factors, information, communication and learning processes, internal competencies and the efficient knowledge management can be highlighted among internal factors that are critical for the companies. (Johannessen et al. 2011, 29.)

Conventional product or service development requires companies to seek for new solutions that will better fit their customers' needs. However, the nature of novel breakthrough services is different. Companies look for solutions that have potential to address customers' needs they may not yet realize they have, creating new markets instead of expanding old ones. (Verganti 2011, 117.) Success of the innovation is determined by the control companies hold over it (Chesbrough 2003, 36).

In order to manage creativity in the innovation process managers may apply different stage models. Contemporary research is rich with diverse innovation process models. Bassiti and Ajhoun (2013, 553) have collected the insights from several major theories into one study, which not only introduces the phases of the processes, but also includes sufficient scientific analysis of their merits and drawbacks. The summary based on initial models' description from original sources, as well as analysis made by Bassiti and Ajhoun (2013, 553) is displayed in Table 2. It is important to have a clear idea of the variety of innovation model perspectives that different researchers have. Apart from the similarities in basic elements and ideas behind them, every innovation model has its own peculiarities and differences that distinguish one model from another. The overview and the synthesis of these models are presented below:

Table 2. Variety of innovation process frameworks (based on Bassiti & Ajhoun 2013, 553)

N	Authors	Model	Analysis
1	*New Concept Development Model* (Koen et al. 2001, 47)	1. Opportunity identification 2. Opportunity analysis 3. Idea genesis 4. Idea selection 5. Concept and technology development	- Introduces external influencing factors - Its ”engine” which drives activities is fueled by leadership, culture and strategy - Consists of elements instead of processes emphasizing the iterative and non-linear nature of early stage activities - New process and product development and the commercialization phases
2	*Process Model* (Husig, Kohn & Poskela 2003, 858)	1. Environmental screening - *Opportunity screening* 2. Idea generation - *Idea evaluation* 3. Concept project and business planning - *Go/No-Go for development*	- Gives a representation of continuous activities - Provides structured formalization of early stages - Early stages are followed by gates - Full process is completed with new product and process development and market launch
3	*Idea Fruition Process* (Griffith-Hemans & Grover 2006, 29–33)	1. Idea creation - *Expertise, thinking style, failure value, intrinsic motivation, organizational culture* 2. Idea concretization - *Credibility, access to relevant and diverse knowledge, access to organizational resources, work style* 3. Idea commitment - *Idea visionary, credibility, consequences of creation, formal organizational culture*	- An iterative process - Concretization phase seeks making the idea acceptable rather than progressing toward a prototype - Shows that individual idea creator and organizational factors both influence the degrees of creativity, concretization, and commitment

4	*Innovation Value Chain* (Hansen & Birkinshaw 2007, 124)	1. Idea generation - *In-house idea generation* - *Cross-pollination* - *External sourcing* 2. Idea conversion - *Selection* - *Development* 3. Idea diffusion - *Spread*	- Gives a holistic overview of innovation - Presents the major activities which should take place as an idea moves towards market launch - Describes idea generation as an area in which ideas are created or obtained - Highlights the multiple sources of ideas, key questions and key performance indicators, weakest and strongest links
5	*Stage-Gate Model* (Cooper 2008, 216)	- *Discovery* 1. Scoping 2. Build business case 3. Development 4. Testing and validation 5. Launch - *Post-launch review*	- Consists of a set of information-gathering stages followed by decision making points - Helps to eliminate poor projects and fosters organizational development - Seeks to balance risk and expenses
6	*Idea Life Cycle and Communities* (Westerski, Iglesia & Nagle 2011, 496)	Idea campaign organizers + Idea management administrators => Organization 1. Idea generation (community, clients, employees) 2. Idea improvement (community, clients, employees, moderators) 3. Idea selection (reviewers, decision makers, domain experts) 4. Idea implementation (project managers, deployment teams, subcontractors) 5. Idea deployment (deployment teams, clients, partners, feedback)	- Covers the major activities of innovation process - Aims using technologies to interconnect data - Shows the dependencies between the community-created information and the enterprise processes

In order to develop and commercialize ideas, organizations apply different frameworks and approaches, but there is one common trait found in every innovation process model presented above in Table 2: idea generation, or creativity, is considered to be of the utter importance and essential value. Managers need to recognize diversity of levels and types of ideas, required involvement and creative freedom extent. (Kelley & Lee 2010, 1008.) However, managing creativity flow is a complex process that requires re-examining assumptions and re-interpreting facts, ideas and past experience (Bowman & Swart 2007). Innovation process in P-KIBS companies has its own peculiarities: it is commonly organized within the boundaries of a specific project rather than through R&D departments; it is conducted in a close collaboration with clients and highly affected by regulatory bodies and other sorts of regulation in the market. Co-development of innovations with clients among *creativity* and employee *motivation* are vital drivers for business development in the industry. (Miles et al. 1995, 6, 67.). Given the knowledge increase throughout the stages of innovation process development and the high failure rate in innovation, knowledge management in a P-KIBS company is also essential. Among the existing innovation process models (see Table 2), there is one standing out of the entire research due to its specific emphasis on the role of creativity and learning, usually referred as the standard five stage model: creativity, selection, incubation, implementation and learning (Tidd, Bessant & Pavitt 2005, 372). Figure 5 introduces the model of gradual innovation process as follows:

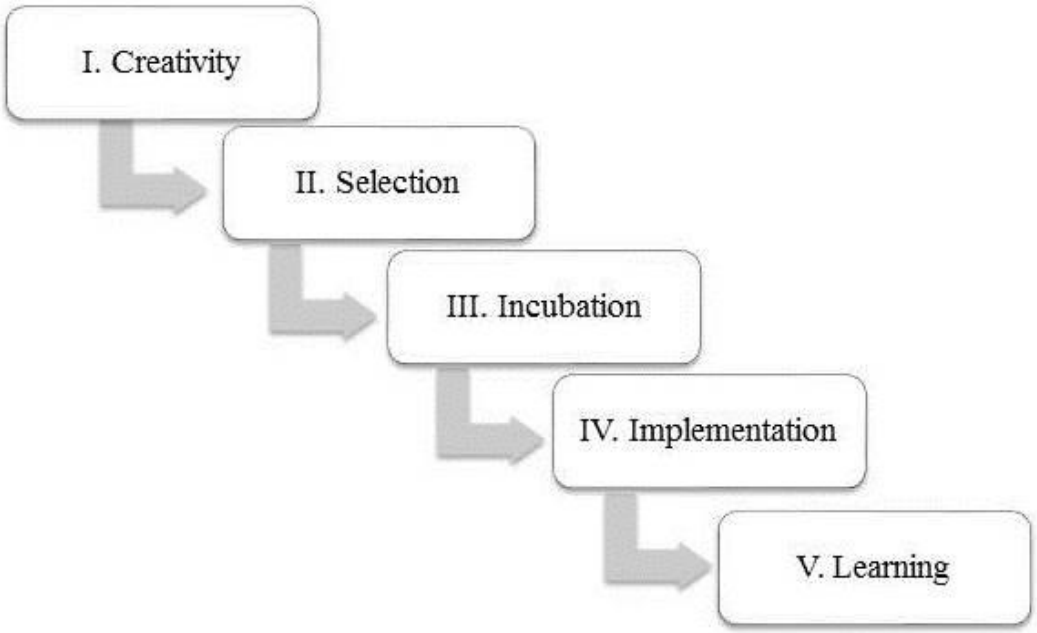

Figure 4. Five stages of innovation process (based on Tidd, Bessant & Pavitt 2005, 372)

The first stage of innovation process presented in Figure 5 is *creativity*. It appears to be essential for further idea development. It involves analyzing and examining internal and external forces influencing the company in order to find the source of creativity. Yet, speaking about idea generation for the new services and products, and R&D, the source for creativity can be found in a wider range of areas. The next stage is *selection*, which comes with assessing merits and drawbacks of proposed ideas according to company strategic positioning. The *incubation* phase aims to develop a prototype of the selected idea and examine it before launching it into the market. After testing is successfully completed the company *implements* the idea by introducing the product or service in the market. And finally, during the *learning* stage company, regardless of innovation success or failure, expands its knowledge and develops expertise to support future innovation. This stage is especially important for knowledge-intensive companies. (Tidd, Bessant & Pavitt 2005, 41, 405–411.) The next sub-chapter concentrates on studying creativity as a major element of innovation process, revealing its role and significance.

3.2 Creativity as a major innovation component

It might be hard to distinguish differences between innovation and creativity at the first glance. However, in this study innovation is related to the whole process – from motivating the employees to generate ideas – to launching the service into the market, while creativity is seen to be incorporated in the every stage of innovation process and in every department of an organization. (Amabile 1998; Rodrigues & Veloso 2013).

What really determines a creative and innovative organization is the way creativity is spread throughout different parts of the company. Despite the common view that creativity belongs only to marketing and R&D departments, it can benefit every function of organization. Fostering creativity requires managers to take risks and to change business strategy radically. (Amabile 1998, 87.) In the knowledge-oriented company offering a range of knowledge-intensive services all these conditions should work together and efforts to support creativity are required to be significant. Organizations do not respond creatively, instead they motivate their employees to do so. Therefore, the creativity extent is directly affected by the organizational support. (Goodman & Dingli 2013, 60.) Another characteristic of a successfully managed creativity flow in an organization is the ability to face failure and estimate its probability. The role of managers is to decrease fear of failure by creating a working environment which will be both psychologically safe and challenging at the same time, and to encourage workers to experiment constantly, maximizing learning outcomes. (Amabile & Khaire 2008.)

According to Hamel and Prahalad (1991, 85), in terms of creativity it is important to remember about fostering *corporate imagination*, which consists of four distinct elements. In order to quicken corporate imagination a company should target:

- escaping the tyranny of served markets
- searching for innovative product concepts
- developing traditional assumptions about price and performance applying new, more innovative approaches
- leading the customers, rather than following them.

Revealing the desires customers might not have realized yet rather than simply responding to the existing demands, is a fruitful practice. A truly innovative company is actually pushing and leading their customers into directions they want them to go before customers know their intentions and needs themselves. (Hamel & Prahalad 1991, 85.) In order to reveal undiscovered competitive space and exploit the potential for innovations, managers and product designers have to think outside the current business boundaries, they have to be creative. Creativity in a P-KIBS company is managed and fostered not by a single manager, but by a team of professionals. However, the focus is distributed between several aspects. According to Amabile (1998, 78), creativity has three main components: expertise, creative-thinking skills and motivation, as pictured in Figure 4 presented below:

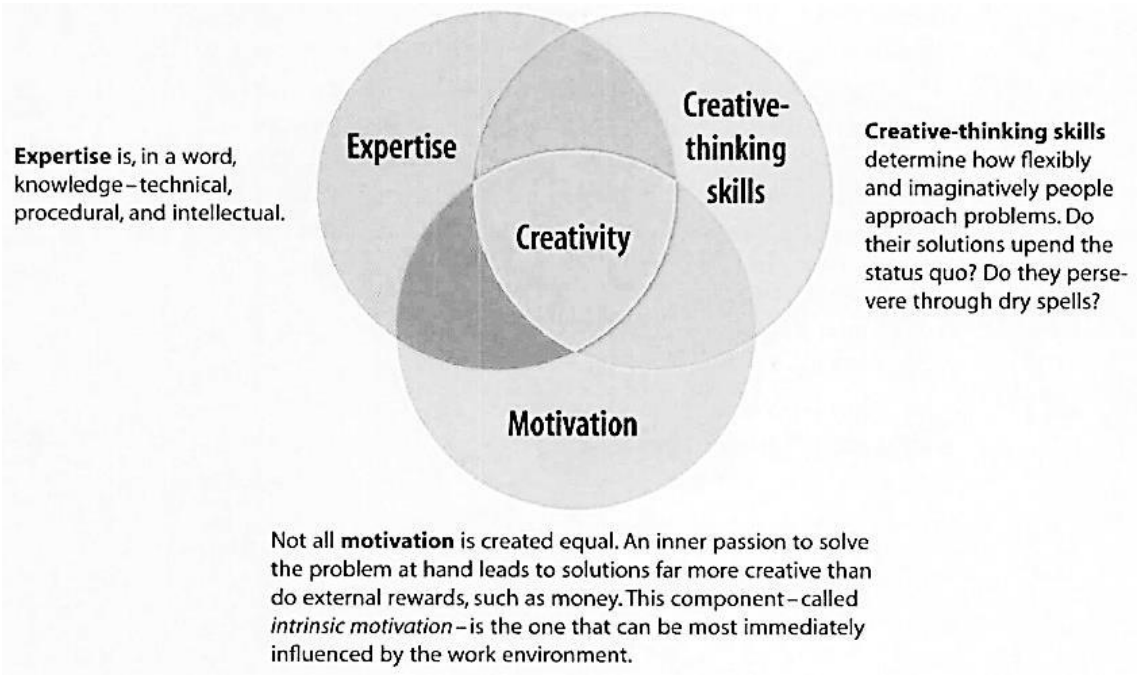

Figure 5. Creativity components (Amabile 1998, 78)

Each of the creativity elements shown in Figure 4 responds to enhancing creativity flourishing in organization. If expertise is procedural and intellectual knowledge, then the outcomes of expertise should be easily found in a P-KIBS company, being the main strength and the source of competitive advantage for such company. Possessing creative-thinking skills, managers enable creativity flow in an organization which is determined by the rate of flexibility and imaginativeness of the way a company faces problems. Corporate imagination brings innovation process to another level, leading the company to success. For a P-KIBS company business success is also defined by the high level of motivation and support provided by well-managed work environment. (Amabile 1998, 79; Bettiol, Di Maria & Grandinetti 2012, 553.) The discussed insights find their reflection in deeper studying of the P-KIBS context in the next subchapter.

3.3 Managing creativity in P-KIBS

Being a specific instrument of entrepreneurship, innovation is a vitally important activity in business that determines the success in a process of value creation and sustaining competitive advantage (Drucker 1985, 19). Innovation management in knowledge-intensive services contributes to the modern economy, distributing and utilizing innovative knowledge (Ojasalo 2008, 212). Innovation management requires companies to rethink and recreate the fundamental visions of *creativity* process and marketing of the selected ideas. It becomes increasingly important to support internal R&D activities. (Chesbrough 2003, 35.) However, official R&D mechanisms in P-KIBS companies are characterized by low level of utilization. Moreover, it has been assumed for a long time that service industry is poor in terms of creative skills and is not among innovation-driven and sophisticated ones, which lead to low rates of productivity in the industry (Miles et al. 1995, 48). Services constitute a business field where innovation becomes a tool of addressing and responding to customers' needs and expectations (Goodman & Dingli 2013, 140).

In terms of positioning P-KIBS companies inside business innovation system, they can be divided into three large groups depending on their vision and strategy. The *first group* includes P-KIBS companies that support their client firms by developing innovation processes inside these firms. The *second group* is constituted of P-KIBS companies that facilitate innovation process of the client firms, but outsource original innovations from elsewhere. Finally, the *last group* consists of P-KIBS companies that act not only as carriers, but also source of innovation for their client firms, initiating, developing and implementing innovations. (Castaldi, Faber & Kishna 2010, 4.) However, regardless of the type of role company performs, creativity is the core of all the activities evolved around innovation process.

Creativity plays primary role especially in the knowledge-based and highly-competitive environments. It rises from promoted dynamism and freedom in organization, where confidence to suggest, to make a decision and to be supported is vital. Organizational trust and leadership influence help employees to engage more actively in creativity process and to take risk of generating and implementing more ideas. In fact, when the employees respect and trust their superiors, they are more likely to submit ideas. (Rodrigues & Veloso 2013, 545.)

According to Amabile and Khaire (2008), "the first priority of leadership is to engage the right people, at the right times, to the right degree in creative work". Situational leadership is the core human resources principle in a P-KIBS company. It constitutes a very effective approach as long as the interaction between the structural parts of the organization is relatively high and responsibility in organization is delegated to certain people. The imaginative, creative company seeks ways to exploit new opportunities while protecting existing business. It does not narrow creativity flow in attempts to protect the current revenue stream. (Hamel & Prahalad 1991, 83.)

Managing creativity is a challenging process in terms of its appropriate implementation. The key task for organizations seeking to improve it lies in detailed analysis of managerial support towards corporate creative ability: time framing, support volume and directions. The most challenging phase of innovation is creativity, while the most critical part of the process is selecting and prioritizing ideas. (Kelley & Lee 2010, 1007.)

Creativity is increasingly about teamwork and people constituting the main asset a firm possesses. It is significantly accurate for knowledge-intensive industry which largely depends on the human resources and the way their interaction is organized in organization. There are ten building blocks of an imaginative organization that highlights creativity as a main tool for achieving its business goals. P-KIBS companies need to be actively working towards incorporating these ideas:

- shared vision, leadership, commitment and the will to innovate
- appropriate structure enabling creativity, learning and interaction
- key individuals fostering creativity
- effective team working including team selection and team building
- continuing individual development and ensuring high levels of competence
- extensive internal and external, vertical and horizontal communication
- organization-wide high involvement in innovation
- internal and external customer orientation and networking focus
- positive creative climate supported by relevant motivation systems
- learning organization involved in proactive experimentation, communication, knowledge capture and dissemination, and reflection. (Leonard-Barton 1992, 28–32; Garvin 1993, 81–86; Tidd, Bessant & Pavitt 2005, 467–469.)

Among the above mentioned components of a creative organization, P-KIBS companies specifically focus on key organizational roles, methods fostering creativity and learning networks creation. Creativity in these companies is seen in every department and constitutes the foundation of business activities. Figure 6 presents combined theoretical map of the third chapter related to creativity in innovation process in the context of KIBS companies, as well as creativity elements and main impacts.

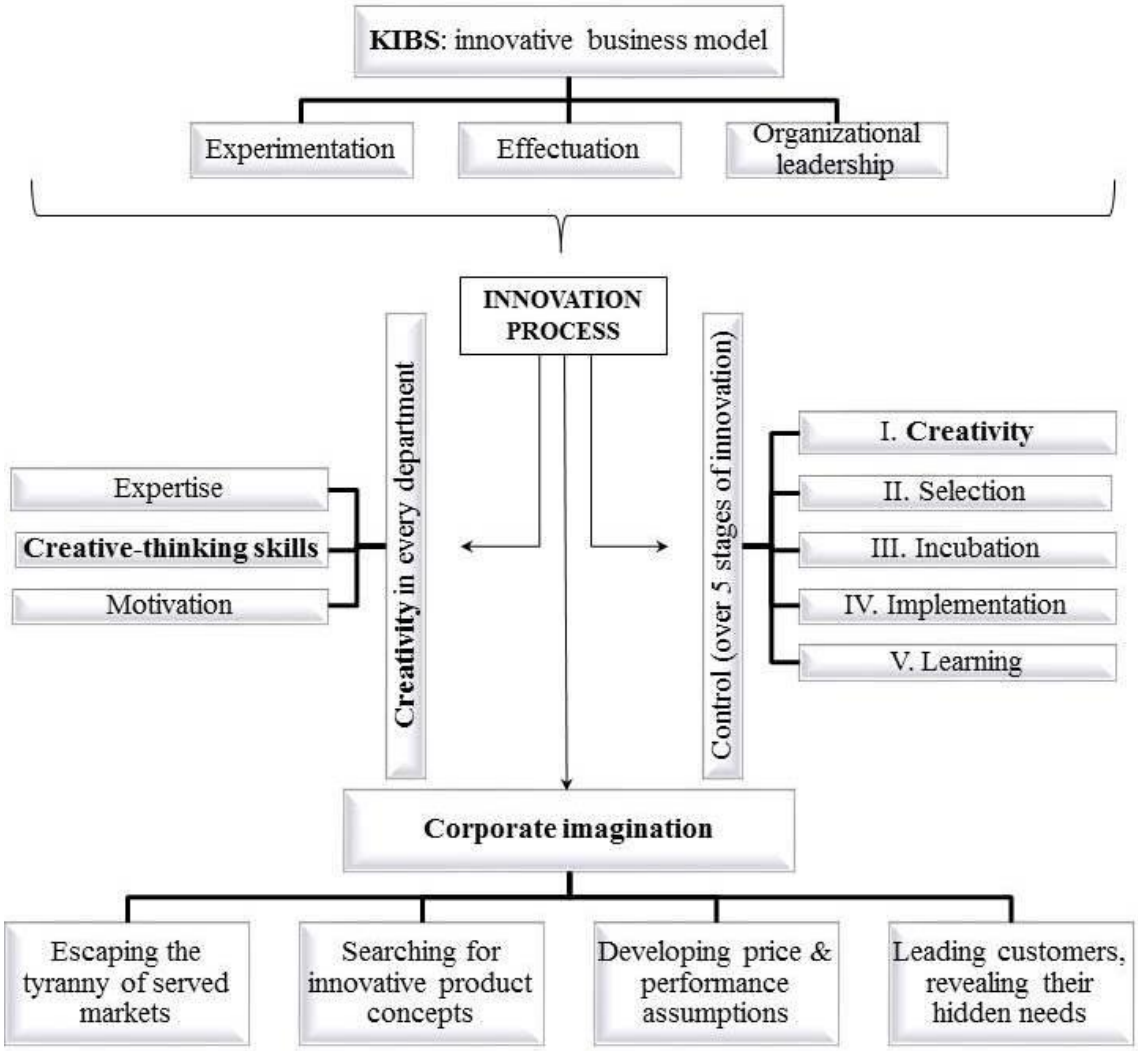

Figure 6. Creativity as a part of innovation process in P-KIBS

Figure 6 presented above highlights the role of creativity throughout different stages and different perspectives related to innovation. Creativity is a major component in the innovation process which is vital for firm's survival. KIBS companies are "innovation architects", they create and foster innovative services, develop their innovative business model through experimentation, effectuation and organizational leadership. In order to sustain creativity in the company, it is important to understand the peculiarities of dif-

ferent stages of innovation process, as well as significance and characteristics of corporate imagination.

Firms innovate in order to unleash new markets, to extend service range, and to improve the internal business process. The methods companies use to do so differ as well. Some organizations copy their competitors' technologies or adopt external strategies and systems. These choices require less creativity and risk taking than genuine innovation does. Organizations, who chose to invest in R&D, applying sufficient resources into creative process and idea implementation phase, engage in an uncertain and demanding process. Navigating in this stage is very challenging for the company, but potential benefits of doing so are significant. (Howells & Tether 2004, 38.)

Creativity is a multidimensional phenomenon and it involves risks, as anything new does (Rodrigues & Veloso 2013, 548). Companies need innovation to survive in market competition. Prioritizing different risk factors helps managers to point out the most important and significant ones, which will be managed further. (Vargas-Hernandez 2011, 51.) Service transactions, as the ones happening in knowledge-intensive companies, are characterized by risk dominant nature, as service firms sell promised future accomplishments and value-added changes (Freiling 2009b, 10). The discussion brings the study to the next chapter which reveals the concept of a risk intelligent company and its main peculiarities.

4 ROLE OF RISK INTELLIGENCE IN P-KIBS

This chapter introduces and explains the concepts of risk intelligence and a risk intelligent enterprise in order to answer the second research question: '*What are the characteristics and role of risk intelligence as an approach towards risk management process implementation in a P-KIBS company'*. The chapter analyzes the most notable risk management frameworks found in the up-to-date theoretical research. It follows the logic of advancing from simple to complex by starting with defining the main terms. Later the discussion proceeds towards justifying the implementation of a risk intelligent approach for managing risks in P-KIBS companies.

4.1 Risk management and risk intelligence

Nowadays trading speeds are rapidly increasing within a growing number of existing and potential markets, exploding data volumes and investment alternatives. Assessing and executing trade strategies become harder while decision making becomes more challenging, which inevitably increases organization performance risks. Marketing specialists and managers are striving to gain a competitive advantage. As a result of these challenges, companies have the need to capture, monitor and analyze an overwhelming amount of market data and potential risks fast and accurately. (Hoyt & Liebenberg 2011, 795; Microstrategy 2012, 1.)

The word '*risk*' is derived from Italian 'riscare', which initially meant 'to dare' and 'to choose to dare' (Massingham 2010, 464). However, in present times it is a challenging task to define the term '*risk'* as it is based on individual risk and threat perceptions. However, operationally, it is possible to define certain aspects of risk, such as for instance, variance of return, potential impacts or likelihood of exposure. The nature of risk is characterized by subjective probability, uncertainty and business preferences. Therefore, in decision-making process it is more useful to analyze risk metrics rather than risk as a whole. (Holton 2004, 24.) Companies introducing new services face a range of obstacles in the process of establishing their operation. They face the need to enhance their internal control systems. (Enterprise Risk Management 2004.) Meanwhile, incorporating these incentives, risk management has become one of the increasingly important business drivers.

Risk management was shaped into a quantitative discipline in 1980s, when financial sector started to pay attention to the significance of measuring risks. As the complexity and degree of trading increased, the role of risk management transformed into a prevailing strategic approach in business. Moreover, recently risk management began to be seen as a proactive tactics, contributing expertise and playing essential role in allocating

budgets and focus. (Hoyt & Liebenberg 2011, 795; Ludwig 2012, 6.) In a market space expert judgment can navigate a company through decision-making and provide reliable and valid assessment of situation, however, appropriate risk management models are required to determine more specific issues, such as loss probabilities and negative ratios (Jarrow 2011, 97).

Risk management is a system of strategies, techniques and tools meant for identifying and controlling risks. It is a logical assessment process regarding scales of potential risks and benefits, as well as costs of leaving them uncontrolled. However, risk management identification and control methods differ from field to field. That is why risk management is contextual and industry dependent, and only utilization of appropriate risk management form is beneficial. (Attar 2011, 387–389; Hosseinzadehdastak & Underdown 2012, 1, 8.)

Risk management is a discipline and state that can not only be used for corporations and public organizations, but for any activity. It is a broad field of study, objectives of which are impossible to set in one paper. It is a central part of any organization's strategic management. (A Risk Management Standard 2002, 2.) However, organizations have the opportunity to measure their activities using risk management tools. The risk management process can be displayed as an algorithm of actions, which includes the biggest part of the actual risk analysis containing several stages, as shown below in Figure 7.

Figure 7. Risk management process (A Risk Management Standard 2002, 4)

Any risk management algorithm, similar to the one in Figure 7, outlines the stages of the risk treatment process and makes it easier for the managers to deal with risk outcomes. Almost every risk management process approach has common key phases: risk identification, risk assessment, risk responding, and managing and control. The first phase deals with researching and reviewing potential risks and threats, giving a comprehensive picture and proper understanding to the managers. The second phase measures the scope of the identified threats and defines their priority, taking into consideration time and resource capabilities of the company. It is necessary to analyze possible conditional interdependencies of diverse risks. The main goal of the next phase is to treat risks before they begin to enact. It means that during this phase organization seeks for the ways to respond proactively against threats, lessening, avoiding or threating them well in advance. Finally, the managers apply control methods towards successful risk remediation, appropriate risk management allocation and effectiveness assessment. (Attar 2011, 387–389; Hung 2012, 76–80.)

The goal of an entrepreneur is to estimate and measure the potential significance of existing resources, determine successful market positioning and produce a clear differentiation of offers from those of competitors to gain a sustainable competitive advantage. Thus to implement an innovative approach and provide company strategy with certain step-by-step algorithms, an entrepreneur should analyze the market positioning process from the point of view of the risk management. (Stevenson, Roberts & Grousbeck 1985, 23–38.)

One of the lessons business world has learned in recent years is that risk management has to be embedded in strategy execution. From this perspective, companies tend to focus on the most significant consequences and threats to shareholder and stakeholder value, along with their potential effects, likelihood and nature. (Frigo & Anderson 2011, 21–22.) However, the more complex and uncertain environment is, the more complicated it becomes to control the risks. Risk assessment stands out in managing organization performance process. Assessing risks, threats, consequences and vulnerabilities is crucial in order to identify and prioritize further risk reduction activities, which without doubt contribute to a company's strategy. (Moteff 2005, 4.) Creating and assessing a risk map is a complex process, but it helps managers to prioritize and organize risks, allocate resources towards managing risks and take actions towards future strategic development. The real challenge is to create and maintain a consistent, effective risk management process that is sustainable. (Deloitte 2013, 13.)

In 2006 the US business writer David Apgar invented the term *'risk intelligence'* and defined it as the capacity to learn about risk from experience. Estimating probabilities, exploring uncertainty and managing risks are the core concepts of the term. (Apgar 2006, 3, 20–21.) However, the present study develops the understanding of risk intelligence based on a more recent definition. An American financial executive, author and

Columbia University professor Leo Tilman (2012) has claimed that risk intelligence is essential to survival, success, and relevance of companies and investors in the post-crisis world and has recently redefined risk intelligence as: "the organizational ability to think holistically about risk and uncertainty, speak a common risk language, and effectively use forward-looking risk concepts and tools in making better decisions, alleviating threats, capitalizing on opportunities, and creating lasting value."

Traditional risk management focuses on value protection while risk intelligence thrives to balance both value protection and value creation. The company that uses risk intelligence techniques to manage risk challenges and potential outcomes throughout all parts of organization, becomes a risk intelligent enterprise. (Deloitte 2013, 4.) Risk intelligence is not about avoiding risks, but about estimating, analyzing and managing them. The next subchapter takes a deeper investigation into the nature of a risk intelligent enterprise.

4.2 Risk intelligent enterprise

A risk intelligent enterprise views risk taking process as an essential and integral part of value creation process since virtually any activity carries some degree of risk if it targets to pursue value. A risk intelligent company changes its risk management approach from traditional when the company seeks for any chance to minimize or avoid existing risks towards innovative when right kinds of risks are being selected and pursued in order to effectively achieve strategic goals. (Deloitte 2013, 4.) In an innovative P-KIBS company these challenges become vital. In the context of industry perspective all the factors should be analyzed as a whole: clients, services, geographies, etc. It is very important for such a company to be explicit about its choice of strategic focus on value creation and low cost and to enable its internal operations to support this strategic focus. Management is expected to decide potential company's position regarding value and cost, in order to operate activities accordingly and manage them efficiently. (Porter 1996, 63.)

There are several factors that push the company to implement risk intelligence as a significant survival and success mechanism. Naturally, some industries are more regulated than the others. Therefore, companies in a highly regulated environment tend to adopt more risk management techniques and methods. Another factor is market competition. In competition-intensive industries firms face obvious risk of not earning a substantial level of profits, when companies that have gained a monopolistic position enjoy relatively low profit risks. Several industries can be outlined as the riskiest ones, and therefore, requiring companies to configure risk intelligence systems: utilities, telecommunication, banking, insurance, knowledge services and other. (Golshan & Rasid 2012, 278.)

As knowledge services require risk management implementation, it is useful to research precise frameworks that may help managers in a P-KIBS company in their strategic decisions. One of these business tools is the three-dimensional matrix introduced in Figure 8 below. It deals with eight interrelated *components of risk management* process: internal environment, objective setting, event identification, risk assessment, risk response, control activities, information and communication, and monitoring.

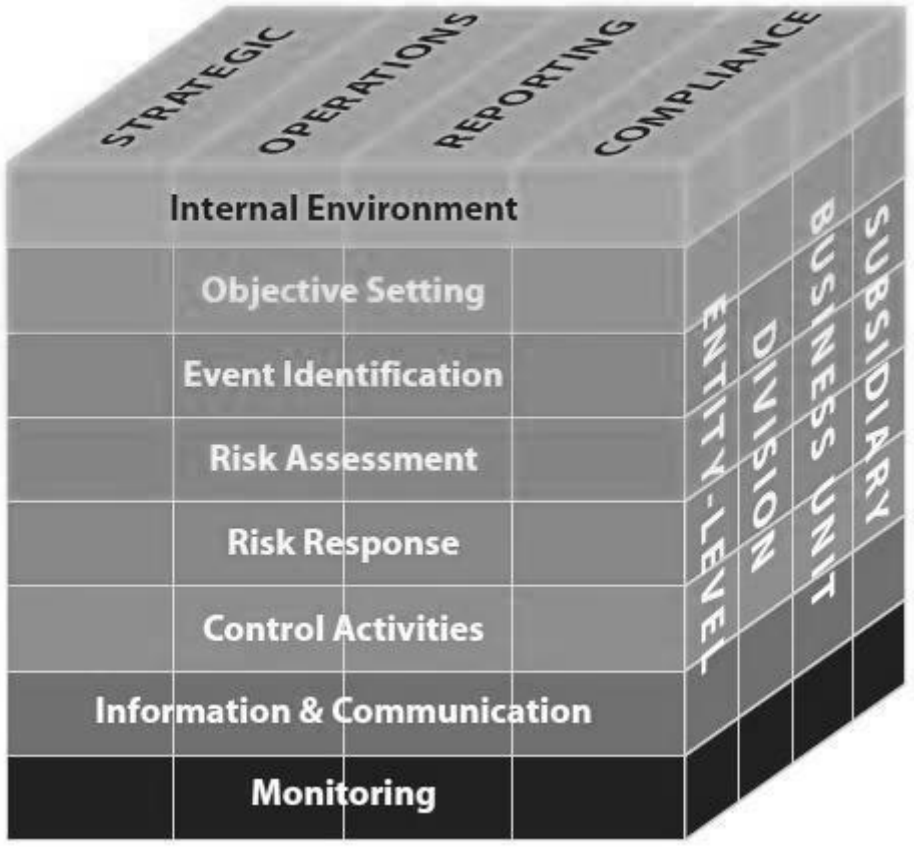

Figure 8. Components of risk management throughout enterprise structure (Enterprise risk management 2004, 5)

Figure 8 shows the interconnections between the eight components of risk management, *business units* of the company and the four *objectives of risk management*: strategic, operations, reporting and compliance. Objectives are the business goals which company targets to achieve, while the business units define and break down what is needed to be done for obtaining the main business objectives. (Enterprise risk management 2004, 4–5.)

In order to define whether the risk management in the organization is effective it is necessary to assess the presence and functioning of the eight risk management components. This tool is very useful for analyzing the nature of risks and understanding that risk management not only belongs to R&D department or executive board, it can benefit every part of the company. Moreover everyone should have a share of responsibility of

its successful implementation. It especially concerns professional knowledge-intensive activities within such business environment where human resources become the key factor for the service success. A risk intelligent P-KIBS company has resources and knowledge to oversee risks effectively and manage them on every level of the organizational structure. Company strategy is closely tied to the risks it faces.

A truly risk intelligent company understands that risk management aims to protect existing assets and to create future value. It is necessary to distinguish between different specializations of business units for harmonization, synchronization and rationalization of risk management. All these practices enable better control over risks in every key decision and activity. In a risk intelligent enterprise managers choose informed risk taking for value creation rather than pure risk avoidance. (Deloitte 2013, 8.)

A risk intelligent enterprise develops its strategic principles, defines its development direction, and reveals core values according to risk management incentives. In order to recognize and exploit opportunities with the highest potential for future profitability, the company faces a challenging process of strategic decision-making. This process is determined by defining and achieving profitability goals and by necessity to reduce costs. The strategy of a risk intelligent company is based on frameworks, which reduce and prevent it from choosing an incorrect direction of development. Maintaining such an internal control system may help managers to undertake right steps and foresee the future impacts and outcomes of the decisions made. In a rapidly changing world the rivalry is intense to such an extent that creating value sometimes means survival and making a mistake may cost fortunes. Risk intelligence implementation is crucial when it comes to predicting future scenarios and fulfilling the needs of organization in terms of target achievement.

Contemporary market situation requires organizations to utilize efficient risk-taking frameworks. However, in many cases the board and the management share different perspectives on decision making, risk taking processes and reward preferences. Board of directors is often unaware of the ultimate significance they have when speaking about developing risk intelligent strategy within the company. Moreover, the management lacks the understanding of responsibility division and delegation in comparison to the one of the board. While board of directors is accountable for governing the strategies implementation within their risk taking approach, the management is responsible for developing these strategies into business plans and managing their utilization. (Golshan & Rasid 2012, 279.)

In order to analyze P-KIBS organization performance it is important to keep in mind that there are internal and external factors influencing the company. Risks can be divided according to their nature, impact and interrelations. There are several key risks the firm may face, which can be divided them into 4 categories: financial (e.g. revenue, liquidity and cash flow), strategic (e.g. competition, customer changes and intellectual

capital), operational (e.g. regulations and supply chain) and hazard risks (e.g. public access, services and contracts). (A Risk Management Standard 2002, 3). When estimating the potential service success, it is necessary to analyze contextually all these internal and external forces and threats that may influence the company. The ability of an organization to manage different types of risks depends on the following three factors: the financial power of the firm, the size and market share of the company, and the scale of potential risk (Chitakornkijsil 2009, 58). Therefore, risk management system is different in every P-KIBS company.

In order to implement a comprehensive and consistent risk management system, it is important to take into consideration following insights, introduced by Harris-Jones & Bergin (1998). The authors propose to design risk management strategy, acknowledging board's objectives and developing it around them. It is crucial that risks are systematically balanced, evaluated and treated internally and externally throughout all parts of the company. Also the authors point out the significance of knowledge management and *transferring it between business units*, which becomes of utter importance in a KIBS company. (Harris-Jones & Bergin 1998, 63.)

Risk prospective should be transparent across all the organization units. In order to develop this approach it is useful to analyze organizational levels and main actors of risk management process as presented in Figure 9:

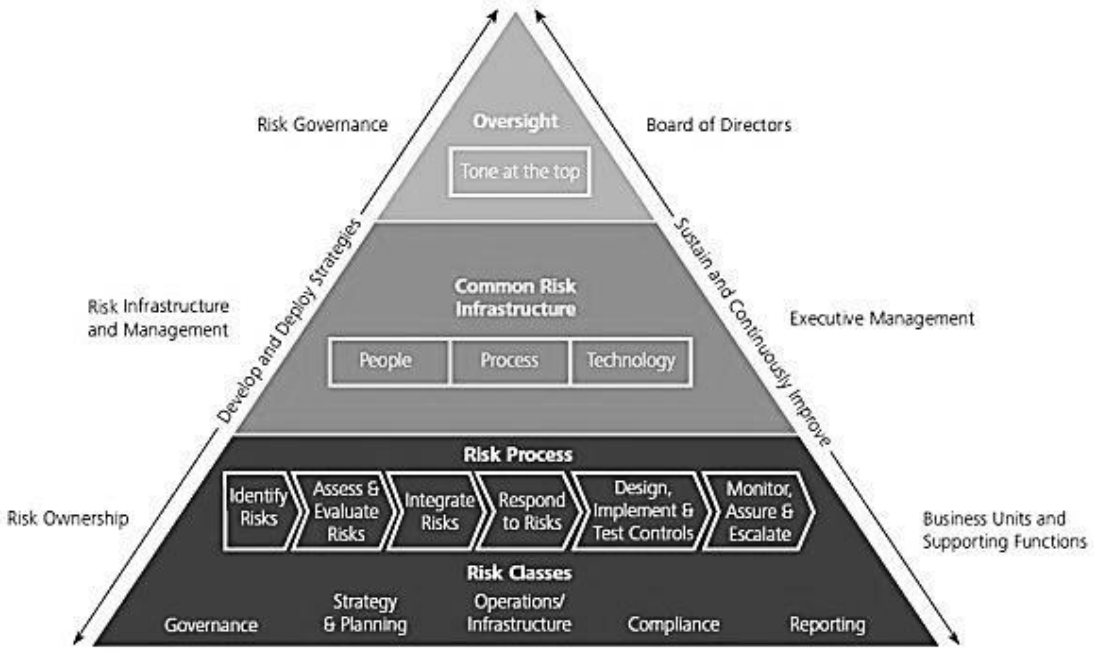

Figure 9. Risk intelligent enterprise framework (Deloitte 2013, 4)

Three levels of risk responsibility are outlined in Figure 9. The *first* one is risk governance performed by the board of directors and including strategic decision-making

and risk oversight. The *second* one is risk infrastructure and management performed by the executive management. The tasks here concentrate around designing, implementing and maintaining an effective risk management program. Finally, the *third* level is risk ownership distributed between business units that identify, measure, monitor and report on specific risks. Risk management is the responsibility of everyone in a risk intelligent company. The goals of developing and deploying strategies, as well as sustaining and continuously improving risk management are expected to be achieved due to the organized and maintained teamwork.

The wisdom of implementing a risk management system into the organizational structure hides in the profound research and understanding of different standards and frameworks. There is no single model or theory that applies best to all the companies. Often it is a fusion of different perspectives, compiled specifically into a certain context. It is also important to have a focus, to narrow down the scale of risk management implementation towards organizational objectives. Risk intelligence builds such risk management that not only creates, but also protects value for the company. (Fox 2013, 35.) However, risk intelligence may be an industry-specific and context-bounded phenomenon; hence, the concept should be analyzed from the perspective of P-KIBS companies, as discussed in the next subchapter.

4.3 Risk intelligence in P-KIBS

The essence of knowledge-intensive companies is knowledge and the main focus is the ways of managing it. Risks cannot be managed effectively if knowledge management in the company is ignored (Haltiwanger, Landaeta, Pinto & Tolk 2010, 283). Managing knowledge actively and systematically throughout different processes is an effective tool for managing risks. The two concepts have become so integral that together they have a potential to constitute company's strategy. Sensing, monitoring and treating risks timely is dependent to a great extent on intellectual capital, such as employee insight. Mobilizing information and expertise through open communication channels allows developing a proactive and responsive risk management system. (Neef 2005, 112–114.)

Knowledge is vital for comprehending and managing risks. Knowledge-intensive companies utilize existing knowledge channels to improve poor risk management and create value, such as: ensuring knowledge transfer to decision makers and distributing roles between leading actors (Jebrin & Abu-Salma 2012, 293), developing knowledge accessibility throughout business units, embedding insights in systems. The value of understanding similarities between knowledge management and risk management is enormous. It helps the integration of two processes happen faster and more effectively. It makes the risk 'learnable' and 'approachable'. Making this connection explicit pro-

fessional knowledge-intensive business services address their problems through systematic combined methods and perspectives. (Massingham 2010, 466.)

As it has been discussed earlier, risk intelligence as a novel approach towards managing risks is gaining significant attention in the business world. Through its goals, methods and tools professional knowledge-intensive business services aim and gain more profound competitive advantage. Combining knowledge management incentives with risk intelligence insights P-KIBS companies open wider opportunities for developing greater strategies. Figure 10 serves as a theoretical concept map of the fourth chapter and presents the outlines studied earlier. It depicts the relationships between different theoretical concepts and patterns creating a logical path for reshaping business strategies for P-KIBS.

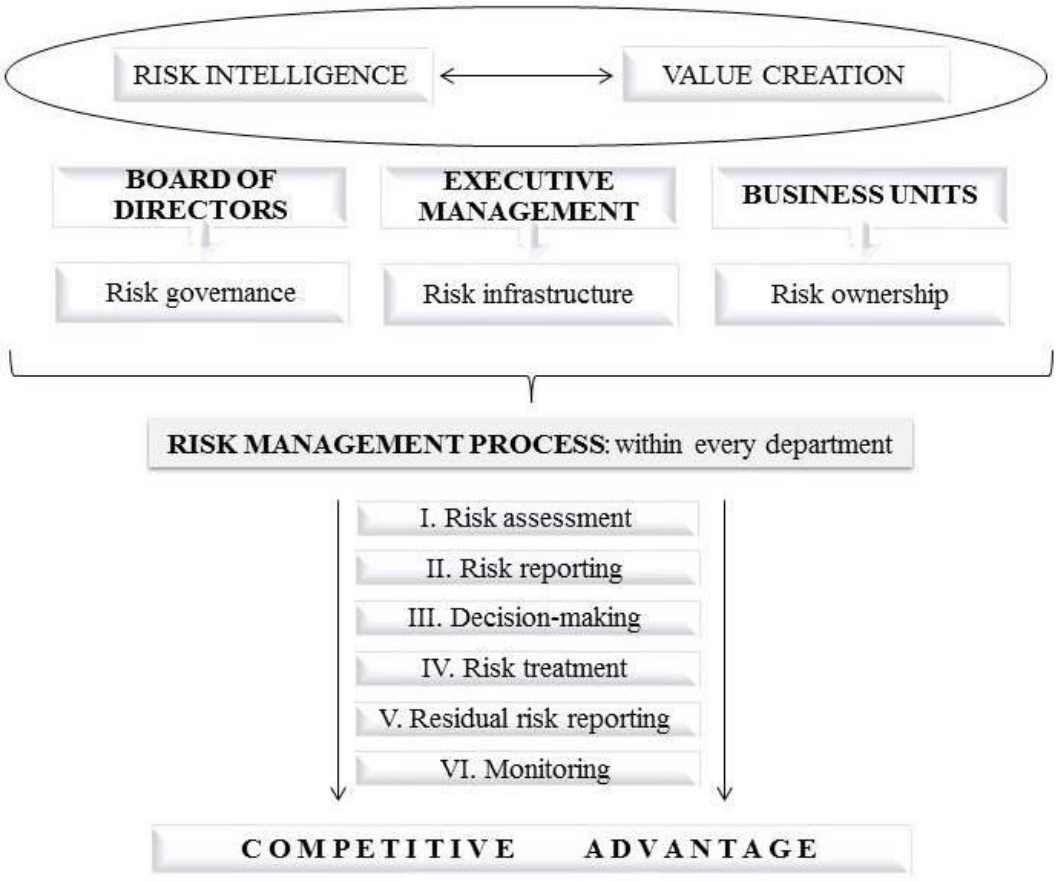

Figure 10. Risk intelligence in P-KIBS

Figure 10 deals with different risk management and risk intelligence theories, concluding the logic of the chapter. Operating in the context of uncertainty, companies have to adopt risk intelligence practice in order to obtain value creation. Risk management process is divided between different actors in the organization, whose roles differ from each other genuinely, however, regardless of the role, teamwork and internal organiza-

tional collaboration is essential. This approach ensures that the risk management objectives are being achieved and the risk intelligence approach is being obtained within every company department throughout the working process. For the P-KIBS company implementing these concepts is yet more challenging due to extensive knowledge management, as well as creativity management network within the organization. It is important that risk analysis does not limit creativity development, but foresees the new opportunities for the business. Balancing these elements correctly opens possibilities for achieving considerable results and contributing to successful firm performance.

5 CREATIVITY AND RISK INTELLIGENCE IN P-KIBS

The present chapter brings together the major conceptual blocks of the study and the relevant theoretical findings in order to answer the third research question: '*How can risk intelligence and creativity be balanced in P-KIBS'*. It reflects the existing theoretical discussion on balancing creativity, innovation process, risk management and risk intelligence in P-KIBS. It identifies knowledge gap perspectives based on conceptual research findings and introduces a unique combined theoretical framework which represents both the research question answer and the main contribution of the study. The framework is explained thoroughly and discussed in depth, providing critical assessment and analysis.

5.1 Managing innovation risks

The risk tolerance of an organization changes throughout time (Sgourev 2012, 549), especially in a demanding innovation-driven and knowledge-intensive environment. An adequate risk assessment comes along with the careful strategy modelling and potential consequences analysis (Merton 2013, 56). Often risk is considered as a feature one has to avoid when managing the resources or capabilities. However, in fact companies are likely to create greater value by being more efficient at managing risks, than others. Moreover, sometimes eliminating the risk actually increases its probability. A smart organization designs innovation process extensively around managing risks and generate risk-driven innovations as a sustainable form of competitive advantage. (Girotra & Netessine 2011, 104–105.)

Competition drives the pursuit of innovation which is tightly connected to uncertainty of new markets or implementing new services. Nevertheless, it opens up new sources for opportunities and development, which helps risks to be tempered. (Sgourev 2012, 551.) No one can possibly capture all risk dimensions or foresee all the consequences of starting an innovation process. It becomes evident that the more factors and variables managers incorporate into risk analysis, the more complex the system becomes. However, their accurate assessment promises achieving the goal of adopting a particular innovation. (Merton 2013, 51–52.) Bowers and Khorakian (2014, 27) proposed a theoretical framework illustrated in Figure 11, which aims to outline and utilize the benefits of existing models for innovation process management and project risk management. The Figure introduces the innovation risk management system which distinguishes organizational tasks according to the process phases. The Figure proposes several selected criteria for pursuing or abandoning ideas at each of the decision points, as seen further:

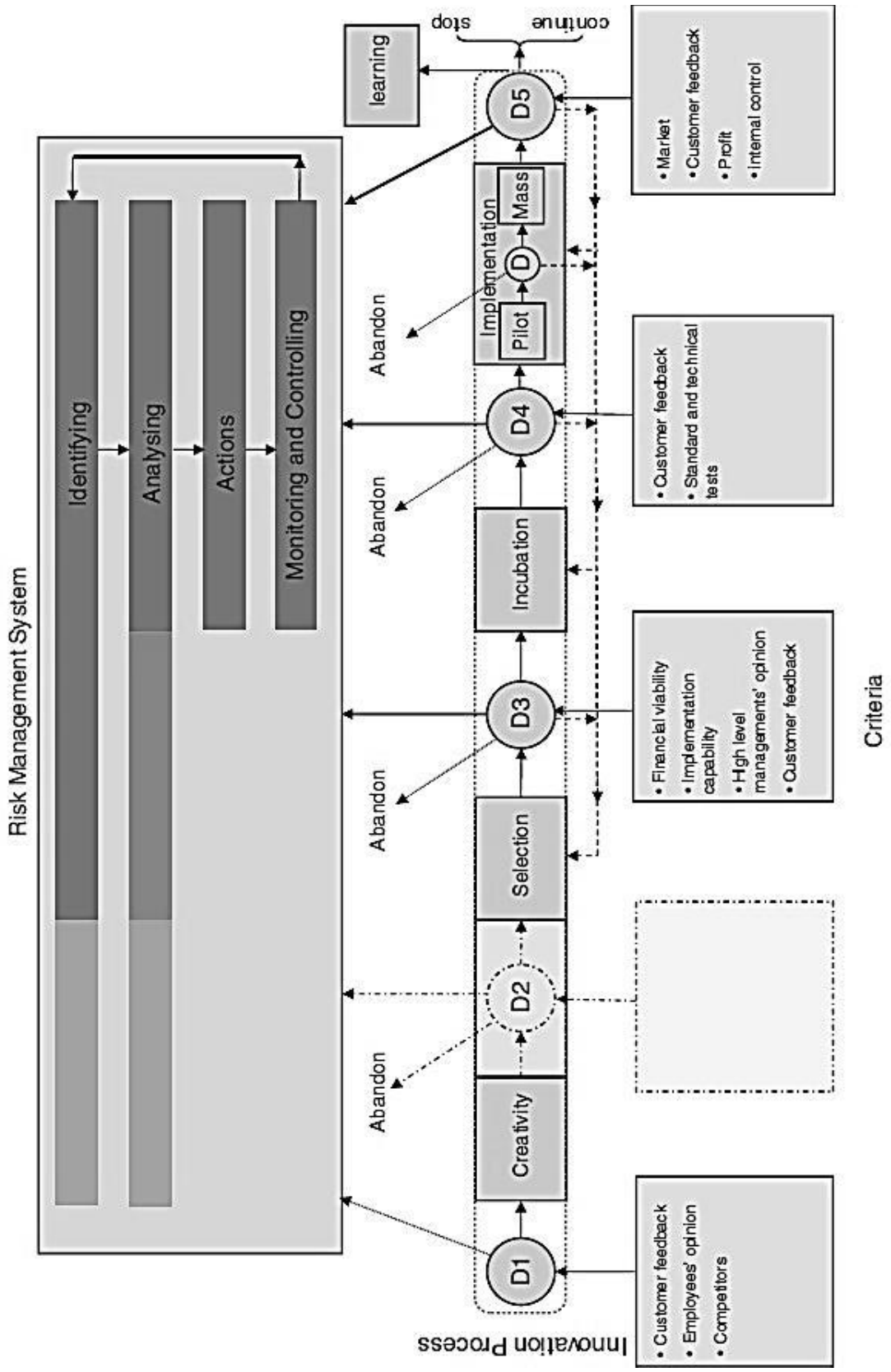

Figure 11. Innovation risk management system (Bowers & Khorakian 2014, 28)

The uniqueness of the model introduced in Figure 11 lies in presenting the combination of risk and innovation management as a stage process. By dividing the activities not

only by their nature, but also according to the time phase they are being implemented in, it is easier to view how these two theories work together in a company. Moreover, after every stage of the process managers face a decision point (for example, D1, D2, …) where they choose either to pursue idea development further or to abandon it. However, this model has sufficient drawbacks. For instance, it is unclear how the risk management and creativity management responsibilities are distributed between different actors in the organization. This role distribution is the essential part of a risk intelligent planning approach, especially in terms of focusing on creativity during innovation process. For example, managers in the company play a significant role speaking about fostering intrinsic motivation and developing sources for extrinsic one. Motivation is one of the most important components of creativity which ensures that the whole innovation process gets started (Amabile 1998, 79). Thus it would be valuable to find the right focus in utilizing these diverse concepts. Later this model will be modified to fit into a combined framework for managing creativity and risk intelligence in P-KIBS companies, utilizing important aspects and benefits of the models described throughout the study, more particularly concentrating on role distribution in organization. The next subchapter attempts to find these answers through a deeper investigation into the nature of an innovative risk intelligent company.

5.2 Innovative risk intelligent company

In contemporary world where competition becomes greater, technology changes faster and customer expectations grow bigger, companies need to innovate in order to survive in the market (Prior 2005, 94; Johannessen et al. 2011, 21). Organizational knowledge systems allow company to selectively improve performance by reflecting established goals and core values. Gathering and analyzing information, decision making and managing uncertainty are increasingly important for the company development. They consist of a complex network of managerial, cultural and structural organizational factors. The tactics of paying attention not only to the cost figures, but also to the qualitative variables in the business environment, has its significant outcomes and rewards. Intelligent systems that notice, track and evaluate these kinds of changes help managers to modify strategies in time. (Miller 1995, 125.)

In creating and configuring risk management systems, companies face a range of choices, which sometimes are difficult to make without professional guidance. Over the years, assisting firms in risk management implementation has become a professional industry. Semi-regulatory bodies, researchers and consultancy companies offer their expertise in this particular area. (Paape & Spekle 2012, 548.) Naturally, innovations carry different types of risks. Riskiness of an innovation relies significantly on the

choices people make. Understanding risk management limitations for innovation is crucial for the business. The only way to manage the balance between risk and performance, as well as to minimize risks is to make informed and conscious choices. (Merton 2013, 50.)

Innovation is not only characterized by the need to foster creative thinking in the company, but also by accepting that a high risk of failure is a part of everyday reality. An efficient innovation management system identifies threats in the early stages as the cost of not doing so can be extremely great. Explicit risk intelligence techniques and methods ensure the success in innovative services to be predictable and estimated, being a useful filter for making critical decisions. However, risk management has to be utilized selectively. Too much or inappropriate risk management may threaten the innovation development and creativity ideas realization. (Bowers & Khorakian 2014, 25.)

The innovation success is determined by the recognition rate of infrastructure potential benefits and risks. Complex, fast-evolving industries, such as KIBS, are characterized by the high pace of innovation, as well as its high rate of failure. Therefore, it is important to have utilized an infrastructure ready for the constant change. (Merton 2013, 55.) Professional knowledge-intensive companies are the ones who radically apply risk management theories in practice. They create and constitute the environment they operate in, offering services in a new way for the new clients in a new shape. They react to the market changes by changing their business, and influence the environment by managing its actors. (Weick 1979, 98.) P-KIBS firms have to be flexible to facilitate the market challenges and implications, to renew their business and to adapt it to the new requirements (Freiling 2009b, 33).

The point of view that risk management is a foundation of effective management and governance has gained widespread acceptance. However, organizations differ in their ways of risk management implementation. Many companies still rely on uncertain risk responses they obtain, while some organizations invest in creating and building highly sophisticated risk intelligence systems, targeting to become risk intelligent enterprises. (Paape & Spekle 2012, 537.) Managing risks in the company is, indeed, not only about risk management tools and techniques, but also about team creativity. Creative thinking skills are absolutely essential when dealing with risks. After threats being identified and analyzed, it is crucial to design risk responses. Thus, creativity allows to identify new more risky situations and potential areas of failure, as well as to develop yet more innovative and effective forms of risk reduction. The more creative the company gets in risk management process, the more certain the environment becomes, in which the company operates. (Toledo 2012, 21.)

Emergence of creativity as means of innovation is largely dependent on the organizational climate and culture. Promoting trust, rewarding commitment and establishing motivation system makes employees relate themselves with organization and feel the

autonomy to contribute to the company success with new ideas. (Rodrigues & Veloso 2013, 546.) Yet, it is a challenging process to encourage people to generate ideas, thus only appropriate and effective risk intelligent approach might foster this critical stage effectively. In addition, it is important to focus firm's strategy on value creation and integrate novel approaches to innovation management. (Bowers & Khorakian 2014, 25.)

It is essential for a P-KIBS company to sustain innovation flow and creative thinking. Truly innovative companies focus on creativity within every action and across all the company departments (Amabile 1998, 78). Similarly, in an innovative risk intelligent enterprise risk management responsibility is also distributed between the organizational departments. The next subchapter identifies the main gaps of the existing models with an emphasis on P-KIBS industry context. The last subchapter of the current study will analyze these gaps further and will eliminate them by designing a new framework.

5.3 Identifying knowledge gap perspectives

For P-KIBS companies the insights from the previous chapters of the study become extremely vital, as their survival is largely dependent on appropriate style of managing organizational structure and knowledge synthesis through creative and risk intelligent approaches. In this sense, it is interesting to explore knowledge management position and role in organization. It is an extremely challenging role to aspire and attempt to balance different processes and interrelations at once. In professional knowledge-intensive companies knowledge creation, knowledge sharing, knowledge acquisition and knowledge documentation processes are as well intense. Similarly, knowledge intensity influences all knowledge processes, having beneficial impact on innovation, idea creation and overall business strategies. (Andreeva & Kianto 2011, 1020–1021, 1028.)

Likewise, it is logical to assume that risk management implementation is of rather specific nature in P-KIBS companies. It is not only required to be modified into a risk intelligent approach, but also to be reshaped further in order to fit the context. Taking into consideration that risk management can be deployed at every stage of the innovation process development (Bowers & Khorakian 2014, 35), it is unclear to what extent it can be deployed and in what way. It is important to investigate the limitations it provides and reasons behind it. Certainly, it is a demanding task to select appropriate detriments which are beneficial to accept for the overall organizational development. However, theoretical research provides some valuable perspectives in this sense.

The knowledge gap (see subchapter 1.2) served as a reason for conducting the current study. However, the examination of existing theories and frameworks on creativity and risk intelligence makes it logical to draw the conclusion about specific *knowledge gap perspectives*, needed to be addressed and researched further. They constitute a ra-

ther narrow and precise focus of the wider knowledge gap and are presented graphically in Figure 12. The Figure deals specifically with the innovation stage process and risk intelligence, its main actors, decision makers and facilitators, diverse required resources, role distribution and strategic prioritizing. An understudied area includes interrelations between creativity process and risk intelligence, how they contribute to each other and what are the limitations, as seen in the Figure below:

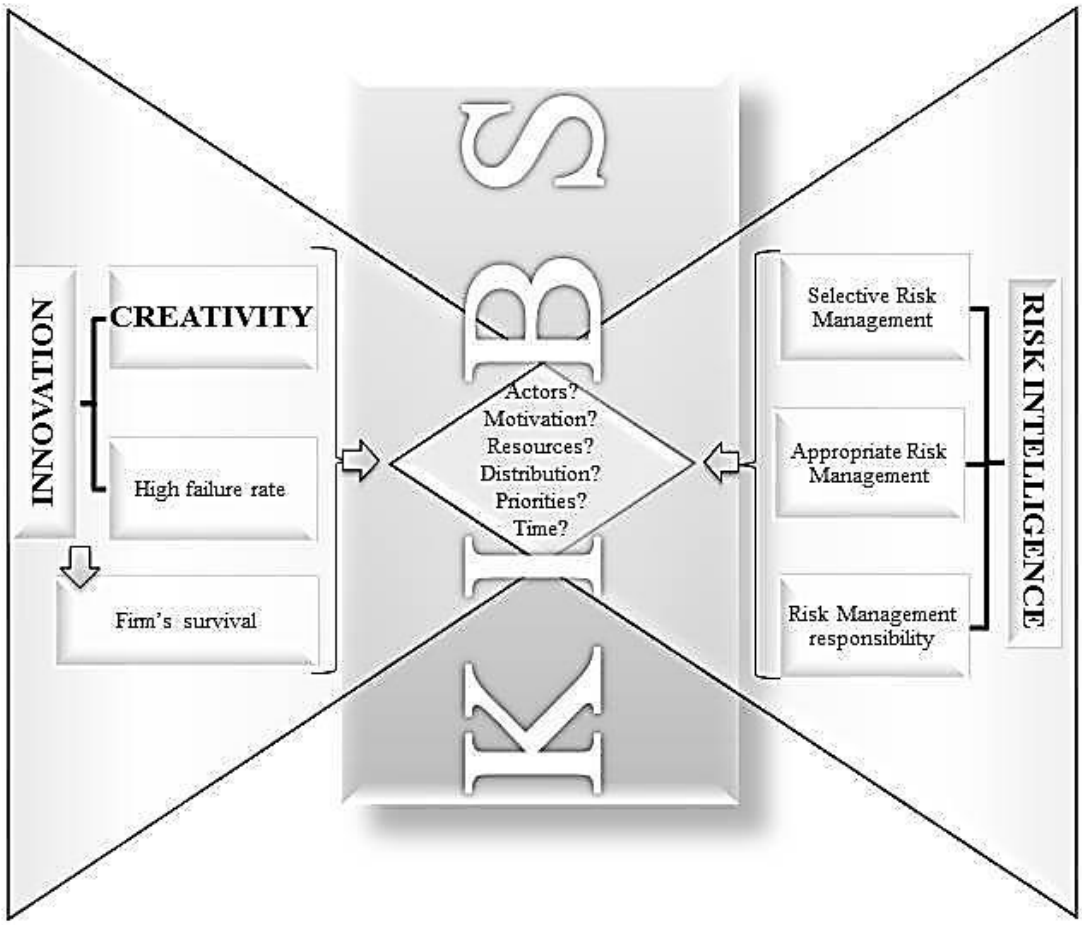

Figure 12. Knowledge gap perspectives

Several conceptual conclusions are highlighted in Figure 12. Innovation is defined by the explicit creative ability applied during the process, as well as the high rate of failure. However, innovation is an efficient tool of firm's survival provided that organization deploys risk intelligent approach. Risk management system has to be selective and appropriate with risk management responsibility distributed accordingly throughout organization. In the context of P-KIBS companies these constrains effect each other with yet more intense power, thus it is crucial to understand how to manage this kind of balance, what role does the *motivation* have in fostering creativity in P-KIBS and how

roles and *responsibilities* are being *distributed* and *prioritized* from the *time* and *resource* points of view. The next subchapter emphasizes on finding answers to these questions. It aims to address the knowledge gap perspectives by combining previously studied frameworks and presenting a new way of them working together.

5.4 Creativity and risk intelligence stage process framework for P-KIBS

Traditional risk management aims to estimate probabilities and explore the market, focusing on measures and limitations. However, creativity flow in the organizations needs a certain extent of freedom in order to flourish and give results. Risk intelligent approach, on the contrary, considers the significance of creative ability support and supports idea generation process. These two processes can be combined and balanced fully in the organization due to the flexibility of risk intelligence. Risk intelligence chooses the risks the firm needs to take in order to develop and gain competitive advantage. (Deloitte 2013, 4.)

Knowledge-intensive firms have a functional organizational structure, which cannot be strictly departmentalized. Interpersonal interaction in P-KIBS company stimulates creativity, creating working internal and external networks. Creative development is nurtured by knowledge sharing and learning support. The line between management, and business functions is blurred in a P-KIBS company, which adds to the synergy between departments and ensures counterproductive mutual learning. However, balanced management throughout organizational levels is crucial. Management in a P-KIBS company is different from a traditional view: it works as a mediator between the firm and environment, governing and mentoring business units, as well as maintaining and enhancing the integrity of the company and promoting the intellectual competence as a comparative advantage of the firm. (Nurmi 1998, 28–30.)

Speaking about launching a new service in a P-KIBS company, the innovativeness of the service affects the development of a company. The more creative the service idea appears to be, the more opportunities it unleashes for delivering a novel service to the market place. Overall strategy development includes linking innovation management and creativity advancement to risk management, as well as risk management to knowledge management. (Ojasalo 2008, 214–217.) Figure 13 suggests the way of managing the balance between creativity and risk intelligence in P-KIBS, answering previously discussed questions and responding to the requirements of time/process alignment with multiple actors. Organization structure consists of three levels: board of directors, executive management and business units, each carrying and fulfilling certain functions in the company and sharing three distinct levels of risk responsibility (Deloitte 2013, 4).

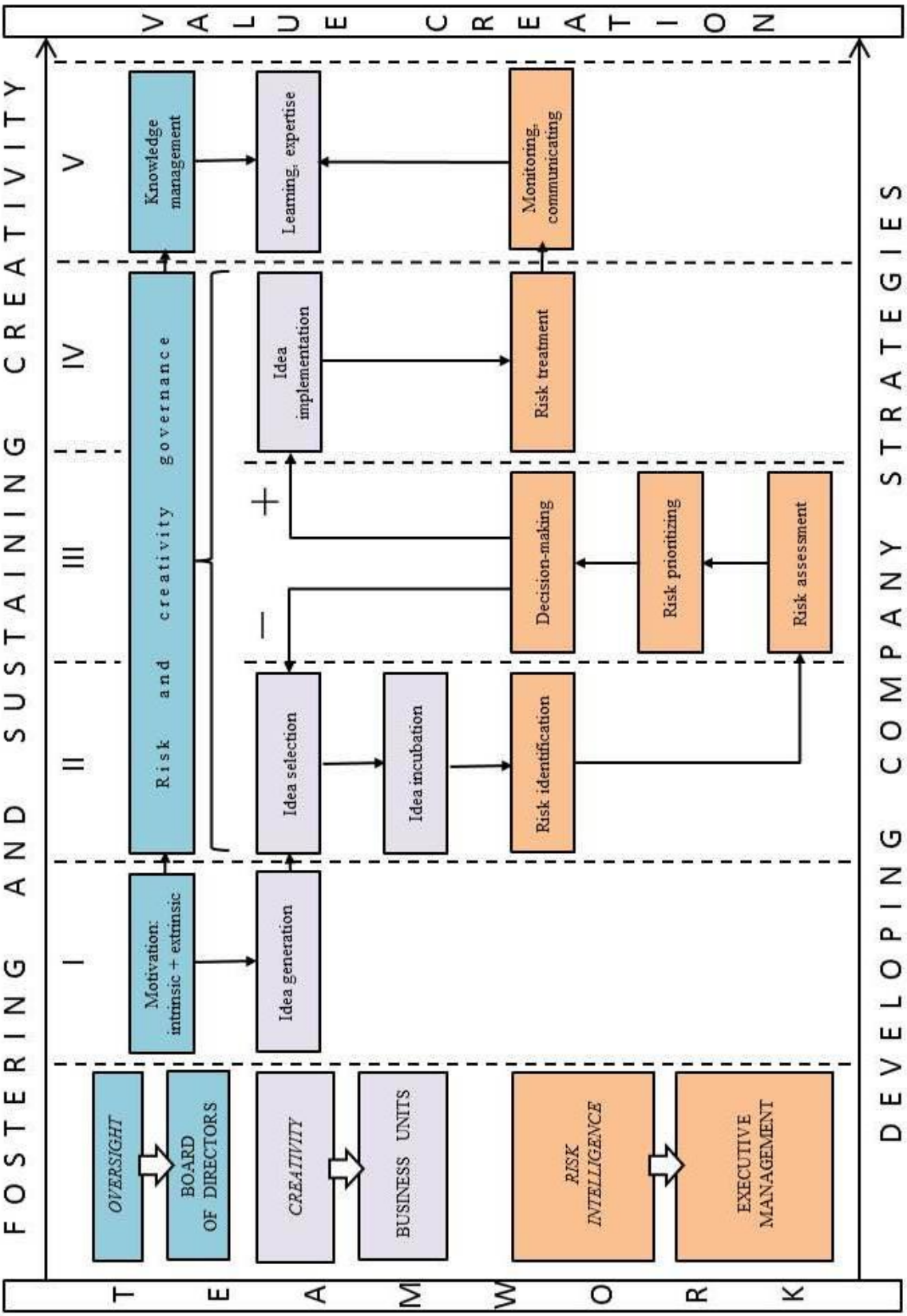

Figure 13. Creativity and risk intelligence stage process framework for P-KIBS

Figure 13 is designed to provide a sufficient way of balancing creative ability and risk intelligence system in organization. It builds on several models discussed earlier. For instance, risk management process in the framework reflects main algorithms presented by Bowers & Khorakian (2014, 28), as well as in A Risk Management Standard (2002, 4). Meanwhile, creativity flow balanced with utilized risk management system is based on updated five stages of innovation process introduced by Tidd, Bessant & Pavitt (2005, 372).

This framework can be a valuable business tool helping managers to make analytical decisions. It clarifies the controversy of managing diverse types of complex internal strategies and suggests a vivid roadmap for different parts of the enterprise, emphasizing their distinct focuses and bringing together efforts and results achieved while pursuing shared vision and common goal. The following subchapters clarify and describe the framework in detail from different points of view.

5.4.1 Main actors and responsibilities distribution

The core of this framework is what characterizes innovative risk intelligent organization. It is the way of balancing two major strategic aspects: creativity and risk intelligence – which at the first glance seem controversial. The key to managing this balance hides in role division and responsibility delegation between hierarchical levels in the company. It is essential that organization works as a united organism prioritizing teamwork and collaboration over individualism. Business strategy is built around targeted value creation, which is normally related to obtaining new knowledge and company development. Value creation is seen to be achieved through two distinct approaches: fostering and sustaining creativity, and developing company strategies.

Generally, roles in the organization are divided in the following way: board of directors is responsible for initial oversight of company strategies, while executive management and business units respond to practical challenges of enacting the balance. Therefore, the role of executive management is operating risk intelligence system, while business units deal with sustaining creative ability and fostering its flourishing.

Specifically, *board of directors* develops risk intelligent approach towards sustaining creativity in organization, reviews for completeness and approves risk management process, oversees remediation work, oversees control assessment and refines timeline estimates. Meanwhile, *executive management* designs and updates risk intelligence control patterns based on business requirements, determines threats, monitors and escalates risks within business, reports on identified risks, proposes recommended treatment, accepts and prioritizes risks, evaluates and reports on remediation. Finally, *business units* determine innovative profile of organization, operate idea generation control, ensure

successful implementation of risk management methods, provide creative solutions to risk remediation, and finally, obtain and develop creative knowledge throughout the process.

Managing the balance between creativity and risk intelligence is viewed as a stage process framework, featuring step-by-step action plan with different actors taking over certain phases. This framework leaves room for freedom of thought which is important for creative development. And it also focuses a lot on the ways risks are being mitigated, assessed, prioritized and selected. To understand significance of every stage of the process it is useful to describe each of them in detail.

5.4.2 Stage-wise peculiarities of the framework

Creativity and risk intelligence stage process framework is designed as an algorithm that can be applied on organization's canvas. The framework consists of five distinct stages specified by actors involved, their roles and implications.

- *I stage*

Risk intelligent approach combined with focus on creativity develops around the emphasis on employee motivation. *Board of directors* designs the first impulse to start the process. Everything begins with extrinsic motivation, and board of directors is responsible for providing employees with effective sources of one. The system can be as wide and vivid as the organizational resources allow. However, intrinsic motivation appears to be even more challenging to foster, but it can be done by creating a positive working environment and welcoming atmosphere where the freedom of ideas is appreciated.

Having the motivation to explore new horizons and to contribute to the organization performance, *business units* urge into the idea generation process, seeking for new solutions, new propositions, new offers, new markets and new approaches. It is essential that during this stage no risk management methods are being applied, as the stage is solely about creativity, innovation, ideas and the ways to cultivate encouraging working environment.

- *II stage*

Throughout the next three stages of the process the *board of directors* plays one general role which is risk and creativity governance. It includes facilitating the communication between business units and executive management, evaluating reasonable grounds and potential implications of the decisions made and overall control over the balance between creative process and risk management methods. Executive management and business units divide actual responsibilities, mapped in the framework, but the board of directors seeks for superior control and governance.

As during the first stage *business units* have been generating multiple ideas, second stage is devoted to idea selection and further idea incubation. Idea selection is usually based on customer preferences, market requirements and strategy incentives. Financial viability and implementation capability, especially resource-wise, are also among the factors that are necessary to analyze. It is important that the ideas drive organizational development and not stifle it. Selected ideas are later developed into certain services and incubated. It is the time when the idea is seen as a potential extension to the offered services and tested if it can fit into organization strategy.

The main contribution of *executive management* during this stage is risk identification aligned with both idea selection and idea incubation phases. By monitoring for and identifying potential risks, executive management can make a more profound decision for selecting new ideas. Analyzing opportunities the ideas can open, they prefer certain groups of risks over others, choosing the ideas with less harmful ones and getting prepared to evaluate them and treat accordingly, as risk intelligent approach suggests. Idea incubation phase gives the possibility to look inside the environment and identify the actual threats. Correctly identified risks lead to the latter successful risk management performance.

- *III stage*

After the possible risks are mapped, *executive management* has three major tasks to accomplish: 1) assessing these risks in detail, 2) prioritizing them and 3) making the final decision towards accepting or abandoning the selected idea. It is essential not only to assess risks, but also to prioritize them in order to take the risks which are beneficial for the company in the long run. If the idea is accepted, the process develops into the next stage. Otherwise, if the idea is viewed as too risky, it is declined, and the process goes back to the second stage to select another idea and apply the same technique, as proposed by this framework. *Business units* during this stage perform functional duties as required. *Board of directors* deals with control over reasonable risk prioritizing done by the executive management and confirms validity of the final decision.

- *IV stage*

After the decision has been made towards accepting the idea, *business units* aim to implement the idea and navigate it in the market. All the operational divisions of organization enhance their capabilities for the successful implementation. Main focus is developed between technical and marketing departments, responsible for bringing the idea into the market. As the new service always comes with possible threats, *executive management*, that has already identified, assessed and prioritized risks for the implemented service, begins the risk treatment process. The preparation process including choice of remediation methods starts before the new idea is implemented and continues throughout the stage as different threats appear. Means of enhancing internal control play an essential role during this stage.

- *V stage*

The final stage of the process deals mainly with knowledge outcomes. In knowledge-intensive business services knowledge is the essence of all the operations, and learning becomes a cornerstone. *Board of directors* is responsible for managing knowledge flow throughout all organizational divisions and functions and ensuring that learning outcomes have been obtained and utilized for updating processes. *Executive management* deals with monitoring and communicating processes during this stage. It is important to manage the effective communication between units, as well as with external business actors, media and consumers. Learning function is obtained through collecting diverse data, such as analyzing market response and gathering customer feedback. Monitoring the way internal systems are being updated and renewed, executive management ensures that the organization moves forward in developing its strategies, and that it creates knowledge value, which is core for the business. *Business units* get the most of practical outcomes throughout the process. Learning is a dynamic and continuous process, helping business units to learn by doing, share the knowledge and increase their professional expertise in many ways. Business units contribute to organization performance most of all, as they are the knowledge force driving the company strategy.

This framework presents the way of balancing different approaches throughout time. It reflects collaboration within organization and a clear role distinction between major functional divisions. However, there are merits and drawbacks of this framework, therefore, it is useful to analyze potential influence risk intelligence has on creativity in the context of P-KIBS companies.

5.4.3 Limits and contributions of risk intelligence for creativity

The method of combining and balancing different theories and approaches is a challenging task. It brings limits and contributions for utilization of the major concepts. In Figure 13, the majority of them are clearly visible. The first key *limitation* is concealed in a central (third) framework stage where risk intelligence becomes a unique decision-making tool for accepting or declining a potential idea implementation. After the idea is tested, it is through risk intelligent approach that the company analyzes identified risks, assesses them, and prioritizes not only the risks, but also the ideas carrying them. This phase justifies and estimates whether the company is ready to face risks fully according to the resources and potential evaluation. The final decision is based on risk management analysis and recommendations.

On the one hand, this technique keeps the organization from making costly mistakes that can lead to financial losses. It analyzes new service idea thoroughly from different perspectives and makes a profound and insightful decision. It focuses more on the pos-

sible threats rather than on opportunities the idea might potentially open later. That is why managerial foresight and governance play vital role in making the final verdict. However, any subjectively and intuitively made decision should be based on the analytical assumptions and comprehensive investigation.

In contrast to the limits risk intelligence provides creativity with, the scale of *contributions* is much wider. The first significant contribution is seen from the very first stage where creative idea generation gains an absolute freedom and no risk management tools are being applied. In an organization centering its operations on knowledge and creative development this is a defining choice. It gives a necessary impulse to start thinking, designing and creating – a priceless impulse to prevent the innovation mechanism from decelerating and deteriorating. Secondly, risk intelligence supports the last stage of the framework that deals with learning, monitoring and communicating. It balances the knowledge flow between the enterprise levels. This knowledge is very extensive, since it contains expertise and insights obtained and multiplied throughout the whole new service idea implementation process in P-KIBS: every individual in an organization develops one's competences in a number of areas, which simultaneously advances intellectual resources of the entire organization.

Finally, risk intelligence serves as a multifunctional tool for different synergetic processes in a P-KIBS organization. It balances creativity, knowledge management, service management, intellectual capital, and risk management. It ensures that any undertaken action responds to the general organizational strategy and targets value creation. It creates a system where roles are logically distributed among different organizational levels, while the whole company works as a single organism, as a team, in which every function and every individual is greatly valued.

Risk intelligence in the current study is a unique way of emphasizing the role of creativity in professional knowledge-intensive industry and a worthy technique for balancing risks and making profound decisions. It justifies organizational structuration and functional distribution. The framework presented in Figure 13 portrays and reflects these assumptions. Case-specific changes and differences may take place; however, the basic ideas are believed to be unique for all professional knowledge-intensive business services.

By answering the research questions gradually and delivering a joint framework synthesizing all conceptual research findings, the study has achieved its research purpose. Based on the insights emerged from the report, the following concluding chapter draws valuable managerial implications and provides study evaluation and further research suggestions.

6 DISCUSSION AND CONCLUSIONS

6.1 Theoretical contribution

This study addresses the knowledge gap by combining different concepts and presenting explicit relevant theoretical discussion. There is an identified gap in combining creativity fostering techniques and risk intelligence implementation. There appear to be a wide range of separate models for innovation and risk management, but very little discussion in terms of trying to find the right balance between them (Ojasalo 2008, 212; Bowers & Khorakian 2014, 25). This issue remains understudied within KIBS industry, and in particular in the context of P-KIBS.

The current study aims to shed light on the importance of well-managed combination of these different approaches, stating that they are not mutually exclusive. In order to fulfil this purpose the methodological approach utilized in this study is strictly a theory building process through conceptual methods. The theoretical contributions are identified in the current section, bringing together the main findings of the study and summarizing the answers to the research questions.

The dominance of knowledge and creativity flow constitutes the most significant success factors in KIBS companies (Freiling 2009b, 9). Managing creativity in innovative projects in knowledge-intensive environment is a challenging, but valuable initiative which requires balancing opportunities and limits. However, risk intelligence implementation can be equally beneficial. It not only identifies threats, but also analyzes and prioritizes them in order to choose the ones which will enhance creativity and overall performance. The current study is built around finding answers to three research questions.

The first research question is ‘what are the characteristics and role of creativity as a component of innovation process in a P-KIBS company’. Based on the recent findings the study explores *the role and position of creativity* and identified its main elements, as well as the major building blocks of an imaginative innovative organization. Co-development of innovations with clients among creativity and employee motivation are vital drivers for business development in the P-KIBS industry (Miles et al. 1995, 6, 67). In this study innovation is related to the whole process – from motivating the employees to generate ideas – to launching the service into the market, while creativity is seen to be incorporated in the every stage of innovation process and in every department of an organization. (Amabile 1998; Rodrigues & Veloso 2013). Fostering creativity requires managers to take risks and to change company’s strategy radically. (Amabile 1998, 87.) Given the knowledge increase throughout the stages of innovation process development and the high failure rate in innovation, knowledge management is essential. (Tidd, Bes-

sant & Pavitt 2005, 372). Creativity plays primary role in idea development in the knowledge-based and highly-competitive environments. It rises from promoted dynamism and freedom in organization, where confidence to suggest, to make a decision and to be supported is vital. Creativity is increasingly about teamwork, as well as people constituting the main asset a firm possesses. Organizational trust and leadership help employees to engage more actively in creativity process and to take risk of generating and implementing more ideas. (Rodrigues & Veloso 2013, 545.)

The second research question deals with identifying 'the characteristics and role of risk intelligence as an approach towards risk management process implementation in a P-KIBS company'. Based on discussed assumptions, this study draws up *differences between traditional risk management and a risk intelligent approach*, as well as analyzes a number of *theoretical models and frameworks*. Through examining various frameworks the study presents *an extensive argumentation* for choosing a risk intelligent approach over traditional risk management. It is important that risk analysis does not limit creativity development, but foresees the new opportunities for the business. The company that uses risk intelligence techniques to manage risk challenges and potential outcomes throughout all parts of organization becomes a risk intelligent enterprise (Deloitte 2013, 4).

Risk intelligence considers three levels of risk responsibility: risk governance and oversight performed by the board of directors, risk infrastructure and management performed by the executive management, and finally, risk ownership distributed between business units. Through risk intelligence professional knowledge-intensive business services aim and gain more profound competitive advantage. Developing knowledge accessibility throughout organizational levels is vital for comprehending and managing risks. Combining knowledge management incentives with risk intelligence insights P-KIBS companies open wider opportunities for developing greater strategies. (Massingham 2010, 466.)

Finally, the third research question is 'how can risk intelligence and creativity be balanced in P-KIBS'. Attempting to provide an explicit answer, the study advances the discussion and results in *a joint framework* (see Figure 13) *synthesizing all conceptual research findings and theoretical blocks* analyzed earlier. Creative thinking skills are absolutely essential when dealing with risks. The more creative the company gets in risk management process, the more certain the environment becomes which the company operates in. (Toledo 2012, 21.) The role distribution is the essential part of a risk intelligent planning approach, especially in terms of focusing on creativity during innovation process. For instance, promoting trust and establishing motivation system encourage employees to generate new ideas (Amabile 1998, 79; Rodrigues & Veloso 2013, 546; Bowers & Khorakian 2014, 25).

The main theoretical contribution of the study is a proposed joint framework which is designed to provide a sufficient way of balancing creative ability and risk management systems in a P-KIBS organization. The key to managing this balance hides in role division and responsibility delegation between hierarchical levels in the company. It is essential that organization works as a united organism prioritizing teamwork and collaboration over individualism. Business strategy is built around targeted value creation, which is normally related to obtaining new knowledge and company development. Value creation is seen to be achieved through two distinct approaches: fostering and sustaining creativity, and developing company strategies. The framework consists of the models and findings analyzed throughout the study. It features *a step-by-step action plan* with different actors taking over certain phases, leaving room for freedom of thought which is important for creative development.

By answering the last research question the study has reached its logical end, achieving its research purpose, providing *a comprehensive critical literature review* and answering research questions *gradually*. The study concludes that *risk intelligence serves* as a multifunctional tool for different synergetic processes in a P-KIBS organization. It *balances* creativity, knowledge management, service management, intellectual capital, and risk management. It *ensures* that any undertaken action responds to the general organizational strategy and targets value creation. It *creates a system* where roles are logically distributed among different organizational levels, while the whole company works as a single organism, as a team, in which every function and every individual is greatly valued. Risk intelligence in the current study is a unique way of emphasizing the role of creativity in professional knowledge-intensive industry and *a worthy technique* for making profound decisions towards risks.

6.2 Entrepreneurial and managerial implications

Irrespective solely conceptual methods used in this study there are extensive entrepreneurial and managerial implications that can be highlighted. The strategy of a risk intelligent company is suggested to be based on *frameworks*, which reduce and prevent it from choosing an incorrect direction of development. Creativity and risk intelligence stage process framework presented in the study is designed as *an algorithm that can be applied* on organizational canvas. The framework consists of several distinct stages specified by actors involved, their roles and implications. Additional stage-wise description provides *detailed tasks* for each of the enterprise levels, while combining strategies into one. The insights driven from the framework *can be utilized* by a vast range of specialists from strategists to risk managers, and from innovation managers to entrepre-

neurs. Any business that is designing and delivering a knowledge service can potentially gain valuable thoughts and expand conceptual understanding from the present study.

The study reveals the core of several terms and theories through explanation, analysis, synthesis and utilization. However, the primary significance of the study conceals in the proposed *stage process framework*. It answers a number of questions regarding ways of managing creativity and risks in professional knowledge-intensive businesses. It can become a valuable *business tool* helping managers to make analytical decisions. It *clarifies the controversy* of managing different types of complex internal strategies and suggests a vivid *roadmap* for separate parts of the enterprise, emphasizing their distinct focuses and bringing together efforts and results achieved while pursuing a shared vision and common goal. It is essential that organization works as a united organism prioritizing collaboration over individualism.

The study aims to help managers to find *strategic balance* between creativity and risk intelligence implementation. Managing this balance means creating new opportunities for the business, discovering more efficient ways of facilitating and linking different perspectives. For the managers, the study reveals the significance of emphasizing on *employee motivation* as an initial push-factor in the creative idea generation process. It also highlights the importance of maintaining *creativity freedom* in the organization, as well as focusing on *learning outcomes* and *knowledge transfer* in the company. Efficient business strategy requires targeting value creation, which is normally related to obtaining new knowledge and company development. Value creation is seen to be achieved through *fostering and sustaining creativity*, as well as *developing company strategies*.

For the entrepreneurs, the study shows the significance of *nurturing* creative development and *supporting* knowledge sharing. Therefore, *synergy* between departments throughout organizational levels is crucial and ensures counterproductive mutual learning. If utilized, the theoretical framework has a potential to keep the organization from making costly mistakes, which can lead to financial losses. It analyzes new service idea thoroughly from different perspectives and is expected to serve as an applicable instrument for making *a profound and insightful decision* towards service idea implementation process. The study represents a valid example of creating a functional business tool through combining diverse genuine concepts.

6.3 Evaluation of the study

The main value of the present study is the synthesis of knowledge driven from different topics. The study is characterized by *advanced connectivity* between theories, covering the knowledge gap. Specific contextual restrictions limit the breadth of generalizability.

However, it does not prevent the study findings from further applicability in empirical research. (Lincoln & Guba 1985, 296; Bacharach 1989, 496.) The current study has been developed progressively through enhancing theoretical discussion. The systematic literature review is based on reliable high-quality sources of information, which were further investigated in order to respond to research questions. The answers to these questions are strictly theoretical without any empirical aspects, as the study is a conceptual work. Its main theoretical implication relates to integration of the various essential concepts into one single model.

According to Dubin (1969), a good theory is required to match several criteria. The proposed theoretical stage process framework develops understanding about organizational structure and role distribution in P-KIBS companies. It brings novelty to the existing knowledge on creativity, innovation, risk management and risk intelligence. It demonstrates interactions between these concepts, hierarchy, functions and tasks in organization. All the elements of the framework are well-defined and are explained explicitly throughout the study. The framework includes contextual limitations, such as the new service idea implementation process in P-KIBS companies. Considering mentioned requirements, the proposed theoretical framework can be defined as "*a good theory*".

Determining the nature of the study implications is crucial for its further evaluation. For instance, based on Whetten's guidelines (1989), a theory analysis considers several issues. *Newness.* The framework covers an existing research gap with explicit knowledge synthesis. Its significance is built around a value-added contribution to the existing theoretical basis, extending them to the context boundaries. *Value*. The framework has a potential to serve as a practical business tool, simplifying role distribution issues for the managers. It can be easily applied in the enterprise, helping to reshape current strategies. *Reasoning*. The study is characterized by sufficient logic flow and valid evidence. Argumentation provided throughout the report is convincing, being grounded in reasonable research. *Coherence.* The constructs of the subject are explicitly revealed in critical theoretical discussion, ensuring good understanding for the readers. *Quality.* The central questions, ideas and assumptions are transparent and easily accessed. The conclusions drawn from the sections respond to the intended purposes. The report is long enough to cover the subject and short enough to be interesting for the reader. *Relevance*. The topic of the study is of a high contemporary interest, as both sets of theories constitute the center of major entrepreneurial discussions to-date. The earlier introduced framework is likely to advance both further empirical testing and theoretical debate. *Target audience.* The study and the theoretical framework anticipate targeting equally academic audience and entrepreneurially-minded individuals. For academic circles theoretical conclusions of the study have potential to foster further investigation and examining, in particular empirically. As for the entrepreneurs and managers, the

study provides essential insights for practical utilization that are not heavily theorized and complex. (based on Whetten 1989, 491-494.)

Finally, based on Lincoln & Guba (1985) trustworthiness of the present conceptual study can be measured through the following selected features:

- careful utilization of theory building approaches and methods
- credibility of the sources
- validity of evidence
- consistent and coherent argumentation
- reliability of the conclusions drawn from the findings
- applicability in empirical research
- prolonged commitment to the topic. (Lincoln & Guba 1985, 290-305.)

Methodological trustworthiness is determined by profound theory building approaches investigation, which is presented in detail in the second chapter. The study is conducted according to theory positioning, conceptual framing and designing. Credibility of the sources and validity of evidence are used as the main factors for building a systematic critical literature review, while consistent and coherent argumentation is based on the extensive theoretical background findings. Reliability of the conclusions drawn from the study is determined by the logic flow and explicit analytical work. The framework designed in the study is not only applicable for further research, but is also valuable for future managerial testing. And finally, the commitment to the study is defined by the overall quality of the report and sufficient interest towards the topic.

6.4 Limitations and suggestions for further research

The present study is a strictly conceptual work without empirical aspects, therefore, the first limitation deals with the lack of empirical testing. The theoretical framework proposed in the study, as well as theoretical conclusions need to be examined and analyzed in practice. Empirical research is recommended to concentrate similarly on P-KIBS companies, covering the relevant research gap. Moreover, the empirical findings are expected to alter and modify the proposed framework in accordance with the number of studied cases. Among the other suggestions for further research is advancing the present theory into a set of propositions. These propositions need not only to represent theoretical contribution of the study, but also to allow designing more explicit managerial guidelines for utilizing the framework.

The other limitation of the study reflects its main contextual focus. The study is restricted by professional knowledge-intensive industry boundaries. It means that it is only relevant regarding P-KIBS companies. It is suggested to expand the contextual limitations further by investigating broader range of business services. Doing so will

affect conceptual variables, changing and reshaping them, meanwhile increasing the level of theoretical generalizability and abstractness. Particular attention should be given to the ways of balancing creativity and risk intelligence on a bigger scale. Further theoretical research will advance the academic debate, opening new perspectives to the topic.

The new service idea implementation process in P-KIBS is the other contextual study limitation. The balance between creativity and risk intelligence is viewed in this study from the point of view of choosing and implementing the most promising new service idea. For the further research it might be potentially valuable to compare how this interrelation works in the case of product launching process and what are the main benefits and detriments of risk intelligence utilization. Additionally, further research can aim to investigate ways of managing balance between other genuine entrepreneurship concepts, basing the study on existing models and frameworks, and focusing on some other business industry.

7 SUMMARY

The interrelations between creativity process and risk intelligence is an understudied area. The current study attempted to find the balance between creativity and risk intelligence through the prism of the new service idea implementation process in P-KIBS, which appears to be bond with both innovation and risk simultaneously. The study aimed to reshape and combine existing theories to fit into the studied context in order to explain the problem theoretically. The research purpose of the study was *to find out how the balance between creativity and risk intelligence can be managed in professional knowledge-intensive business services (P-KIBS).*

The methodological approach utilized in the study was strictly conceptual without empirical aspects. Therefore, the body of the report was constituted from a systematic literature review which was a main investigation tool for collecting necessary information, defining and explaining theoretical blocks through conceptual analysis. Theorizing was done via building a meta-framework. Contrasting different perspectives and points of view helped to advance the report greatly. A theoretical meta-framework in this study represented a stage process model based on logic and proper order.

The first block of literature review and therefore, relevant theoretical discussion dealt with role of creativity and ways of sustaining its presence in a P-KIBS company. It answered the first research question: w*hat are the characteristics and role of creativity as a component of innovation process in a P-KIBS company.* Creativity was analyzed as being a major component of innovation and described from the point of view of professional knowledge-intensive industry. The next chapter identified differences between traditional risk management and risk intelligence, presenting and critically evaluating existing risk management models and frameworks in order to find a suitable fit for P-KIBS companies. The chapter responded to the second research question: w*hat are the characteristics and role of risk intelligence as an approach towards risk management process implementation in a P-KIBS company.* Finally, the last chapter answered the third research question: *how can risk intelligence and creativity be balanced in P-KIBS*. It introduced the recent discussion on the problem of combining risk management and creativity suggesting risk intelligence utilization as a potential solution and presenting a new theoretical stage process framework.

The framework consisted of several models discussed throughout the report. It introduced the way of balancing two major strategic aspects: creativity and risk intelligence. The key to managing this balance hid in role division and responsibility delegation between hierarchical levels in the company. In the present study business strategy was seen to be built around value creation, obtaining new knowledge and company development. Value creation was seen to be achieved through two distinct approaches: fostering and sustaining creativity and developing company strategies. The framework clari-

fied the controversy of managing different types of complex internal strategies and suggested a vivid roadmap for different parts of the enterprise, emphasizing their distinct focuses and bringing together efforts and results achieved while pursuing shared vision and common goal.

The proposed framework left room for freedom of thought which is important for creative development. Additionally, it focused on the ways risks are mitigated, assessed, prioritized and selected. It ensured that any undertaken action responded to the general organizational strategy and targeted value creation. Risk intelligence in the current study was seen as a unique way of emphasizing the role of creativity in professional knowledge-intensive industry and a worthy technique for balancing risks and making profound decisions. It justified organizational structuration and functional distribution. The framework reflected all the conceptual research findings aiming to be a valuable business tool helping managers in professional knowledge-intensive business services to find profound analytical solutions and to make insightful decisions.

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