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Abstract
Purpose – The purpose of this paper is to define the contribution of intellectual capital (IC) of the board of directors (BDs) in generating IC of a company, to develop a definition of the IC of the BDs, as well as two of its major elements: human capital (knowledge, skills, and experience of board members, etc.), and social capital (relationships and networking opportunities of board members), and to clarify the relationship between these elements and financial performance indicators of companies based on a literature review on the topic.
Design/methodology/approach – A literature review and analysis was applied as this study's research design.
Findings – The authors suggest that IC is generated not only by company staff, but also by governing bodies, particularly the BDs, whose members are not always under contract with the company in the traditional sense. Members of the board use their knowledge, experience, and networking opportunities to build IC for effective monitoring, advising, and providing the company with resources. In this sense, the BDs serves as a source of IC for a company, being the main internal corporate governance mechanism that leads to value creation in a company, taking into consideration the interests of all stakeholders.
Practical implications – The research indicates that the personal characteristics of board members may influence the performance of a company. Therefore, companies should be recommended to carefully select candidates for nomination to the board.
Originality/value – This study contributes to further development of the concept of IC of the BDs by bringing together the theory in the field and the empirical results of studies on the various elements of board capital in a company's value creation.
Keywords Social capital, Intellectual capital, Human capital, Boards of directors, Intellectual capital of board of directors
Paper type Literature review

1. Introduction

In the twenty-first century, knowledge-based resources have become an important factor in the development and success of companies. The ability to manage intellectual capital (IC) is one of the key competencies of companies in the knowledge economy.

Studies show that since the 2000s, only 6-30 percent of company value is related to tangible assets; the remainder is generated by the company's IC (Fuller, 2002). Effective management of IC and its integration into company strategy maximizes performance indicators and the value of the company as a whole (Nelson, 1991). Successful and competitive companies continuously introduce innovations based on new technologies, knowledge, organizational culture and structure, and the experience and skills of their staff. Therefore, the authors conclude that the value of companies is increasingly generated by their IC (Edvinsson and Malone, 1997; Furman *et al.*, 2002; Guthrie, 2001; Lev and Feng, 2001; Powell and Snellman, 2004; Stewart, 1997; Sveiby, 1997). People – their knowledge and expertise, innovative capacities, and stakeholder relations – and

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organizational culture have become the most significant resources for the development of modern companies.

This study explores various approaches to the IC definition. It adopts a dynamic point of view to define this concept. The main research question of this study is:

RQ. Who generates IC in a company?

The traditional approach to this question is: IC is created and increased by the company's employees (Edvinsson and Malone, 1997). The authors, however, suggest taking a broader view, considering the company's structural divisions and governing bodies. Therefore, the authors assume that IC is generated not only by the company's staff, but also by other divisions, governing bodies, and stakeholders, who may not be under contract to the company in the traditional sense, for example: advisory councils, suppliers, volunteers, strategic allies, and partners. One of the most important bodies of which members are not necessarily employed by the company is the board of directors (BDs). However, members of the board may use their IC, i.e. knowledge and skills, experience, and networking opportunities, to effectively monitor management and provide the company with valuable resources, thus contributing to an increase in the company's value (Hillman, 2005).

One of the most important functions of the BDs is development and implementation of company strategy. The board's roles connected with the firm's strategy are defined as follows: leadership and active involvement in setting company objectives and goals (Ingley and VanderWalt, 2001), and participation in the strategic planning process (Johnson *et al.*, 2007; Hendry and Kiel, 2004; Kemp, 2010). As noted by Rebeiz (2016, p. 3), the boardroom shapes corporate leadership, and a well-designed BDs leads to a well-performing team, that in turn impacts corporate performance. Since the board is the main governing body, it should be effective in order to provide direction for the firm through its meetings, activities, and communications (Nkundabanyanga *et al.*, 2013).

The system of corporate governance should be developed in a company in order for there to be all the necessary conditions to create further value for the shareholders, but at the same time taking into consideration the interests of all the other stakeholders, for example, suppliers, volunteers, strategic allies, and partners. Of course, the IC of a company can be generated by the above-mentioned stakeholders, who help the company to achieve competitive advantages in the market. However, this paper focusses on the BDs because it has the function of strategy development and implementation that helps to generate long-term competitive advantages for a company that can lead to further value creation. The BDs, as an internal corporate governance mechanism, has the important function of providing a signal to external investors concerning corporate governance quality and shareholders' rights protection that impacts company value and investment attractiveness. This is why the authors have chosen the BDs, as the object of this research, as it can be considered as the driver of IC generation that leads to a more effective work environment and the employment of other elements of IC in a company.

It should also be mentioned that the IC of the BDs plays a specifically important role in multinational companies due to its strategic role. In such companies, members of the BDs, due to their knowledge and experience, help to gain competitive advantages not only in one country but also in several countries.

As has been said above, according to the authors' point of view the BDs is also the driver that makes other elements of IC work more effectively. In this study, the authors discuss and develop a definition of the IC of the BDs within the concept of dynamic capabilities, based on the previously developed concept of IC itself as a value driver that enhances company profitability (Bismuth and Tojo, 2008). The authors analyze the existing literature on the two main elements of the IC of the BDs: human capital and social capital, and make conclusions on the relationship of these elements with various measures of corporate performance. The main proxies that are used for measuring the elements are also highlighted.

The rest of the paper is organized as follows. Section 2 addresses the issue of further development of the IC concept. In Section 3, the authors determine the concept of the BDs IC. The elements of the board's IC are addressed in Section 4. Section 5 concludes and discusses the areas for further research, and the implications and limitations of the research.

2. IC of a company: development of the concept

Active discussion of the definition of a company's IC took place in the 2000s, during the second stage of developing the concept (Dumay and Garanina, 2013). The authors of one of the first papers on this issue (Stewart and Losee, 1994) defined IC as the knowledge a company has that can be used to create a competitive advantage. A later study (Edvinsson and Sullivan, 1996) provided a similar definition of IC as the knowledge contained within a company, which can subsequently be turned into value. In a study by Lönnqvist and Mettänen (2002), IC is defined as a resource for creating a company's value, based on the knowledge and skills of employees, organizational resources, business processes, and shareholder relations. The authors of this paper believe, however, that the concept of IC should not be limited to knowledge. Lev (2001) provides the following definition: "intellectual capital is an intangible source of value (promise of future gain), borne by innovations (inventions, discoveries), unique organizational projects, or HR management practice."

A summarized version of the definition of IC can be defined in the following way: "intellectual capital is an intangible source for creating a company's value." This definition follows the resource-based view, which lays the foundation for developing the concept of a company's IC. Since the 1980s, the idea that a company's competitiveness was influenced by internal resources and competencies, as well as the external environment (which had previously been seen as the central element), became predominant within the framework of the resource approach. The development of the resource-based view continued within the framework of the concept of dynamic capabilities defined in the 1990s by Teece *et al.* (2003). It is important to note the principal difference of the resource-based approach. This approach presents a new mechanism for obtaining competitive advantage, based not only on the company's intangible resources, but also, more significantly, on the company's ability to derive economic benefit from such resources.

The principal difference between the point of view expressed in the article by Volkov and Garanina (2007) and the general definition of IC given above, lies in the fact that IC must be defined not statically as a "stock of knowledge," but dynamically as the ability of a company to extract economic benefit from the IC it possesses.

When it comes to the static and dynamic aspects of IC, the authors of this paper believe that IC must be able to adapt to changes in the external environment. According to one of the postulates of the concept of dynamic capabilities, "economic prosperity is based on knowledge and its useful application" (Teece, 1981). The central focus must not be just on creating knowledge as an asset, but on distributing and using this knowledge (Teece, 1996). It is in this context that the dynamic capabilities of the company are especially important, including the ability to recognize and develop new opportunities, as well as reconfigure and protect knowledge as an asset that can be used to create competencies, complementary knowledge, and technologies to achieve a sustainable competitive advantage (Teece, 2004). Determining the presence of IC is not enough to increase efficiency, rather it is essential to develop competencies in the most effective manner in order to extract economic benefit in the future. Therefore, to develop the concept stated in Volkov and Garanina (2007), the authors provide the following definition of IC: "IC is the ability of a company to extract future economic benefits from the intangible resources available to it."

3. IC of the BDs as a source of value for the company

While discussing the concept of IC, a very important question arises: who generates the IC of a company? Two main sources can be identified: IC may be generated either by internal (human resources) or by external resources. Nicholson and Kiel (2004) define the IC of the Board as "the intellectual resources such as knowledge, information, experience, relationships, routines, and procedures that a board can employ to create value."

Therefore, as a formal governing body of the company and an internal corporate governance mechanism that protects the interests of shareholders, seeking to create new value in the interests of the company's stakeholders, the BDs can serve as a source of value, in the form of IC, of a company. To analyze the ways in which the BDs can contribute to the company's value from the perspective of various IC elements, it is necessary to discuss the BDs role and main functions.

The BDs can be defined as a group of elected individuals overseeing a system of relationships, processes, and structures aimed at framing and implementing company governance and protecting shareholders' interests, while taking into account the interests of other stakeholders. The role of the BDs is therefore to maintain effective governance of the company. From the agency theory perspective, the board's role is monitoring and control (Daily *et al.*, 2003; Fama and Jensen, 1983; Eisenhardt, 1989; Roberts *et al.*, 2005), as well as the assessment and compensation of managers (Hillman and Dalziel, 2003). Based on the resource-dependency theory, developed by Pfeffer and Salancik (1978), the important role of the BDs is to provide access to valuable resources (Hendry and Kiel, 2004; Hillman *et al.*, 2009; Pfeffer, 1972, 1973). According to these theories, we could state that the strategic role of the board is based on monitoring and resource providing, including advising, as these competencies are necessary in order to be able to effectively develop a strategy.

Evidently, the structure, composition and personal characteristics of the BDs, like the qualifications, experience, competencies, and personal characteristics of its members, influence a company's performance and value. Many studies focus on the relationship between the composition of the BDs and the various characteristics of the board members and the company's financial performance indicators (e.g. Adams and Ferreira, 2009; Adams *et al.*, 2010; Adjaoud *et al.*, 2007; Berezinets *et al.*, 2013; Bhagat and Black, 2002; Boone *et al.*, 2007; Coles *et al.*, 2008; Carter *et al.*, 2003; Dalton *et al.*, 1999; Ferreira, 2015; Lipton and Lorsch, 1992; Muravyev *et al.*, 2014; Westphal and Milton, 2000; Yermack, 1996). These studies seek to answer the question: which board structure and composition (board size, proportion of non-executive and independent directors, gender diversity, etc.), and what characteristics of board members (competencies, experience, and networking connections among others) best contribute to increasing the company's value. Fewer studies are devoted to the relationship between the BDs, as a source of IC for the company, and corporate performance. Considering the BDs is a very important mechanism of company governance, one could hypothesize that the composition of the board and the various characteristics of its members could provide the company with competitive advantages, create value, and serve as sources of the company's IC. Members of the board, as providers of knowledge, skills, and experience, contribute to the IC of the BDs, and, ultimately, the IC of the company.

One of the first papers that studied these issues from the perspective of agency theory and the resource approach (which, in essence, define the concept of IC) was that by Hillman and Dalziel (2003). The study demonstrated that for monitoring and providing access to resources, the components that make up the BD's human capital, such as the knowledge, skills, experience, and education, are critical. Researchers have also discussed the social connections between board members and various stakeholders, which represent the social capital of the BDs. Thus, according to the resource-based view, BDs could benefit to the company in two ways – first, through knowledge and expertise, and second, through the ties and networks of its members with the external environment.

Hillman and Dalziel (2003) were the first to mention the concept of "the capital of members of the board of directors," which includes human capital (the knowledge and skills of board members) and social capital (relationships between board members, as well as their connections with other stakeholders, from both inside and outside the company). The authors emphasize that each director contributes his or her knowledge, experience, and competencies, as well as networks and resources, to the BDs. Members of the board channel resources into strategically developing the company and into the company's reputation, finding new contacts, and management consultancy (Zahra and Pearce, 1989). Pfeffer and Salancik (1978), who are among the original creators of the resource-based view, stress that when a company nominates a board member, it expects the new member to channel his/her resources to the company. Empirical studies suggest that the value of board capital varies according to the context and particular needs of each individual company (Wincent *et al.*, 2010). Therefore, the company's BDs generally carries a certain amount of collective social and human capital, which includes the human and social capital of each individual member. This position regarding the formation of the BD's IC was expressed by Hillman and Dalziel (2003) and Kor and Sundaramurthy (2009). In Figure 1, the structure of the company's IC, including that of the BDs, is provided.

Given that the BDs is responsible for developing company strategy, and applying a dynamic approach to the company's IC as shown on Figure 1, it would be incorrect to define the IC of the BDs as "the ability of the company to extract future economic

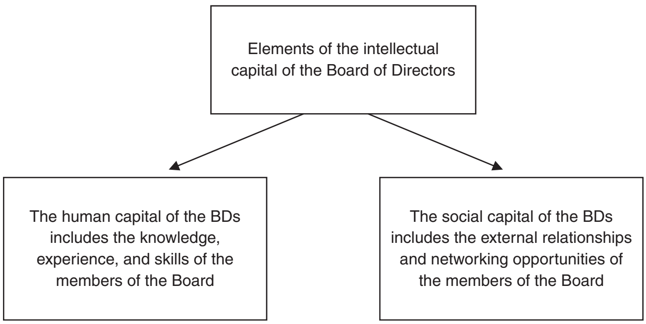

Figure 1.
Sources of generating company's intellectual capital

benefits from human and social capital of the BDs." Logically the IC of the BDs should come from the board itself. Members of the board are supposed to use the IC they possess to create value and to motivate other elements of the IC of a company to perform more effectively. Therefore, we define the IC of the company's BDs as follows: "The IC of the company's Board of Directors is the ability of the Board to extract future economic benefit from the intangible resources possessed by members of the Board (their knowledge, experience, skills, networking resources, etc.)."

4. Elements of board IC

Having defined the concept of the BD's IC, we proceed with the analysis of its components. As has been already mentioned, the current literature on the subject identifies two elements of the board's IC: human (Carpenter and Westphal, 2001; Dalziel *et al.*, 2011; Castanias and Helfat, 2001; Schefczyk and Gerpott, 2001) and social (Devos *et al.*, 2009; Hillman *et al.*, 2011; Ruigrok *et al.*, 2006; Stuart and Yim, 2010) (Figure 2).

4.1 Human capital of the BDs

The current approach to defining the human capital of the BDs, as shown in Figure 2, which summarizes the ideas from various studies (Certo, 2003; Hillman and Dalziel, 2003; Dalziel *et al.*, 2011; Jensen and Zajac, 2004), presupposes that the human capital of the board includes the knowledge, skills, and experience of its members.

Researchers agree that the human capital of the BDs includes education, experience, and knowledge of the board members; however, it is not easy to assess these elements. Carpenter and Westphal (2001) have studied ways in which members of the BDs, who have occupied the same position in other companies, use their prior experience and

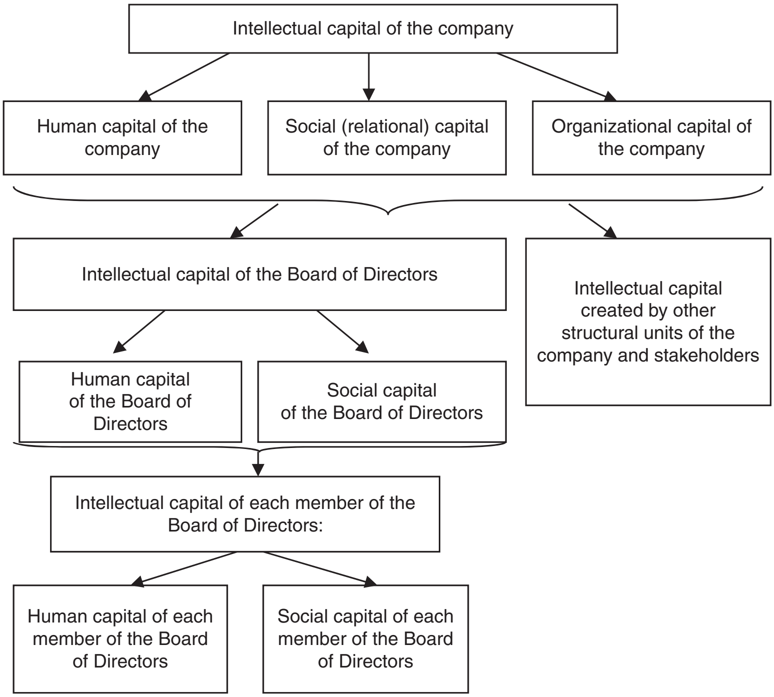

Figure 2. General approach to defining the elements of BDs' intellectual capital

knowledge to influence strategic decisions in their current place of employment. They suggest that experience in strategically similar companies, with a similar corporate strategy in comparable environments, has a positive impact on the performance of board members in their current positions. Experience in similar companies helps them to create a corresponding knowledge structure, which improves the quality of the decisions adopted by the BDs (assessed through surveys of board members), and is likely to lead to positive results in stable economic conditions; in unstable economic conditions, the experience and knowledge gained allows Board members to perform their monitoring functions more effectively. This is because in unstable circumstances, experience enables board members to find solutions to unusual situations. Carpenter *et al.* (2003) later concluded that board members' international experience might be directly related to the company's revenue abroad; this is because such experience leads to strategic solutions that are more balanced and effective in the sphere of the company's international growth. Similarly, research demonstrates that if board members have experience in mergers and acquisitions, this improves the results of such transactions in the future (Kroll *et al.*, 2008; McDonald *et al.*, 2008). Clearly, experience expands the knowledge and competencies of the directors, which leads to more effective strategic decision making. Dalziel *et al.* (2011) tested the hypothesis that the knowledge that directors acquired during training, as well as their experience in business ventures and attracting finance, make them better prepared when making strategically important decisions relating to research and development (R&D) investments. The survey by Dalziel *et al.* questioned 225 US companies in 2001-2003. The authors analyzed the relationship between the attributes of board members, such as higher education, additional education, and experience in certain spheres of business (business ventures, technology, or investment banking), and the level of R&D expenditure in the company. They reached the conclusion that the relationship between human capital and R&D investment differed for internal and external members of the board. In particular, they concluded that work experience and education of external directors promotes investment in R&D.

Hillman (2005) highlights the importance of political experience among members of the board. Work experience in government bodies was considered to be significant for such indicators as market capitalization, Tobin's *Q*, return on assets (ROA), and return on sales. The study tested its hypotheses with a sample of 300 US companies. The author concludes that political experience of the members of the BDs is related to the company's financial performance due to better understanding by such directors of the economic situation, legislation, and regulation, as well as their easier access to resources.

Another area of research is the relationship between the human capital of the BDs, measured by experience in a narrow specialization, and the company's performance (Carpenter *et al.*, 2003; Kroll *et al.*, 2008; McDonald *et al.*, 2008). These studies suggest that narrow specialization allows members of the board to accumulate knowledge and skills in a particular area, and then use them to solve strategically important issues at board meetings. Director diversity also influences the development of innovation within the company. Individual board members, whose professional experience, specializations, and opinions differ, combine their ideas, forming the information pool of the BDs. Prior research indicates that such professional diversity in board members helps to stimulate the creation of high-quality innovative solutions through interaction. In the process of such interaction, members of the board identify, discern, and synthesize various views (e.g. Van der Vegt and Janssen, 2003).

A number of researchers believe that the human capital of board members, evaluated on the basis of their experience in venture companies or in raising capital, is correlated with company performance (An and Jin, 2004; Boeker and Wiltbank, 2005; Bruton *et al.*, 1997). Studies demonstrate that companies employing board members with such an expertise can attract more commercial investment in the future, and with such board members, firms usually borrow at lower interest rates than companies where directors lack such experience (Boeker and Wiltbank, 2005).

With regard to human capital, some researchers use tenure with the same company as a proxy parameter. The question is: how is a director's tenure related to the quality of his/her decision making. The authors' conclusions are mixed. On the one hand, such experience allows the board members to be more informed about various aspects of the company and be more aware of available resources (Golden and Zajac, 2001). On the other hand, directors who are working for the same company for a long time become less objective in their views on the situation within the company, may not recognize new opportunities arising in the external environment, and be less effective when it comes to monitoring management (Hillman *et al.*, 2008). A number of legislation and corporate governance codes require independent directors to step down after a certain period of tenure, because they become less effective in monitoring. In Russia, the Corporate Governance Code (Kodeks Korporativnogo Upravleniya, 2014, p. 104) sets tenure of an independent director at seven years. A number of authors agree that there is no direct relationship between a tenure in one company and various performance indicators; rather, this relationship could be non-linear (quadratic) (Kor and Sundaramurthy, 2009; Musteen *et al.*, 2010).

Another important aspect investigated recently is the role of human capital provided by external directors on the board, who are chief executive officers (CEOs) in other companies. Fahlenbrach *et al.* (2010) hypothesize that companies should be interested in attracting CEOs of other companies. The performance hypothesis presupposes that such external directors are especially valuable, because their authority and experience allow them to monitor management and provide advice more effectively than other external directors. After such a director is appointed, the company's operating performance indicators are expected to improve, and the decision-making process to become more effective. According to the certification hypothesis, if a company attracts the CEO of another company to serve on its board, it sends the following signal: because human capital of a business leader is sensitive to his or her reputation, if he or she agrees to serve on another company's BDs, it means that he or she holds this company in high regard. Essentially, this means that the company passes "market certification," and attracting such a board member will positively affect its market value. Moreover, Fahlenbrach *et al.* (2010) stress that the positive effect is observed even if such a director has no tangible influence on the company's activities. In its survey, PricewaterhouseCoopers (2012, p. 5) confirmed the significance of human capital in the formation of BDs in Russian companies. The study found that most BDs primarily seek to hire former and current senior managers as independent directors, which allows them to use their experience and relationships to perform their duties more effectively.

We assume that the existence of this reputational effect, supported by research, confirms the value of human capital, which, although it is intangible, is an important aspect to be assessed from the perspective of its effect on company value.

Gender diversity of the board is considered to be one of important human capital attributes that is related to company performance (Simpson *et al.*, 2010; Toumi *et al.*, 2016). A number of empirical studies focussed on the role of women on the board

(Adams and Ferreira, 2009; Bilimoria, 2000; Davies, 2011; Nielsen and Huse, 2010; Pearce and Zahra, 1991). Most of the researchers agree on the positive effect of female participation on boards due to their active participation as members of various committees (Adams and Ferreira, 2009), ability to improve the decision-making process in a boardroom (Bilimoria, 2000; Bilimoria and Huse, 1997; Pearce and Zahra, 1991), ability to pay more attention to environmental issues, and to have a greater sense of corporate social responsibility (Nielsen and Huse, 2010) among other characteristics.

Studies of corporate governance and the BDs of Russian companies in particular, which are conducted annually by a number of consulting companies and associations, allow us to draw the following conclusions. A study by PricewaterhouseCoopers (2012) suggests that the knowledge, skills, and experience of the board members of Russian companies, which form the human capital of the BDs, serve as one of the main factors determining company efficiency. These qualities have also been found to be adaptable to various economic circumstances. A survey of 73 board members from major Russian public companies carried out by PricewaterhouseCoopers in 2012 showed that board members traditionally consider work experience in the relevant sector to be the most important element of human capital. Analyzing the results of the survey, PricewaterhouseCoopers experts specifically noted the importance of knowledge in the sphere of risk management and experience in international companies. These factors allow Russian companies to obtain competitive advantages in the contemporary dynamic economy. According to another study by PricewaterhouseCoopers (2014), the range of competencies of board members changed somewhat after Russia encountered an economic downturn. Today, board members consider the top strategically important skills as the following: experience in the industry, experience in risk management, and financial expertise, which in general agrees with the conclusions of the 2012 study.

Meanwhile, experience in international companies has become less significant in the current economic situation, and is no longer seen as a strategically important competence. This can be explained by the fact that Russian business is becoming increasingly localized. It is noteworthy, however, that the need for knowledge and experience in technologies appeared on the list of competencies of board members among Russian companies. The results of the study show that the demand for board members with such competencies has doubled over the past 12 months (PricewaterhouseCoopers, 2014). Moreover, marketing competencies are becoming more and more important due to the changing geography of Russian business. Russian companies have been expanding into related industries and diversifying their activities. Improving the quality of corporate governance, solving personnel problems, and the need to develop systems for remunerating staff and evaluating their performance have also been found to increase board members' competencies in HR management and law. Overall, the results of the 2014 study agree with those of 2012. The authors conclude: "Boards of Directors continue to lack directors who have the required knowledge and experience" (PricewaterhouseCoopers, 2014, p. 5). In particular, experts argue that it is not common practice for Russian companies to train their board members, despite the fact that 72 percent of respondents consider training and education to be important aspects for developing the human capital of board members. These conclusions are confirmed by the results of the study conducted by the McKinsey Company, demonstrating that the level of professional knowledge and the skills of board members (a part of human capital) often do not meet expectations. As a result, such directors take too long to discuss issues, are less efficient, and "do not perform as expected" (McKinsey and Company, 2006).

The results of a later study by the Association of Independent Directors (Issledovanie, 2014) draw similar conclusions regarding the human capital of the BDs. Since the economic and political crisis in 2014, the number of board members with financial expertise and experience in public capital markets has decreased. This may have a negative effect on the performance of Russian companies. Moreover, the study showed a decrease in the number of board members who have industry competencies, and suggested that experts are concerned by this as in the current financial situation companies badly need to increase their operational efficiency in order to survive and create opportunities for future growth (Association of Independent Directors (Issledovanie), 2014). The study also provided recommendations on improving the level of human capital of board members, suggesting developing systems that allow board members to exchange knowledge and experience on a global level, and developing and introducing programs for the professional development of directors.

Cognitive attributes, such as experience and educational qualifications, are important characteristics of directors' human capital (Erhardt *et al.*, 2003). According to Toumi *et al.* (2016), the educational background of directors is much less studied than board independence and the other characteristics of the board, although it is very important for company value creation. Generally, as a result of education and specific work experience, Board members possess more knowledge and are able to adopt more relevant decisions in difficult situations (Dalziel *et al.*, 2011). Earlier studies have shown that people with education, work experience, and other investments in knowledge and skills are more likely to offer creative solutions in the organizations they represent (Wincent *et al.*, 2010). Each member of the board possesses his or her own human capital, and is therefore able to perceive and analyze large volumes of necessary information, structure the information, and carry out their functions more efficiently (Carpenter and Westphal, 2001).

We can make the conclusion that authors of previous studies focussed on two groups of companies' performance indicators that are related to the human capital of the BDs – "internal" (Carpenter *et al.*, 2003; Dalziel *et al.*, 2011; Kroll *et al.*, 2008; McDonald *et al.*, 2008) and "external" (Hillman, 2005). The following coefficients can be considered as "internal" indicators: ROA, return on equity (ROE), amount of international sales, innovative efficiency that is characterized by R&D, and amount of attracted financial resources. The following indicators are considered as "external": market capitalization and Tobin's *Q*. The main outcome gleaned from the papers that study the question of the relationship between the IC of board members and financial performance is that social capital of board members is more a signal to the market (to "external" indicators) than a real effective source that helps to increase profitability indicators, such as ROA and ROE. Summarizing the discussion regarding this element of the IC of board members, let us offer a definition, taking a dynamic approach:

> The human capital of Board members is the ability of the Board of Directors to extract future economic gain from the knowledge, experience, and skills of the members of the Board of Directors, whose knowledge, experience, and skills inherently belong to the Board.

Now, let us turn to the analysis of the second element of the IC of board members, social capital.

4.2 Social capital of the BDs

According to various researchers (Devos *et al.*, 2009; Hillman *et al.*, 2011; Ruigrok *et al.*, 2006; Stuart and Yim, 2010), the general definition of the social capital of the BDs is as follows. Social capital of BDs refers to the relationships established between the members of the board and external stakeholders. Wincent *et al.* (2010) consider the networking opportunities of directors, as well as the assets that the members can acquire from these networks, as part of the social capital of the board. Perez-Calero *et al.* (2016) also divide social capital into two separate elements: external and internal. External capital includes the ties of board members with the external environment "through which they gain information, influence, legitimacy and other critical resources" (p. 8). Internal social capital includes the ties among board members, which could also be of benefit to board effectiveness and firm performance. Most researchers agree on the elements of social capital; however, determining which indicators can be used to measure these factors is more difficult and ambiguous.

Devos *et al.* (2009) analyze the relationship between the BD's social capital and financial performance indicators from the perspective of multiple directorships. The research was conducted using a sample of US companies in 2001-2003. The theoretical framework of the study is based on the "busyness hypothesis," stating that the more positions board members occupy in other companies, the busier they are and, therefore, the less effective in terms of their monitoring functions. In turn, this negatively affects company performance. The authors confirm this hypothesis, finding an inverse relationship between directors' busyness and company market value that perhaps reflects the negative attitude of potential investors (including institutional investors) toward appointed board members with multiple positions. The busyness hypothesis was supported also in other studies (e.g. Fich and Shivdasani, 2006; Lipton and Lorsch, 1992).

In contrast, the reputation hypothesis assigns busy directors an important position in terms of their ability to create value by utilizing the resources they bring to the company (Ferris *et al.*, 2003; Fich and Shivdasani, 2007). The authors believe that in the context of discussing the elements of IC – human and social capital alike – the reputation hypothesis supports the position that busy directors who serve on the boards of other companies obtain new knowledge, experience, competencies, and networks that are necessary to adopt effective solutions. Therefore, directors who fill many positions are in possession of human and social capital that makes it possible for them to bring additional value to the company. Field *et al.* (2013) and Sarkar and Sarkar (2009) emphasize the important role of busy directors in creating company value due to their ties and contacts that these directors bring to the company. Such directors provide access to information and networks that could help a company achieve its strategic goals.

Interlocking directorates are an important element of social capital, in terms of the networking potential of board members. This is a special case of multiple directorships, wherein the CEO of one company serves as a board member of another company, while the CEO of the latter company serves as a board member of the former. This situation has its advantages and disadvantages. In the context of the social capital of the BDs, it should be noted that networking ties acquired through interlocking directorates might be valuable for both companies. A number of studies have discovered a positive relationship between interlocking directorates and company performance indicators, which supports this thesis. According to Fich and White (2005), the mechanism of interlocking directorates allows companies to bring in valuable resources – the competencies of senior executive managers and directors – thus establishing "directors' networks." These networks are the subject of a new area of focus for research, which has appeared over the past decade (Renneboog and Zhao, 2011, 2014). A number of studies demonstrate a positive relationship between networking connections and company performance (Geletkanycz and Boyd, 2011; Larcker *et al.*, 2013). This is because these networks give access to information that allows directors to adopt effective managerial decisions. Through these networks, directors develop their personal and social contacts, which make these board members more influential in the boardroom. Moreover, the networks allow directors to acquire information regarding not only corporate strategies and trends in the development of the economy and specific sectors, they also bring about changes to remuneration policies for senior managers and open up positions for senior managers in other companies (Renneboog and Zhao, 2014). According to our point of view, directors' network connections can be viewed as important components of human and social capital. On the one hand, they allow directors to expand their knowledge and acquire new experience and competencies; on the other hand, they provide access to resources, the most significant of which – information – has become the most important resource in today's knowledge economy.

Hillman (2005) analyzed the relationship between social capital, specifically contacts that board members have with the government, and the company's financial performance, concluding that contacts with government bodies facilitate better financial performance, mainly due to easier access to the necessary resources. The study showed that these relationships were especially important for companies in heavily regulated industries, such as telecommunications, pharmaceuticals, and a number of other sectors with high excise taxes and stringent state supervision, where board members with political ties enable the company to obtain additional competitive advantages.

The results of the 2015 study conducted by PricewaterhouseCoopers confirm the importance of this aspect of the social capital of the BDs for Russian companies. PricewaterhouseCoopers found that in that year, during the economic downturn, 68 percent of directors surveyed confirmed that they were expecting changes in the composition of the board in their companies, particularly in companies with state participation. The expectations were toward greater presence of high-ranking government officials on the BDs, because such directors would allow these companies to gain additional competitive advantages, allowing them to use the crisis situation in their favor to improve their performance (PricewaterhouseCoopers, 2015).

Kor and Sundaramurthy (2009) studied the relationship between the social capital of independent members of the BDs and the pace of the company's revenue growth. As a proxy for social capital, the authors used information regarding the positions of independent directors in several companies, their networking contacts in other companies in which they held executive positions, and the contacts they established during their service on the boards as outsiders. The study confirmed the hypothesis that the social capital of the BDs is positively correlated with the rate of revenue growth. This is because the connections and experience of independent directors allow them to make more grounded decisions, which in turn lead to better company performance.

Certo (2003) analyzes the relationship between the social capital of board members and the results of the initial public offering (IPO), assuming that during the IPO potential shareholders pay considerable attention to the quality of the company's board. According to signaling theory, these factors may have higher influence on investors' perception than does the company's financial performance. Based on the study's review for the period 1995-2005, the author concludes that the social capital of the BDs, assessed on the basis of the social status of board members (external relationships with other companies, the state, etc.), is positively correlated with investors' expectations and is reflected in the higher stock prices during the company's IPO.

The relationship between the social capital of the company's board and private equity deals is analyzed in a paper by Stuart and Yim (2010). To assess the social capital of the

BDs, the authors use information regarding relationships between board members, assessed through their multiple director positions, and the networking opportunities provided due to serving as CEOs (or other senior managers) in other companies. The relationships between Board members in the sphere of attracting finance should be considered an important competitive advantage for a company. The hypotheses were tested using data on private equity deals that took place in the USA in 2000-2007. The analysis showed that board members with ties in business ventures and experience in raising capital are more likely to have positive outcomes in such transactions.

The importance of the social capital of BDs is emphasized by Cashman *et al.* (2013) who found that directors who are highly professionally connected are likely to get additional board seats, even those having general skills. At the same time, board members who are highly skilled but have fewer connections are less likely to receive additional board nominations.

Reviewing the literature shows that there is a relationship between the different elements of the social capital of the BDs and company performance indicators; moreover, these elements are often interrelated (for instance, work experience, and contacts). The same conclusion can be drawn from studying family businesses in developed and developing countries. One such study was completed by McKinsey & Company (2006). According to the results, the BDs of companies headed by the fourth and subsequent generations of owners achieve a more effective level of corporate governance. These companies employ professional board members, and a sufficient number of independent members allow the board to effectively separate business from the interests of the family, and guarantee smooth transitions in management from one generation to the next while maintaining all available experience, knowledge, skills, and contacts necessary for running the business efficiently. In their survey of Russian boards, PricewaterhouseCoopers (2014, 2015) confirmed the significance of gradually transferring management from generation to generation. Board members recognized that planned transition of authority from one generation to another is a high priority for directors, as this maintains established contacts and relationships within the company.

To summarize the results of studies on the relationship between the social capital of the board and corporate performance, it should be emphasized that researchers use both accounting-based and market performance indicators. Many studies find a negative relationship between social capital, proxied through multiple directorships, and profitability measures (Devos *et al.*, 2009; Fich and Shivdasani, 2006; Lipton and Lorsch, 1992). At the same time Kor and Sundaramurthy (2009), maintain a direct relationship between social capital and revenue growth. Perez-Calero *et al.* (2016) conclude that directors with experience based on their tenure as board members, external contacts with other boards, as well as internal social capital improve company performance, measured with ROA. The authors contend that board members connections with one another intensify the positive effects of their human capital on corporate performance results. The majority of papers testing hypotheses between the social capital of the BDs and market performance indicators (such as share prices, market capitalization, Tobin's *Q*) confirm the positive relationship (Certo, 2003; Hillman *et al.*, 2011; Stuart and Yim, 2010).

The results obtained on the Russian market are consistent with the results presented in the literature review. We defined a difference in the market capitalization of those Russian companies that had government representatives on their board and those that did not. At the same time, we could not find any differences in the results of the performance indicator ROA within the same sample of Russian companies.

Based on previous studies, and in accordance with the definition of IC as given above, let us define the notion of the social capital of the BDs as follows:

> The social capital of the Board of Directors is the ability of the Board to extract future economic benefit from the resources that arise from the Board members' external relationships.

Let us summarize the structure of the IC of the BDs and the main proxies that are used for evaluating the elements in Figure 3.

5. Conclusions and further research

5.1 Brief summary of the paper's findings

The authors of this paper considered the sources of generating IC in a company. They confirm the view that IC can be generated by internal and external resources that even do not directly belong to the company.

It is highlighted in the paper that as one of the main bodies and a key mechanism of corporate governance, the BDs serves as a source of IC of a company. At the same time, the BDs is the key driver that makes other elements of IC work. Therefore, such elements as the human and social capital of the BDs are able to significantly influence the creation, and growth of, value for stakeholders. In this study, the authors have identified approaches to analyzing the elements of the IC of the BDs, and have overviewed the proxies of analyzing IC of BDs that are pertinent to the modern knowledge-based economy.

While a large number of studies analyze the relationship between the various characteristics of the BDs and company performance indicators, significantly fewer studies address these characteristics precisely as elements of IC, namely, the knowledge, skills, competencies, experience, and connections board members might possess, allowing

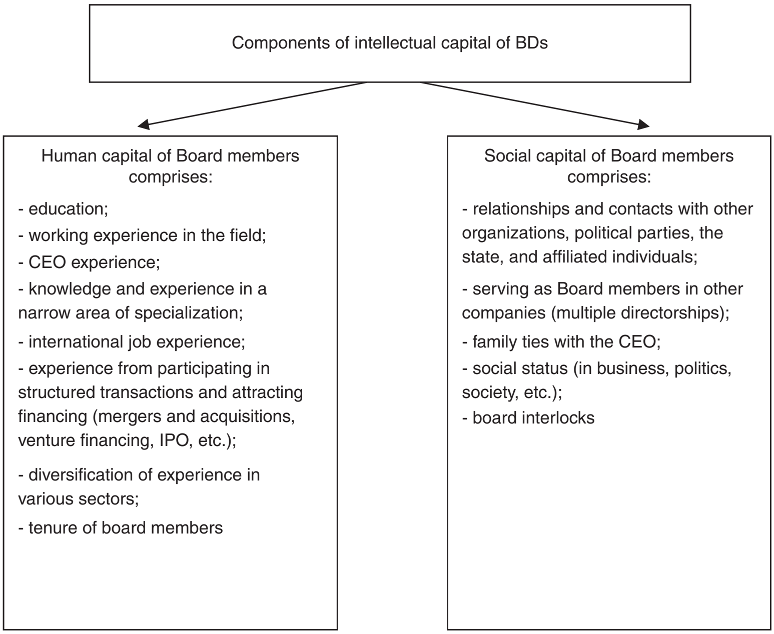

Figure 3.
Structure of BDs' intellectual capital

them to contribute value. It is far more difficult to study these issues than it is to study the structure and composition of the board, because they are intangible and at the same time represent sources of IC. Nevertheless, they require closer attention. As the McKinsey study shows, institutional investors are ready to pay up to a 40 percent premium for shares in companies from emerging markets with good corporate governance practices, conforming to best international governance standards (McKinsey & Company, 2006). This implies strong and professional BDs, which testifies to the importance of the knowledge, competencies, skills, and the ties of board members. In this case, the main practical implication is that the characteristics of the members of the BDs may influence the performance of a company and value creation. That means that the process of selection and nomination of potential board members should be carefully regulated.

5.2 Implications for researchers and practitioners

In this paper, we argue that IC is generated not only by employees who are officially employed in the company, but also by other affiliated parties. One of the examples is the BDs, whose members are not always officially employed in a company. This approach is quite new within IC theory. In this paper, we provide definitions of the IC of the BDs and its two elements – human and social capital – from the point of view of the theory of dynamic capabilities, which gives a new insight into the existing definitions.

From the practical point of view, the authors emphasize the strategic role of the BDs as the corporate governance mechanism with their main function of development and implementation of strategies that help to achieve long-term competitive advantage, while taking into consideration the interests of other stakeholders. The literature review defined the direction of the relationship between the elements of the BDs (human and social capital of BDs) and the accounting and market performance indicators of a company. Shareholders may use the obtained results while forming the BDs in a company, keeping in mind that different knowledge, skills, and networks of board members have a different relationship with company's performance indicators.

5.3 Limitations of the research and possible areas for future research

This paper has focussed on the IC of the BDs as a source of IC of a company. The research summarizes and gives a structured analysis of the papers in the field and presents the results of existing empirical research. We did not set a goal to define the differences and specifics of BDs in developed and emerging markets, but due to the topicality of the issue, we think that this direction can be interesting for further research.

Based on the literature analysis, we have defined the main proxies that are used for evaluation of the human and social capital of the BDs (Figure 3). The list of the proxies can be continued by other examples, not widely used in the research.

Of course, the authors of the paper admit that IC of a company can be generated by other stakeholders (advisory councils, suppliers, volunteers, strategic allies, partners, etc.). Nevertheless, in this paper we have chosen the BDs as the object of analysis. The authors think that out of the following functions of BDs – monitoring, control, advising, and strategic management of a company – the last one is the key one that brings about long-term competitive advantage to a company and leads to a company's value creation. As has been already mentioned in this paper, the IC of directors can lead to effective strategic planning and strategy implementation, and it is very important to find the relationship between IC elements and company performance and identify the IC elements that are the main determinants of corporate value creation.

Therefore, future research might focus on the concrete components of the human and social capital of the BDs, and their relation with company performance indicators and value. In this case, deeper conclusions can be made concerning their relationship with performance results. As was mentioned in this paper, inclusion of a member of the BDs with specific knowledge, skills, and education (that characterize the human capital of BDs) is positively related with ROA, while the existing relations, networks and experience of working in governmental bodies (that characterize the social capital of BDs), are considered more as a signal to the market and lead to an increase, mostly, in market performance measures. That means that by giving serious and precise consideration when forming the BDs, managers can influence financial performance indicators and value creation.

In the recent paper by Nkundabanyanga (2016), the author investigated the combined effect of board governance and the firm's IC on company performance. The author asserts that the study considered both agency theory and the resource-dependence perspective to explain firm financial performance. According to the author, board governance and IC should interlock in order to improve financial performance. These findings support the view that there needs to be more thorough investigation, not only of the elements of the IC of the board itself, but of its interrelationship with the IC of the company in general.

Regarding Russia, it is worth noting, that this is a country with variable governance practices, high concentration of ownership, and a low level of shareholder rights protection (Goetzmann *et al.*, 2003; Muravyev *et al.*, 2014; Peng *et al.*, 2003). In such conditions, the risk of expropriation of minority shareholders and the costs of monitoring are high. Therefore, we may assume that board members with special characteristics are in demand. In order to increase the quality of corporate governance and attractiveness of companies for outside investors, directors should be able to operate efficiently in frequently extreme conditions. Thus, an important direction for further research is the identification of the elements of the human and social IC of directors that are especially needed in the emerging market economies with acute principal – principal agency problems.

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