

# Instrumental Approach in Human Capital Management: A Conceptual Framework

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Human Capital Management (HCM) is a management concept that demands theoretical foundations for implementation. It must not be easily equated with human resource management activities. HCM must include initiatives directly focused on the knowledge resources that are at the organization's disposal. However, using only internal knowledge resources is not enough to raise the level of competitiveness. Organizations must reach outside their environment. It has been adopted that, in instrumental terms, HCM is based on intentionally selected and applied organizational, technical, social, formal, and legal, as well as economic and financial instruments in a manner that enables the organization's goals to be achieved. At the inter-organizational level, HCM was included in the organization's business ecosystem as the organization gains new opportunities to use the knowledge and human capital of its stakeholders thanks to its network connections. It is from this perspective that the article proposes the main concepts, goals and practices, methods that HCM can serve.

*Keywords:* human capital, human capital management, business ecosystem, methods of human capital management

## Introduction

Human capital (HC) is a resource that has recently attracted increasing interest at both the macro and micro levels. HC is the basic component of the intellectual capital of the organization; being owned by its people, it provides them with the opportunity to use the remaining available material and intangible resources to create value, in accordance with the set objectives. HC directly affects people's ability to work, and especially determines their level of creativity and innovation. The basic component of this type of the organization's capital is the knowledge of its employees.

Recognition of knowledge as a basic strategic business resource has enforced the implementation of the concept of knowledge management in enterprises. Since the 1990s, organizations focusing on the development and increase of their competitiveness began to implement knowledge management systems based on information technologies (IT). Currently, "in an economy based on knowledge, skills, and innovations, there has been an evolution of knowledge management, which brings this concept closer to that of managing human resources in an organization" (Morawski, 2017, p. 14). On the other hand, the growing role of HC in gaining a

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business advantage necessitates changes in the processes that increase competitiveness of the organization (Batorski & Wszendybył-Skulska, 2016) and its management methods. The views presented in the literature demonstrate that the personnel aspect is leaning towards human capital management (HCM) (Huk, 2013), i.e. that HCM is gradually replacing human resource management, but often these terms are used interchangeably (Afiouni, 2013). Therefore, it is important to distinguish the essence of human resource management from HCM, at the same time indicating mutual dependencies.

The aim of the article is to present the existing HCM capabilities, based on elements of other management concepts and diversified methods. The starting point was a review of the literature on HC, HCM and the essence of the business ecosystem. Proposals for understanding HC, levels of its consideration and the essence of HCM in instrumental terms were presented. Next, the main concepts, goals, practices, and methods that may become useful in HCM were given. The characterized methods can prove useful for the organization to acquire practical external knowledge and foreign HC to co-create and create innovative solutions. The article concludes with managerial implications as well as research restrictions and proposals for further research directions.

### **Literature Overview**

Although the term “HC” is used in a number of studies, the definitions are not consistent. HC is sometimes equated with formal education, determining a person’s ability to perform a given job (Giménez, 2005). In this sense, human capital is “the aggregation of the innate abilities and the knowledge and skills that individuals acquire and develop throughout their lifetime”, with innate abilities being described here as “all physical, intellectual, and psychological capacities that individuals possess at their time of birth” (Laroche, Mérette, & Ruggeri, 1999, p. 89). In management science, HC is generally defined as “competence and capabilities of the employees” (Wiig, 1997, p. 401), in other words, it is the features and properties embodied in competent employees in their entirety (Morawski, 2017). To put it in more detail, HC is the combined knowledge, skills, innovation, and abilities of individual employees to efficiently perform tasks, as well as company values, organizational culture and philosophy (Edvinsson & Malone, 2001).

HC may be considered in relation to a single person. Hudson (1993) defined it as a combination of genetic inheritance, education, experience, and attitudes about life and business. Under HC, Skyrme (1999) distinguished: competence (experience, knowledge, and skills), structural factors (processes and networks, e.g. contacts and sources of information), customer factors (relationships and reputation) and other elements (e.g. copyright, projects). HC also refers to a collective (groups, organizations) and then it is defined as, e.g. the totality of characteristics and properties inherent in people, which are the source of value creation and which include employee abilities, skills and motivation (Pocztowski, 2003). Therefore, the team’s HC is created by the intellectual capital of team members. The team’s HC may be lesser, greater, or equal to the sum of the individual capitals of its members (Parzonko, 2015). HC of the organizational level is created by the configuration of human capitals of teams and intellectual capitals of the people working on independent positions operating within it (Mikuła, 2015).

HCM “denotes the process or procedure of obtaining, training, rewarding, managing, and retaining personnel in order to meaningfully contribute to the continual existence of organizations” (Salau, Falola, Ibidunni, & Igbino, 2016, p. 494). “The human capital management process enables decisionmaking concerning the necessity and amount of expenses needed for human capital formation, employment and reproduction on the basis of their economic practicality” (Petrenko, Davydiuk, Malakhov, & Ostapiuk, 2015, p.

105). From the point of view of functional management, HCM consists in implementing management functions (e.g. according to the scheme: planning, decision making, organizing, motivating, controlling) that are focused on comprehensive HC: i.e. individual, team, organization, and inter-organizational level (Mikuła, 2015). HCM aims at the increase of innovation, development of new products and services, as well as of new technologies and organizational and management methods. This approach is contrary to efficiency growth, which was preferred previously, in the industrial economy (Morawski, 2014). Therefore, HCM requires a selection of tools and practices that should be applied, taking into account factors such as: business area, the scope of use of the human potential, sources of building competitive advantage, the adopted strategic goals, stage of organizational development and market position (Toszevska-Czerniej, 2018).

HCM is to lead to synergies in the system of organizational learning and to intensify the effects of work of associated groups (e.g. company departments) (Wyrwicka, 2010). It is assumed that the success of an organization in HC management depends on leadership practices, knowledge accessibility, learning capacity, workforce optimization, employee engagement, mentorship programs and workplace culture (Salau et al., 2016).

What characterizes modern organizations is the operation within the system of economic, digital, and social connections with other organizations. Network connections can be divided into soft and hard. In the first case, it can be a social medium connection, e.g. Facebook, hobbyist or religious groups, etc. The latter is characteristic of business relations that contribute to running a modern business (Trippner-Hrabi & Hrabi, 2014).

To get the clearest perspective of the organization's operations within a system of connections (a network) with its business environment, using the concept of business ecosystem is recommended. This concept allows analyzing the operating conditions of an enterprise in a context more similar to its actual situation than the traditionally understood environment, or as part of a sector, with a focus on the value chain.

#### Business ecosystem,

Also termed 'biocorporate system', refers to an organization as a living organism within a larger system business ecology, i.e. crossing a variety of industries and diversity of stakeholders and co-shaping organization and their environments. A key characteristic of organizations in business ecosystems is their collaboration with competitors. (Leibold, Probst, & Gibbert, 2002, p. 349)

The business ecosystem refers to the intentional community of economic actors whose individual business activities largely affect the fate of the entire community (Moore, 2006). The business ecosystem is a type of network that goes beyond the traditional approach to business network connections. It provides a more holistic view of the various socioeconomic entities, directly or indirectly involved in open innovation in the sector. The business ecosystem can have a diverse range: local, national, or international (Ben, Letaifa, & Rabeau, 2012). The concept of ecosystem-as-affiliation "sees ecosystems as communities of associated actors defined by their networks and platform affiliations". Another view is ecosystem-as-structure, which "views ecosystems as configurations of activity defined by a value proposition" (Adner, 2017, p. 40). The basic division of business ecosystems comprises: business, innovation, and entrepreneurial ecosystems (Hakala, O'Shea, Farny, & Luoto, 2020). Additional types mentioned are: innovation ecosystem, differentiating ecosystem, commoditizing ecosystem (Bosch & Olsson, 2018).

Research related to business ecosystems is allowed to broaden the knowledge on the complex interaction

between: pioneer entrepreneurs, formal and informal networks, infrastructure, culture, risk capital, research universities and governmental support for business by providing incentives and simplifying regulations (Abbate, Accordino, La Rocca, & Rupo, 2017). It is recommended to extend the list with the issue of optimizing the use of human capital, as attempted in this article.

### **Methodology**

The research methodology, the results of which will be presented later in the article, included systematic analysis and critical evaluation of the literature on HC, HCM, business ecosystems, as well as methods that can be used in HCM and HC development. The essence of HCM and its levels were determined using deduction. Then, basic concepts that should be used at individual levels of HCM were indicated. As a result of the literature research focused on the instrumental approach to HCM, examples of methods were identified that could be used to optimize the process of HC development and its application in the business ecosystem. These methods have been characterized in general based on the subject literature. The purpose of this article is, e.g. to create the theoretical foundations of HCM, with particular emphasis on its inter-organizational level in relation to the business ecosystem.

### **Results**

#### **Human Capital Management and Its Components**

HCM is a concept aimed at breaking the existing patterns in the approach to people working for organizations, which were established as a result of the practical application of standard human resource management procedures. These procedures are often in opposition to the desired flexibility of the organization due to standardization of processes such as recruitment and selection of personnel, onboarding, motivating, organization of work, remuneration, assessment and promotion of employees, development of professional qualifications and finally, offboarding. The procedures often lead to the shaping of human resources who adapt to implementing standard tasks in the organization, within the existing organizational structure, who have low levels of motivation, poorly adapt to dynamic changes and emerging challenges, opportunities and threats, and who are non-creative and conservative. Therefore, HCM should not be identified with a set of procedures for the implementation of classical human resource management. The mere recognition of HC as a configuration of intangible resources associated with people (Figure 1) causes the object of management to become the configuration of knowledge, abilities, attitudes, structural and customer factors, as well as intellectual property contributed by the people working for the organization. Therefore, it is necessary to integrate many activities that will be implemented at the level of individual human intellectual capital, HC of the employee team, HC of the organization, and at the inter-organizational level (a business ecosystem) (Figure 2). All these levels are very important and none of them can be ignored.

Instrumental HCM consists in the appropriate selection and use of organizational, technical, social, formal and legal, economic and financial instruments on which the HCM system is based, and which it uses (Mikuła, 2019). The instruments used in HCM can be considered: 1) broadly, as a comprehensive set of assumptions, principles, methods, and practices in the form of management concepts; 2) narrowly, as specific management methods, focused on specific goals, supporting the implementation of individual concepts; 3) as tools that are used as part of methods, e.g. contributing to the implementation of knowledge-based processes, or used to analyze knowledge resources, maintain interpersonal relationships, and perform personal functions. The latter

are mainly IT technologies and tools.

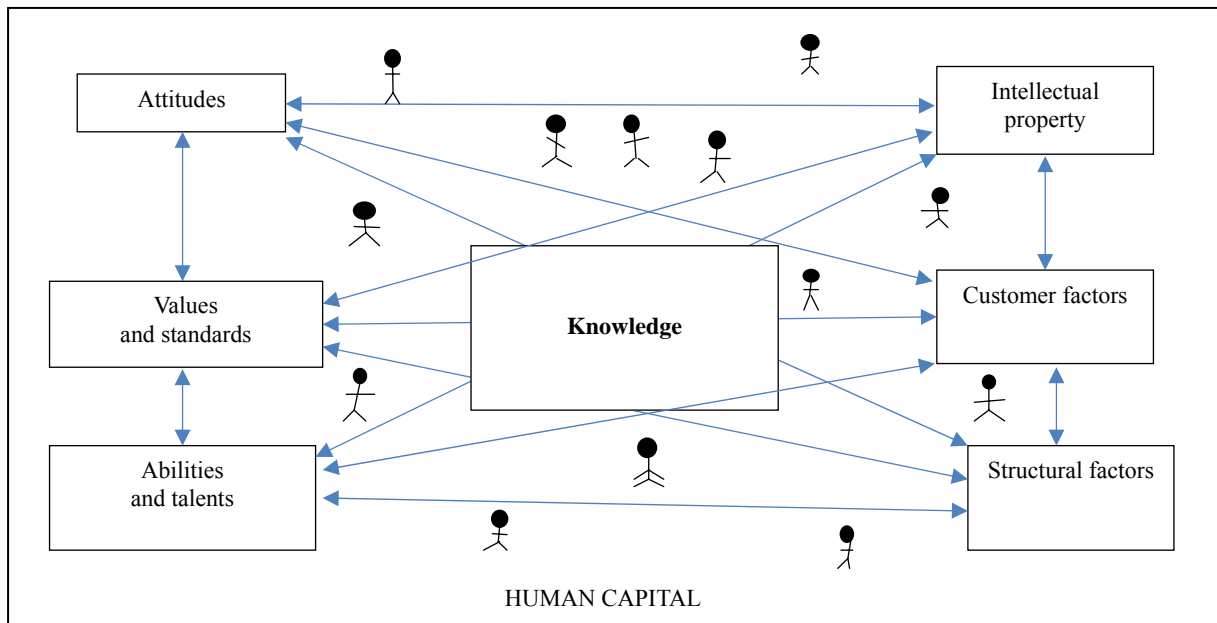


Figure 1. HC as a configuration of intangible resources contributed by people. Source: Own study based on Skyrme (1999).

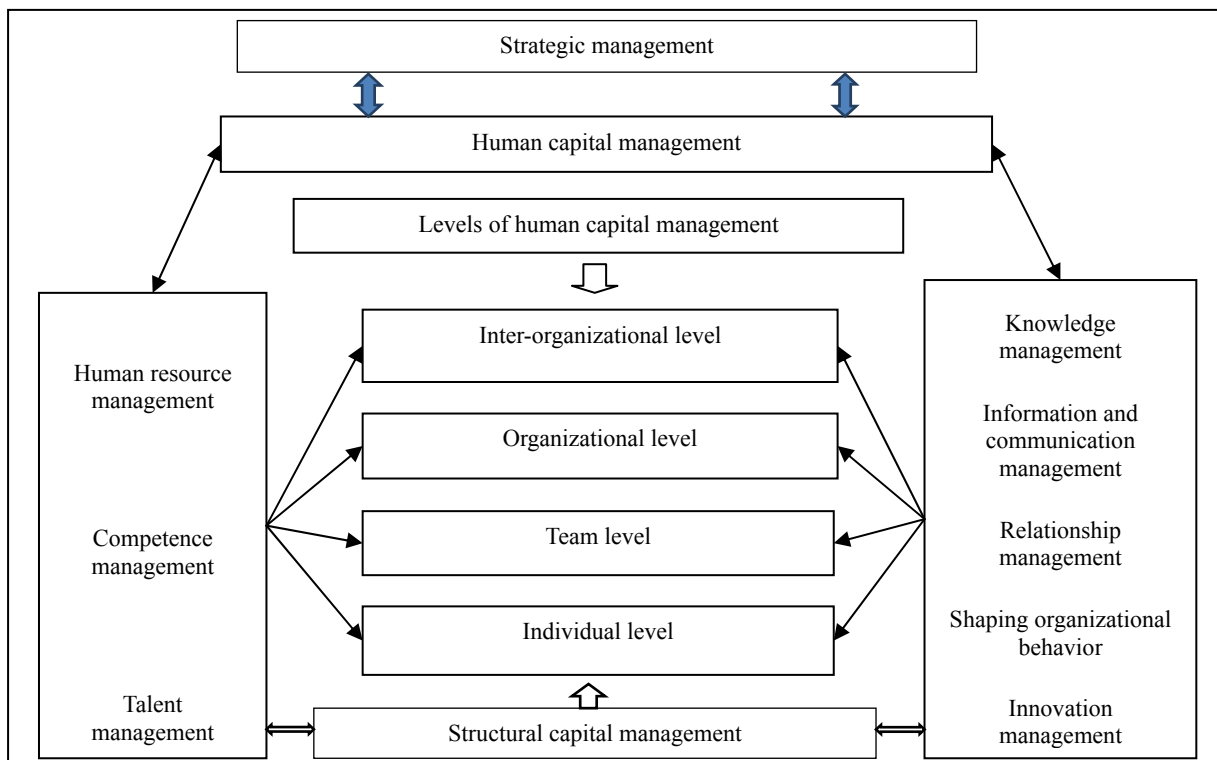


Figure 2. A theoretical view of HCM. Source: Own study.

The basic concepts used in HCM that are directly focused on employee skills are: human resource management, competence management, and talent management. Other concepts, which should jointly lead to a synergistic use of HC, relate to key knowledge resources and structural capital components (e.g. relationships,

information and communication processes, innovative processes) and the underlying behaviors of people's thinking, attitudes, values, and norms. These are mainly the following concepts: knowledge management, relationship management, information and communication management, innovation management and, in general terms, shaping organizational behavior (Figure 2). Each of the above comprehensive sets of assumptions, principles, methods, and practices can be used to a different extent in each of the HCM levels. Therefore:

- human resource management—a concept under which a number of practical approaches and methods have been developed in relation to the management of a collective, aimed at recruitment and selection of employees, onboarding, training, evaluation and remuneration of employees, and offboarding. It is emphasized (Delery & Roumpi, 2017) that practices applied in this area can contribute to winning a permanent business advantage, not only by increasing employee skills, motivation, and opportunities. It can also be done by restricting employee mobility, which can decrease the organization's capacity and performance, as well as a decrease in the value of HC (Campbell, Kryscynski, & Olson, 2017). Over time, the importance of strategic thinking within human resource management has increased. Tarišková (2017) indicates that strategic human resource management is a conceptual framework based on developing and implementing human resource management strategies. It focuses on methods of integrating human resources and business strategies, and on the benefits of a long-term perspective on the future direction of human resources, and methods of achieving the goals;

- competence management—the way organizations manage the competencies of organizations, groups, and individuals (Berio & Harzallah, 2005); is assumed that HCM focuses on employee competencies. Competences can be understood as “all that an employee can do, both in terms of know-how, as well as intellectual and physical performance capabilities and psychological attitude to the task” (Bombiak, 2014, p. 175). Competence management rationalizes human resource management by focusing specifically on the effectiveness, profitability, and economy of human action. The approaches used in competence management can vary. For example, Berio and Harzallah (2005) propose to organize competency management in accordance with four types of processes (with several possible subprocesses within each of them): 1) identification of competences, i.e. when and how to identify and define the required set of competences (in relation to the present and future) in order to implement the organization's mission, strategy, and tasks; 2) assessment of competences, i.e. (a) when and how to identify and define competences acquired by natural persons and/or (b) when and how the organization may decide that the employee (or natural person) has acquired specific competences; 3) acquiring competences, i.e. deciding how the organization can acquire some competences in an organized manner, and when; 4) leveraging competences, i.e. how to use information or knowledge about competences created and transformed as part of identification, assessment, and acquisition processes, e.g. how to identify gaps between the required and acquired competences, who should participate in training, how to find key employees (with key competences), etc. To sum up, competency management activities are to enable employee development, identifying candidates for specific jobs, analyzing the effectiveness of employee training, and to support the implementation of other human resource management functions (Jabłoński, 2019);

- talent management—HC is a particularly important business resource, which should be considered holistically. Nevertheless, organizations must focus particularly on HC, which has unique characteristics and greatest potential, and which is the foundation for maintaining the organization's competitive advantage. Despite the growing recognition of the importance of qualified employees, the main challenge for the organization is the shortage of managerial and professional talents. Talent shortage is a fundamental obstacle

for many companies to implement their global strategies (Dayel, Debrah, & Mulyata, 2020). Therefore, in HCM, talent management cannot be abandoned as it complements human resource and competence management functions. In talent management, activities related to attracting, developing, and retaining talented and creative people (Shaemi, Allameh, & Bajgerani, 2011), as well as actions to increase employee engagement (B. Davies & B. J. Davies, 2010), actions aimed at performance management, succession planning, remuneration management, and learning process management (Little, 2010) are considered to be particularly important. Talent management in an organization can be based on one of two approaches: holistic (inclusive) or narrow (exclusive). Therefore, either all employees are treated as talents, or only selected ones, and it is for them that talent management initiatives are undertaken (Dayel et al., 2020). However, talented people who are not employees of the organization can also be involved. Cooperation can be contract-based, not requiring on-site presence (flexible forms of work organization and employment), e.g. working in virtual teams. Therefore, talents from other institutions and enterprises can be engaged, as well as from customers who, e.g. create product concepts or advertising slogans voluntarily, with professional satisfaction in mind, or acknowledgment expressed in the form of a gift (Mikuła, 2012). The use of talent management provides the opportunity to improve the economic situation of an organization. More importantly, however, it also leads to a change in the ways of managerial thinking, replacing traditional human resource management categorization with strategic human resource management (Jyoti & Rani, 2014). What is also important is that the application of talent management procedures involving the identification and special treatment of the best employees mobilizes others to exercise greater effort to match the distinguished and gain their position (Morawski, 2014);

- knowledge management—one of the key subsystems of HCM, although the predominance of the two concepts in the organization could be discussed; ultimately, it depends on the approach taken in the organization management practice. In general, knowledge management includes the management of activities related to knowledge, e.g. creation, capturing, transformation, and use. Its aim is to plan, implement, operate, and monitor all activities and programs related to knowledge that are required for effective intellectual capital management (Wiig, 1997);

- relationship management—a concept focusing on managing relationships between organizations and people, aimed at creating and leveraging the capital brought in by relationships and cooperation conditions. Owing to relationships with entities of the environment, organizations have the opportunity to shape and use both the knowledge resources of the environment and its social potential, along with its infrastructure. Relations within the organization are the foundation for the implementation of knowledge-related processes. The number of permanent and spontaneous relations between businesses is currently so large that they form a kind of network (Krakowiak-Bal, Łukasik, Mikuła, Pietruszka-Ortyl, & Ziemiańczyk, 2017). Limiting this network to direct cooperation relations of a given enterprise creates a business ecosystem. The role of network relationships, recognized as a valuable resource that is a foundation for learning and sharing resources, is well documented in the literature (Soo, Devinney, & Midgley, 2004). It is emphasized, e.g. that creating relational capital is emerging as a process that contributes to reducing the uncertainty of business activities (Perechuda & Chomiak-Orsa, 2013). Therefore, an important HCM subsystem, and knowledge management as part of it, is the management of intra-organizational and public relations. Appropriate shaping of relationships between individual intellectual capital of employees is the foundation for a synergy effect at the team level of HCM. Proper configuration of relations between the teams provides similar possibilities in organizational level of HCM. Managing relations with the environment should enable co-learning and the use of resources owned by

third parties, as well as controlling the flow of the organization's intangible resources to the environment, and their free or restricted use by other entities;

- information and communication management—concepts foundational for knowledge management that can practically solve the many challenges of knowledge transfer (including knowledge sharing), as well as collecting, saving, storing, and applying knowledge. Information and communication technologies (ICT) can support human interaction and significantly improve collaboration, coordination, communication, and processes involving codified knowledge (Assegaft & Hussin, 2012). On the other hand, communication management supports the organization of the knowledge flow between people at one-on-one meetings and various types of group meetings;

- shaping organizational behavior—in this context, it is a set of projects aimed at creating the right conditions in organizations that point people towards creating knowledge (including innovation) and make full use of HC. The most important factors behind a climate conducive to innovation are trust and openness, challenge and commitment, support and allowing space for ideas, conflict, and debate, risk-taking and autonomy (Nybakk & Jenssen, 2012). Building a creativity-conducive climate requires systematic development of organizational structures, communication policies and procedures, remuneration and recognition systems, training policies, accounting and measurement systems, and calls for implementing a strategy (Tidd & Bessant, 2009). Studies show that the actual implementation of a learning-oriented approach helps to increase innovation and improve financial results (Nybakk, 2012). Priority can therefore be assigned to organizational learning processes (i.e. changes in organizational behavior) that allow generating information and knowledge, and enable introducing changes to improve the organization (including individual thinking patterns and organizational culture). It is experimenting and increasing experience that can lead to HC development;

- innovation management—a concept focused on creativity, the use of knowledge resources, the process of innovating, implementing changes, and generating innovative products, services, and processes. Baregheh, Rowley, and Sambrook (2009, p. 1334) define innovation as “the multi-stage process whereby organizations transform ideas into new/improved products, service or processes, in order to advance, compete and differentiate themselves successfully in their marketplace”. What is important in innovation is the fact that innovation: 1) can be developed entirely within the organization, or adapted from third-party solutions; 2) is a creative process that includes application; 3) creates added value; 4) can be an absolute or relative novelty (possibly a common practice in other organizations); 5) comprises the process and its result (Crossan & Apaydin, 2010). Nybakk (2012) emphasizes that the organization's innovation level consists mainly of the following variables: product innovation, process innovation, and business system innovation. Thus, it can be observed that HC is the foundation of effective innovation management, but the special role of innovation management in HCM comes down to the creation and application of unprecedented practices in the field of HCM. The novelty of the HCM concept demands creating innovative solutions to improve the management and use of HC. A high level of process innovation is also required in talent management, especially when it comes to recruitment and retention of talented employees.

The above set of HCM support concepts is obviously not a closed one. Strategic management activities play an important role and should govern the entire organization's activities, its structure, and initiatives towards the environment. Also, the structural capital management indicated in Figure 2 should contribute to creating desirable conditions and processes necessary for HCM in the organization (e.g. in terms of learning capacity, organizational structure, organization of work processes and employee tasks, as well as IT solutions used). The supporting concepts can be, e.g., diversity management, change management, positive psychological



capital management, or intellectual property management. The main concepts, goals and practices, methods and tools that are particularly applicable at subsequent levels of HCM were summarized in Table 1.

Table 1

*Main Concepts, Goals and Practices, Methods and Tools of HCM*

HCM level	Main concepts supporting HCM	Main goals and practices of HCM	Some methods and tools that can be used in HCM
The level of individual intellectual capital	Human resource management Competence management Talent management Knowledge management Information and communication management Relationship management Shaping employee behavior Employee intellectual property management	<ul style="list-style-type: none"> <li>-recruitment, selection, adaptation,</li> <li>-identification, development, and retention of talents,</li> <li>-introducing a high degree of employee autonomy and direct contact with others,</li> <li>-employee involvement in the process of organizational learning,</li> <li>-open access to knowledge resources,</li> <li>-information redundancy and elimination of communication barriers, relationship and knowledge gaps,</li> <li>-support for individual employee initiatives,</li> <li>-employee participation in creating the organization's vision and strategy and in planning future activities,</li> <li>-individual discovery of internal assumptions regarding the organization's operation, their analysis and assessment,</li> <li>-development of employees' own projects,</li> <li>-shaping formal relations with colleagues (including management and subordinates), customer representatives and business environment institutions,</li> <li>-supporting informal relations, partner contacts with the business environment and community memberships,</li> <li>-shaping attitudes and motivation,</li> <li>-development and use of employee intellectual property.</li> </ul>	<ul style="list-style-type: none"> <li>consultations,</li> <li>adaptation and information talks,</li> <li>self-education,</li> <li>teaching,</li> <li>coaching,</li> <li>mentoring,</li> <li>internal and external training,</li> <li>participation in meetings and conferences,</li> <li>membership in communities,</li> <li>reporting complaints,</li> <li>periodic assessment,</li> <li>shaping positive psychological capital,</li> <li>e-mail, intranet, internet and other IT tools.</li> </ul>
HCM at team level	Competence management Knowledge management Information and communication management Relationship management Innovation management Shaping group behaviors Diversity management	<ul style="list-style-type: none"> <li>-building teams in terms of complementary competences,</li> <li>-introducing team learning,</li> <li>-collective forming of the future vision, as well as organizational and knowledge strategy,</li> <li>-co-learning, questioning assumptions and norms regulating the organization's operation,</li> <li>-applying mechanisms and forms of teamwork,</li> <li>-shaping relationships and communication between teams and the environment,</li> <li>-support for creative and innovative processes,</li> <li>-shaping the organizational climate.</li> </ul>	<ul style="list-style-type: none"> <li>review of crisis and dangerous situations,</li> <li>risk assessment,</li> <li>dialogue training,</li> <li>learning sets,</li> <li>teamwork training,</li> <li>co-learning, also through exchanging knowledge and teamwork experience,</li> <li>lessons learned,</li> <li>benchmarking,</li> <li>informal meetings,</li> <li>briefings and team meetings,</li> <li>teamwork,</li> <li>autonomous groups</li> <li>quality circles,</li> <li>virtual teams,</li> <li>project teams,</li> <li>heuristic methods,</li> <li>e-mail, intranet, internet, social business applications, Wiki tools,</li> <li>semantic and attribute-based search tools and other IT solutions.</li> </ul>

(Table 1 to be continued)

HCM at organizational level	<p>Strategic management Strategic human resource management Talent management Competence management Knowledge management Information and communication management Relationship management Shaping organizational behavior Innovation management Organizational intellectual property management</p>	<p>-strategic management of the organization, its knowledge and structural capital, -continuous collection of information incoming from the environment in a single database, followed by selection and distribution within the organization, -shaping personnel policy, talent and knowledge employee management system, as well as motivation system, -appreciating and supporting professionalism, -introducing and supporting the organizational learning process, -shaping the organizational structure, -the required internal diversity and adequacy to structures in the business environment, -minimal formalization, -decentralization of the information and control system, -shaping the information and knowledge management system, -creating creative chaos, -supporting informal and knowledge-oriented leadership, -creating space for sharing knowledge, -development and protection of intellectual property, -participatory management, -shaping human resource mobility, -shaping organizational culture.</p>	<p>consultation teams and committees, teams creating the vision of the future of the organization, the ringi system, IT tools supporting information, communication and knowledge processes, knowledge broker, chat rooms, methods of measuring human capital, executing legal protection of employee, team and organizational intellectual property, benchmarking, CRM, CKM, e-mail, intranet, internet, social media applications, corporate portals and other IT solutions.</p>	
	HCM at inter-organizational level	<p>Human resource management Competence management Knowledge management Information and communication management Relationship management Shaping inter-organizational behavior Innovation management</p>	<p>-creating, developing, and maintaining positive relationships and conditions for cooperation with external business partners (cooperation, cooptation, strategic alliances) and institutions; -creating, developing, and maintaining positive relationships and conditions for cooperation with individual partners involved permanently, short-term or spontaneously in the process of creating value, -shaping the cooperation with business ecosystem actors, -joint use of knowledge and human capital of business ecosystem actors, -increasing resource mobility, -development of the organizational network/business ecosystem, -strengthening relationships with business ecosystem actors, -sharing intellectual property, -an open innovation approach, -boosting the innovation process, -accelerating the process of implementing changes and leveraging innovation, -joint commercialization of created knowledge, -implementation of organizational learning in the business ecosystem,</p>	<p>negotiations, video conferences, staff turnover, exchanging visits and meetings between employees of the business ecosystem actors, joint training for employees of various business ecosystem actors, CRM, CKM, virtual teams, community of professionals, communities of creation customer communities, prosumerism, inter-organizational coaching, mentoring and learning sets, meetings with individual customers, joint problem solving teams, inter-organizational project teams, benchmarking, open innovation, knowledge agents, joint use of intellectual property, extranet, internet, email, social media applications and other IT solutions.</p>

Source: Own study.

### **The Use of Human Capital in the Business Ecosystem**

Relying only on own HC in the functioning of the organization and implementing innovative processes can lead to loss of development opportunities and even deterioration of competitive position. It slows down the development of organizations compared to those that aim for cooperation and cooptition. Mroczko (2006) emphasizes that effective management of innovation in an enterprise requires building a network model based on information and knowledge. According to Saunila, Pekkola, and Ukko (2014), organizations involved in the use of external knowledge reach a higher level of innovation capacity which positively affects their operational results. On the other hand, Y. Z. Chen and W. Chen (2020) point that the level of investment in business partner knowledge is the key to the success of collaborative innovation. The organization must therefore demonstrate openness to cooperation and involvement in the development of not only its own HC, but also third parties cooperating with it.

HC is the only form of intellectual capital able to generate innovation and business strategies (Bejinaru, 2016). Organizations that are aware of the importance of HC and their business ecosystems can make the most of their intellectual potential by using methods that are well-suited to the situation and their needs. Described below is a dozen or so methods that can support innovative processes through the joint leveraging of HC included in the business ecosystem. They allow answering the challenge of managing a resource that the organization doesn't have and that it cannot control. The following methods can be particularly effective:

- visits and meetings between employees of the business ecosystem actors. These occasions can help build mutual trust, develop networks of interpersonal relationships, create communities of practitioners (CoPs), sharing explicit and hidden knowledge, and the intertwining of organizational cultures;
- joint training for employees of various business ecosystem actors. In addition to the formal learning process, informal exchange of knowledge can take place, as well as other effects, such as visits and meetings;
- coaching, mentoring, learning sets; these are methods with potentially limited beneficial use in organizations (especially in SMEs). However, applying them in inter-organizational systems can bring multiple benefits to both trainees and trainers coming from various business ecosystem organizations. The coach, the mentor, and the mentee, as well as the participant of learning sets have the opportunity to learn how other organizations (similar departments) work, what challenges they face, and how they solve them. Meetings that use these methods facilitate intertwining of organizational cultures;
- industry conferences and meetings organized by scientific institutions and business ecosystem actors. They allow obtaining and sharing knowledge. An additional effect may also be closer cooperation between R&D institutions and business;
- virtual teams—this method allows involving people located in different places of the world in the implementation of tasks, thus engaging HC, which would never work for the organization using traditional solutions in terms of employment. In addition, talented employees can be sourced from areas where the supply is high and wage expectations are significantly lower than in the country where the company is located (Stefaniuk, 2014). Teams can also be established from employees of business ecosystem actors, as well as individuals, e.g. members of online CoPs and customers. The method can achieve particularly good results when the codified organizational or business ecosystem knowledge management systems are applied, and in the course of collecting information and creating the concept of products, processes or changes. Operating in a virtual environment can eliminate problems arising from cultural differences that occur in face-to-face collaboration;

- meetings with individual customers, who can be a valuable source of knowledge about the company's products and competitors. For example, they can be members of teams that create or rationalize operating instructions or improve product functionality. Their support tools can be customer relationship management system (CRM) and customer knowledge management system (CKM);

- CoPs—"groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis" (Wenger, McDermott, & Snyder, 2002, p. 4). CoPs can take the form of self-organizing or company-sponsored communities (Potocki, 2012). As indicated by Wenger et al. (2002), CoPs occur everywhere, so it can be concluded that they also form within a business ecosystem, based on formal and informal relationships between employees of the actors of the ecosystem. Their form can be varied, based on either direct contacts or virtual relationships;

- network of vibrant virtual communities of knowledge sharing—a form of CoPs, aimed at knowledge sharing, which operate using IT networks, relying on knowledge-based trust. The communities can be formed from face-to-face communities of practitioners (analytical and discussion groups, informal task groups). In order for such communities to form, the participants must be informed that sharing knowledge is the norm in an organization, that the organization trusts its employees, and sharing knowledge is the moral obligation of all employees. Of course, not all communities based on personal contact can transform into virtual communities, but they may use some virtual community tools to improve interaction and face-to-face learning when needed (Ardichvili, Page, & Wentling, 2003). Their virtual nature provides the basis for operating within the business ecosystem;

- creative communities—a type of CoP, organized and sponsored by an enterprise, which also defines its functioning principles (Gach, 2008). Therefore, this is why they may include customers, as well as representatives of the actors of the business ecosystem. The organization's integration ability in terms of customer knowledge is a reliable reflection of its absorption capacity, defined as the ability to engage customers of the organization in the innovation process to jointly create value. Customer integration can be passive or active. Passive integration means that customers are accustomed to simple information providers and only indirectly participate in the innovation process. In active integration, customers are considered co-producers and co-creators of value. During active integration, customers participate directly in the innovation process through the use of properly selected methods, such as customer focus groups, market research, online discussion forums, social networks, etc. (Belkahla & Triki, 2011). Similarly, different approaches apply to actors of the business ecosystem;

- customer communities—communities of people centered around a brand (or product) that perceive the brand (product) in a special way, not only buying it, but being its admirers, ambassadors and even fanatical followers. The customer community can take the form of a brand community, which is distinguished by: shared awareness, rituals, traditions and a sense of moral responsibility (Skorek, 2015). Communities of this type may be, above all, a tool to strengthen the brand of a company or product, a source of knowledge about it, and a tool for its dissemination;

- a community of former employees (talents and knowledge employees)—former knowledge employees and talented employees who maintain informal relations; the community can be the foundation for creating new relationships with environmental entities and a source of valuable knowledge;

- knowledge agents—or a change agent, a person who helps management create improved and highly effective ways of doing business. Their functions can also be automated using specialized systems (Wiig, 1995).

The person or business entity (e.g. a consulting company) acting as a knowledge agent can identify external research partners and negotiate contracts (Massingham & Al Halaibi, 2017). Generally, it can be assumed that they are business entities (a person or organization) or IT tools whose purpose is to support members of the business ecosystem, e.g. in the process of knowledge transfer;

- knowledge broker—a position or team of people who should be appointed in every knowledge management organization. The function of the knowledge broker is mainly to oversee the improvement, development, and functioning of the organization's knowledge management system, but their activities may go beyond the organizational boundaries, intertwining with the tasks of a knowledge agent (e.g. organizing access to external experts);

- open innovation—an approach comprising a wide range of activities: a) access to new ideas, knowledge, and technologies from various external sources, e.g. other companies, universities, R&D institutions, intermediaries in partnership, licensing and joint ventures; b) acquiring, integrating, and leveraging external ideas and knowledge in innovative processes, products, and services; c) involvement and cooperation with consumers, suppliers, competitors, networks; and d) extracting and licensing to generate value from ideas, knowledge, and technologies that do not match the organization's core strategy (Rupo & Abbate, 2016);

- problem solving teams—groups initiated by various business ecosystem actors to solve current problems in cooperation, or for other purposes. After addressing the failures, they are reborn (at the initiative of one of the business ecosystem actors) in a different system, to continue removing further threats or errors in cooperation and in the implemented tasks. If they focus on the partner's operational activities and related problems, they are conducive to creating and sharing hidden knowledge, which is very limited when using traditional training methods;

- prosumerism—understood as “customer made”, it is a business model concept in which the company offers customers products and services of its own invention (at least in terms of basic assumptions, functionalities, or appearance), but modifies, upgrades, or decorates them according to the wishes of its clients (Gach, 2008). The refinement of this concept is mass customization, based on the company's ability to prepare individually designed products, services, programs, or communication processes in accordance with customer needs (Kotler, 2003). These types of methods can increase the company's knowledge of customer expectations, stimulate the development of design capacity and operational flexibility (in terms of production, provided services), as well as increase the level of innovation;

- joint intellectual property—an initiative involving the joint use of intellectual property owned by various entities of the business ecosystem (Leibold, Probst, & Gibbert, 2002);

- CKM—while CRM focuses on knowledge from, about and for the client, CKM goes a step further, to include the client in the process of knowledge creation. CKM allows organizations to find, acquire, and leverage the competences inherent in clients. Therefore, CKM includes planning, organizing, and controlling ventures related to the client's knowledge and innovation potential, which are aimed at acquiring the knowledge and developing it by fusing it with the organizational knowledge. Co-creating new knowledge with the client to improve the company's operations and create innovative solutions is also knowledge development (Mikuła, 2016). CKM is implemented with the support of some of the above-mentioned tools (Leibold et al., 2002): prosumerism, team-based co-learning, mutual innovation, CoPs, joint intellectual property.

### **Managerial Implications**

In the light of the above considerations, several tips for managers can be derived:

- in managing an organization, it is necessary to take into account its business ecosystem and strive to involve in the process the value of its resources;
- HCM within the business ecosystem is a new challenge, but it is necessary to first introduce this concept in the organization, to implement a strategy and to gain experience in using HCM instruments. Li (2010, p. 46) rightly points out that “organizations should make efforts to provide knowledge sharing systems that can be integrated into employees’ daily work practice or to design jobs that entail knowledge sharing if they want to promote knowledge sharing effectively”. The new way of organizing work must include cooperation with business ecosystem actors and the possibility of joint use of HC offered by the business ecosystem;
- informal relations between people working in the business ecosystem and the functioning of various types of communities supporting the implementation of goals should be supported, and openness in the communication processes of cooperating people should be sought. Intensive and open communication between the business ecosystem actors should eliminate any notions of hidden agendas of the cooperation and promote confidence;
- the immateriality of knowledge and the limited ability to verify knowledge investments can lead to a moral hazard that would impede the smooth development of cooperative innovation (Y. Chen & W. Chen, 2020). Therefore, business ecosystem actors should strive to establish clear foundational values and norms, e.g. counteracting the “parasitic” tendencies of unrequited use of their partners’ resources.

### **Limitations and Future Directions**

The article is limited by its theoretical approach, which requires empirical verification and a more thorough analysis of HC components. It would be practical to verify which elements of the presented concept are actually used in the practice of business ecosystems. Further basic research directions that can be defined at this time include: 1) configuring HCM with strategic management and strategic knowledge management of the organization; 2) determining the types of organizational leadership within the business ecosystem and; 3) indicating which of them may turn out the most desirable in terms of optimal use of the business ecosystem’s HC, depending on the basic conditions (e.g. type of business ecosystem). However, the upcoming research will focus on how HCM is affected by the uneven distribution of HC and knowledge in the organization, and how it affects other inherent differences between people, e.g. in terms of knowledge, national culture and age.

### **Conclusion**

The interest in HCM is increasing gradually. It is possible that in the near future many researchers will extend their research area, from knowledge management to HCM. This would be beneficial for HCM, as the current theories and practical experience in knowledge management can have an invaluable impact on the development of the HCM theory. However, it is necessary to integrate in practice the actions that were taken from the presented concepts supporting HCM.

The methods that can be used in HCM are just examples. Many of the methods that can be used are not indicated here, e.g. HC measurement. In addition, new opportunities are created by IT solutions, such as Web 2.0, Enterprise 2.0, SharePoint and other proprietary tools with similar functionalities. The multitude of methods that can be used for the joint use of HC in the business ecosystem means that they cannot all be

implemented simultaneously. They must be deliberately selected depending on the situation, existing needs, as well as previous experience of both employees and the business ecosystem community.

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