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## **THE CONCEPT OF INTELLECTUAL CAPITAL MEASUREMENT IN START-UP BUSINESS ECOSYSTEM**

### **Summary**

The article presents a proposal of an approach to measurement of start-up intellectual capital and intellectual capital of entities within its business ecosystem and proposes indicators which could be used. A start-up company has also been characterised, as well as its business ecosystem and intellectual capital. In the final part, the benefits which a start-up could derive thanks to knowing the intellectual capital of the business ecosystem have been presented.

**Key words:** start-up, business ecosystem, intellectual capital, intellectual capital measurement.

### **KONCEPCJA POMIARU KAPITAŁU INTELEKTUALNEGO W EKOSYSTEMIE BIZNESU START-UPU**

### **Streszczenie**

Artykuł prezentuje propozycję podejścia do pomiaru kapitału intelektualnego start-upu i kapitału intelektualnego podmiotów jego ekosystemu biznesu wraz ze wskazaniem możliwej do wykorzystania grupy wskaźników. Scharakteryzowano również przedsiębiorstwo typu start-up, jego ekosystem biznesu oraz kapitał intelektualny. W końcowej części przedstawiono korzyści, jakie może odnieść start-up dzięki uzyskaniu wiedzy na temat kapitału intelektualnego ekosystemu biznesu.

**Słowa kluczowe:** start-up, ekosystem biznesu, kapitał intelektualny, pomiar kapitału intelektualnego.

### **Introduction**

Modern business world is very complex. High turbulence of the environment, the appearance of unforeseen events, the constant change of cooperation systems of enterprises and similar events disrupt the implementation of management strategies and operational activities of economic entities. While large business entities embedded in cooperation arrangements built over the years cope in these conditions relatively well, young and small businesses in the form of the so-called start-ups face great difficulties in their activities, which often lead to their collapse. Therefore, an extremely important task of their owners and managers is to build cooperative relations with entities from their surroundings within the environment known as the business ecosystem. Their goal should first of all be to gain access to the intellectual capital of entities from their environment to strengthen their own business potential and to build cooperative systems that allow to introduce the manufactured products and services to the market. In order not to make mistakes in this respect, which can be extremely costly, it is necessary to study the start-up's intellectual capital and intellectual capital of entities in the business ecosystem. The aim of the article is to present the approach to measuring intellectual capital of a start-up and entities in its business ecosystem, along with an indication of indicators that can be used. Before doing so, the start-up, its business ecosystem and intellectual capital were characterized. The final part presents the benefits that a start-up can derive from obtaining knowledge about the intellectual capital of the business ecosystem.

### The nature of a start-up company

A start-up is a company distinguished by the fact that it is a new company (just established), it is active (i.e. it operates, trades, employs at least one employee and invests; it is not a company "on paper") and independent (has not been formed by another organisation that would make it legally, financially and functionally dependent, is not a subsidiary or a branch of another company and focuses on a niche market) (Luger, Koo, 2005). A start-up is not a company based on a previously proven business model, thus minimising the risk of failure. A start-up is also not a company established in a franchise system, nor is it a proverbial "greengrocery" or any other form of traditional trade (Skala, 2017). Such companies are usually small, young, initially financed and operated by a small group of people or one person, they offer something which is not available on the market or exists on the market, but is of low quality (Sharifi, Hossein, 2015, za: Kamaldeep, 2017). Moreover, in order to include a given enterprise among start-ups, it needs to implement some form of innovation (not necessarily product-related) (Skala, 2017). Start-ups do not rely on the experience of other organizations, therefore their operation is characterized by entrepreneurship, high flexibility and quick pace of development, as well as innovation of implemented activities or manufactured products. Examples of start-up features are presented in table 1.

Table 1

*Examples of start-up features according to different authors*

Author(s)	Start-up features according to definition
S. Blank	a temporary organisation looking for a scalable, repeatable and profitable business model
C. Christensen	organisations that develop <i>disruptive innovations</i>
A. Damodaran	an organisation with high growth potential at an early stage of development, no history, dependent on capital sources, low survival rate
Kauffman Foundation	innovation-oriented enterprises or organisations employing at least one non-shareholder for not more than one year
K. Łuczak	an enterprise at an early stage of development, with high growth potential, looking for an optimal business model

Source: own study based on „Spiralna definicja startupu”, A. Skala, 2017, *Przegląd Organizacji*, 9, p. 36.

A start-up is usually a small company that uses a variety of knowledge-intensive services and resources (including financial) from other entities in its environment. Its human resource is often a small number of employees gathering a key part of human capital able to enter into relations with the human capital of external entities and "absorb" their knowledge. A distinguishing feature of this type of economic entity is the fact that its intellectual capital is the basis of its existence and development, and within it mainly human capital, structural capital, customer capital and intellectual property (but of course the order can be different). When does a start-up become a classic enterprise, however? Opinions on this subject are different. Some believe, for example, that after one year of operation and reaching the break-even point, because in the initial stage of existence such an entity obtains revenues lower than operating costs (Makowiec, 2017). In the USA, however, a limit was set after which a start-up turns into a standard enterprise: a turnover of USD 50 million in the last 12 months, the number of employees being 100 and more and the value of the enterprise over USD 500 million (Hudáková, 2018).

## Start-up Ecosystem

Every economic entity operates in an environment that can be viewed from different perspectives. Classically, the environment of an organisation is distinguished as closer and further. However, a different perspective of the so-called business ecosystem can be adopted.

Research conducted in relation to business ecosystems has helped to broaden knowledge about the complex interactions of such elements as: pioneering entrepreneurs, formal and informal networks, infrastructure, culture, venture capital, entrepreneurial support from the government by granting incentives and simplifying rules, research universities (Abbate, Accordino, La Rocca, Rupo, 2017).

The business ecosystem, referred to as a bio-corporate system, refers to an organisation as a living organism within the business ecology of a larger system, i.e. transcending various industries and the diversity of stakeholders and co-shaping the organisation and its environment. A special distinguishing feature of an organization operating in the business ecosystem is the fact that it cooperates with the competition (Leibold, Probst, Gibbert, 2002).

Table 2

*Examples of definitions of business ecosystem*

Author(s)	Definition
J.F. Moore (2006)	The business ecosystem is a network of interdependent niches which in turn are occupied by organisations. It can be said that these niches are more or less open to the extent that they include alternative contributors.
S. Ben Letaifa, Y. Rabeau (2012)	The business ecosystem is a kind of network that goes beyond the traditional view of network business connections. It provides a more holistic view of the various socio-economic actors directly or indirectly involved in open innovation in a given sector. The business ecosystem can vary in scope: local, national or international.
S.A. Zahra, S. Nambisan (2012)	The business ecosystem is a group of companies, and possibly also other entities, including natural persons, that interact and are connected by a set of dependencies producing goods, technologies, and services that customers need.
E. Stańczyk-Hugiet (2015)	The business ecosystem is organised as a complex network of enterprises whose integrated efforts are focused on customer needs.
B. Mikuła (2018)	The business ecosystem of a given enterprise consists of entities in its immediate environment, directly linked by cooperation relations, focused on the implementation of an e.g. innovative product, service or process. Although they have common goals, there is a degree of competition between them resulting from entrepreneurship.

Source: own study based on literature indicated in the table.

The business ecosystem is a group of companies and other organisations which may also include individuals who, while interacting, use mutual relationships to produce goods, technologies or services and are of interest to customers. Such a community is characterised by mutual, multi-directional connections. Extensive business ecosystems usually arise around companies that are the so-called keystones. Their ecosystem is a kind of network of companies and other entities (e.g. individual clients, various types of commonwealths and communities) that support the functioning of the main organisation and the implementation of processes taking place in it (e.g. design and production). The result of joint action is a synergy effect and an increase in the level of flexibility of operation. Examples of business ecosystem definitions are shown in table 2.

Similarly to keystones (e.g. corporations), also start-ups have their business ecosystems which may include other start-ups (Sup), key players (keystones), business partners (other companies), universities, Research and Development Centers (R&D), KIBS (*knowledge intensive business services*) directly involved in serving start-ups and keystones as well as other business partners, *Venture Capital*, *Business Angels*, banks, advisory and mentoring organisations, business incubators, accelerators, co-working spaces, regulatory government agencies, communities of practitioners, entrepreneurs or knowledge and others, individual clients. There is cooperation between these entities, within which there is a flow and joint use of intellectual capital, which is the basis for value creation. It is important to mention that the business ecosystem creates this value for its participants in a situation where they are not able to commercialise a product or service project on their own based on their own competences. Such an ecosystem is organised as a complex network of enterprises whose integrated efforts are focused on customer needs. The basic ecosystems of this type are innovation ecosystems (whose competitiveness is based on innovation) and entrepreneurial ecosystems (whose competitive strength results from entrepreneurship).

### **Intellectual Capital**

Every organisation has at its disposal both tangible and intangible resources. Intangible resources can be defined as resources which do not take the form of things or money (physical and financial resources). Intellectual capital is more often than not identified directly with intangible resources. In this article, however, it is assumed that intellectual capital is a part of intangible resources that is or can be used to create value.

Research on the intellectual capital of an organisation has developed in four phases. The first phase covered conceptual studies and was dominated by concepts created by management practitioners regarding the definition of the construct and classification of its components; the second one concerned the study of the impact of intellectual capital on the creation of the value of an organization; the third one focused on its measurement and correlation with other components of the organization, whereas the fourth one focused on particular sub-capitals (Roos, 2017; Hussinki, Ritala, Vanhala, Kianto, 2017; La Torre, Botes, Dumay, Rea, Odendaal, 2018; de Castro, Diez-Val, Delgado-Verde, 2019). The nature of the phenomenon itself should be perceived dually – from a static perspective which boils down to presenting the scheme of intellectual capital, as well as from a dynamic perspective illustrating all dependencies between its individual elements. Table 3 presents exemplary definitions and basic classifications of an organisation's intellectual capital. In the further part of the article, however, intellectual capital is divided into human capital, relational capital and organisational capital.

Table 3

*Examples of definitions and components of intellectual capital in the perspective of two dominant approaches*

	Author(s)	Definition of intellectual capital and its components
Static approach	A. Brooking (1996)	Intellectual capital is the result of the implementation and synergistic interaction of several sub-processes (i.e. formulating a market strategy, knowledge management, selection of appropriate instruments for shaping the organisation, intellectual property management). Its components are: market resources, human resources, organisational resources and intellectual property.
	R. Booth (1998)	Intellectual capital is the ability to turn new ideas into products or services. Its components are: people (competences, attitudes), the market (reputation, relationships with customers, distribution channels), knowledge (hidden, overt), infrastructure (processes, databases) and intellectual property (patents, trademarks).
	M. Bratnicki (2000)	Intellectual capital is the sum of knowledge possessed by people who make up the company and the practical transformation of this knowledge into components of the company's value. Its components are: social capital (structural capital, the dimension of interpersonal relations, cognitive capital), human capital (competence, intellectual dexterity, motivation) and organisational capital (internal structure, external structure, development capital).
	T.A. Stewart (2001)	Intellectual capital is knowledge that allows you to transform raw materials into more valuable ones enabling you to obtain a certain financial value. Its components are: human capital, structural capital and customer capital.
	L. Edvinsson, M.S. Malone (2001)	Intellectual capital is the knowledge, experience, organisational technology, customer relations and professional skills that give Skandia a competitive advantage on the market. Its components are: human capital, structural capital (organisational and customer capital).
Dynamic approach	Project MAGIC (Seetharaman, Sooria, Saravanan, 2002)	The essence of intellectual capital comes down to the description of the results of the functioning of its individual components and their mutual relations. Its components are: human capital as the basic potential of each organisation, organisational capital, i.e. the ability to transform the company's potential (human capital) into specific products (goods and services), market capital reflecting competences in the field of management and integration of external areas of influence with the company's stakeholders and innovation capital relating to the ability to continuously improve and develop all potential and environmental variables.
	G. Petrash et al. (1996)	According to the value platform model, when creating the intellectual capital of an organisation, it is necessary to manage the flow of knowledge between: human capital (the ability of individuals and teams to meet customer requirements; competences; thought patterns), customer capital (strength and value of customer relationships) and organisational capital (the organization's ability to create codified knowledge based on its resources – databases, business processes, technological infrastructure; organizational culture, values, standards).

Source: own study based on literature indicated in the table.

## **A proposal how to measure the intellectual capital of a startup's business ecosystem**

Intellectual capital, as the basic factor of modern competitive advantage, should also be shaped in the context of the currently functioning business ecosystems, also typical of start-ups. L. Edvinsson (2001) recommends that the intellectual capital development procedure should include at least the phases of visualization, strengthening intellectual capital, transforming human capital into structural capital and strengthening structural capital. Structuring and measuring the intellectual capital of a start-up ecosystem are undoubtedly crucial activities in the first stage of visualization.

These activities are fundamental because their effects should result in the confirmation of the ecosystem's ability to achieve the intended goals, setting directions for the improvement of the system including planning areas for research and development, providing information to ecosystem reconfiguration programs referring to particular sub-capitals constituting the intellectual capital of the constellation, concentration on the organizational learning of the system, expanding its memory. They also intend to assess the value of the entire system of interaction and interdependence within the ecosystem (Brooking, 1996).

Efficient measurement of the intellectual capital of a start-up ecosystem should therefore guarantee (Edvinsson, Malone, 2001; Skyrme, Amidon, 1998; Urbanek, 2006): strong, lasting and loyal cooperation between individual actors of the network of systems defining a specific ecosystem, identification of key actors of the connection, including individual knowledge workers and the strength of their influence on the competitive position of the system, defining the sources of advantages of the ecosystem as a whole and its individual components, obtaining confirmation of the benefits of investing in activities resulting from managing intangible resources of the system and formulating guidelines for their management. Additionally, it should be a reference for other actors of connections aspiring to a functioning constellation. However, one should remember about the basic recommendations for constructing a method of measuring intellectual capital dedicated to a specific constellation (Cascio, 2001; Bratnicki, 2000). Namely, the measurement method should be as simple as possible – only those components and activities that are important from the point of view of the system strategy and the market in which the ecosystem operates should be verified. The indicators resulting from the review should be assigned weights, and categories and the indicators that do not affect the final value of intellectual capital should not be included in the calculation of the final index.

Due to the specificity of a start-up ecosystem, as part of the intellectual capital structuring phase of the analyzed frame of reference, it is proposed to adopt the convention of perceiving intellectual capital as the sum of human capital, relational capital and organizational capital. At the same time, it is assumed that inference will be carried out in the dimension of the start-up's inside and its ecosystem. Therefore:

- 1) what should be analysed is the human capital inside the start-up in the form of personalized knowledge, qualifications and motivations of internal stakeholders forming the start-up and human capital of the start-up ecosystem in the form of personalized knowledge and qualifications of the start-up's external stakeholders;
- 2) it is recommended, on the other hand, that relational capital be examined from the perspective of the inside of a start-up, i.e. internal relations between start-up employees, which is based on the sum of their knowledge and relations between knowledge workers and other staff and their superiors, as well as from the point of view of the start-up ecosystem, i.e. relations with other start-ups, with KIBS companies, keystones, other business partners (including universities and R&D institutions, communities, individual clients), relations with Venture Capital, Business Angels, advisory and mentoring organizations, incubators, accelerators;

- 3) in accordance with the adopted convention, organizational capital should be additionally examined as codified knowledge and well-established knowledge and should also be considered in reference to a start-up's inside and its ecosystem.

It is assumed that in order to determine the intellectual potential of a start-up ecosystem centered around its business, the intellectual capital of this start-up should be measured as well as that part of the intellectual capital of the ecosystem entities that is or may be used by the start-up to create value. First of all, it will be necessary to establish the existing direct relations of a start-up with the entities of the ecosystem and then it will be necessary to measure the frequency and volume of intellectual capital flows from the ecosystem to the start-up. Since start-ups are small entities and full information on intellectual capital is usually available to a few key employees, whereas in the birth and youth stages only the owner may have full information, an interview based on a specially developed questionnaire may be a sufficient research method. Examples of proposed intellectual capital (IC) measures that can be applied are presented in table 4.

Table 4

*Examples of measures of intellectual capital of a start-up ecosystem by categories, areas and types of resources*

IC Category	Area	Type of resource	Definition	Measure	Measurement unit
Human capital	start-up inside	Personalised knowledge	A flexible and dynamic intangible substance which is the effect of information processing in thought processes, the carrier of which is a human	The number of knowledge workers	#
				The number of knowledge workers as compared to the number of other employees	%
				Profit per professional	€
		Qualifications	Competences (including knowledge) certified by a document and acquired in the official education system	The number of academic degrees	#
				Training costs per one employee	€
				Creativity – percentage of persons able to contribute to projects	%
		Motivation	Level of meeting expectations	Knowledge worker satisfaction index	#
				Opportunities share – the degree of using development opportunities by employees	%
				Average monthly gross salary calculated per year	€
	start-up ecosystem	Personalised knowledge	A flexible and dynamic intangible substance which is the effect of information processing in thought processes, the carrier of which is a human	The number of the ecosystem's knowledge workers cooperating directly with a start-up	#
				Satisfaction index of external knowledge workers (cooperative potential)	#
				Index of support provided by the ecosystem's knowledge workers (support, keeping in touch, ease, stability, variability)	#
		Qualifications	Competences (including knowledge) certified by a document and acquired in the official education system	The number of academic degrees	#
				Creativity – number of persons able to contribute to projects	#

Relational capital	start-up's inside	Internal relations between knowledge workers	The entirety of dependencies and ties that connect knowledge workers, influencing their attitudes and actions and shape working conditions, defining the context of functioning	Number of joint ventures for the design of new products	#
				Assessment of the work atmosphere on a point-based grading scale	#
				Mutual trust – the average number of people indicated by employees as honest and trustworthy	#
		Relations between start-up knowledge workers and their managers	The entirety of dependencies and ties that connect knowledge workers with start-up managers, defining the determinants of their behavior in the organization	Formal barriers – facility of access to superiors (expressed on a point-based scale)	#
				Communication between knowledge workers and start-up managers – the amount of time devoted on average during the day to direct contacts with others	#
				Assessment of the work atmosphere on a point-based grading scale	#
		Relations between start-up knowledge workers and other employees	The entirety of dependencies and ties that connect employees influencing their attitudes and actions and shape working conditions, defining the context of functioning	Sharing knowledge – amount of time devoted weekly to meetings, debates, discussing information gained during trainings	#
				Assessment of the work atmosphere on a point-based grading scale	#
				Mutual trust – the average number of people indicated by employees as honest and trustworthy	#
	start-up ecosystem	Relations with other start-ups	All dependencies, ties and relations connecting a start-up with particular elements of its ecosystem, determining the conditions of functioning/operating in it	Investments in relations per one start-up (meeting costs, non-product related expenses, investment expenses incurred on training other start-ups)	€
				The number of permanent start-up partners	#
				Win/loss index – the ratio of the number of commonly developed projects to the number of actually implemented joint projects	%
		Relations with KIBS companies		Quality of communication with KIBS companies – estimated percentage of products developed in significant cooperation with KIBS companies	%
				Perception by partners – the number of cooperation proposals with KIBS companies	#
				Index of satisfied partners of KIBS companies	%
		Relations with keystones		Quality of communication with keystones – an estimated percentage of products developed with significant collaboration with keystones	%
				Perception by keystones – The number of proposals to cooperate with keystones	#
				Ratio of keystones satisfied with cooperation	%
		Relations with business partners		Quality of communication with business partners – an estimated percentage of products developed in significant cooperation with business partners	%
				Perception by business partners – the number of proposals to cooperate with business partners	#



			Ratio of business partners satisfied with cooperation	%
	Relations with universities		Quality of communication with universities – an estimated percentage of products developed in significant cooperation with universities	%
			Perception by business partners – the number of proposals to cooperate with universities	#
			Ratio of universities satisfied with cooperation	%
	Relations with R&D institutions		Quality of communication with R&D institutions – an estimated percentage of products developed in significant cooperation with R&D institutions	%
			Perception by R&D institutions – the number of proposals to cooperate with R&D institutions	#
			Ratio of R&D institutions satisfied with cooperation	%
	Relations with Venture Capital		Quality of communication with Venture Capital – an estimated percentage of products developed in significant cooperation with Venture Capital	%
			Perception by Venture Capital – the number of proposals to cooperate with Venture Capital	#
			Ratio of Venture Capital satisfied with cooperation	%
	Relations with Business Angels		Quality of communication with Business Angels – an estimated percentage of products developed in significant cooperation with Business Angels	%
			Perception by Business Angels – the number of proposals to cooperate with Business Angels	#
			Ratio of Business Angels satisfied with cooperation	%
	Relations with advisory and mentoring organizations		Quality of communication with advisory and mentoring organizations – an estimated percentage of products developed in significant cooperation with advisory and mentoring organizations	%
			Perception by advisory and mentoring organizations – the number of proposals to cooperate with advisory and mentoring organizations	#
			Ratio of advisory and mentoring organizations satisfied with cooperation	%
	Relations with incubators		Quality of communication with incubators – an estimated percentage of products developed in significant cooperation with incubators	%
			Perception by incubators – the number of proposals to cooperate with incubators	#

		Relations with accelerators		Ratio of incubators satisfied with cooperation	%			
				Quality of communication with accelerators – an estimated percentage of products developed in significant cooperation with accelerators	%			
				Perception by accelerators – the number of proposals to cooperate with accelerators	#			
				Ratio of accelerators satisfied with cooperation	%			
		Relations with communities		Mutual trust – the average number of communities indicated as honest and trustworthy	#			
				Perception by communities – the number of proposals to cooperate with communities	#			
				Ratio of communities satisfied with cooperation	%			
		Relations with individual clients		Perception by individual clients – number of cooperation proposals from individual clients	#			
				Quality of communication with individual clients – an estimated percentage of products developed in significant cooperation with individual clients	%			
				Ratio of individual clients satisfied with cooperation	%			
		Informal relations with individual clients		Mutual trust – average number of individual clients indicated as honest and trustworthy	#			
				Win/loss index – the ratio of the number of commonly developed start-up projects to the number of actually implemented joint projects with individual clients	%			
				Average durability of a start-up's relations with individual clients	#			
		Informal relations with knowledge workers from other institutions		Mutual trust – average number of knowledge workers from other institutions indicated as honest and trustworthy	#			
				Win/loss index – the ratio of the number of commonly developed start-up projects to the number of actually implemented joint projects with knowledge workers from other institutions	%			
				Average durability of the start-up's relations with knowledge workers from other institutions	#			
		Organisational Capital		start-up's inside	Codified knowledge	A flexible and dynamic intangible substance resulting from information processing in thought processes located in databases and documents	Number of patents held	#
							Number of prepared patent applications	#
							Quantity of complete product documentation	#
					Embedded knowledge		Profit from innovative products prepared independently against the total profit	€
Total number of types of innovative products prepared independently	#							

		processes located in products and services	The number of independent products against the number of all products developed and manufactured independently	%
start-up ecosystem	Codified knowledge	A flexible and dynamic intangible substance resulting from information processing in thought processes located in databases and documents	Total number of joint patents held	#
			Total number of commonly prepared patent applications	#
			Total quantity of complete documentation of commonly developed products	#
	Embedded knowledge	A flexible and dynamic intangible substance resulting from information processing in thought processes located in products and services	Total number of types of commonly manufactured products	#
			Total number of types of innovative products prepared jointly	#
			The number of innovative products against the total number of products developed and manufactured jointly	%
Measurement units: € – indicator expressed in monetary units, % – indicator expressed as percentage, # – indicator expressed in points.				

Source: own study.

## Conclusion

The analysis of the intellectual capital of a start-up ecosystem should contribute to resolving the following issues (Pietruszka-Ortyl, 2007):

- identification of the intangible resources base of a start-up and the entire constellation;
- verification of the degree to which a start-up and its ecosystem use all intangible resources at the disposal of all particular nodal points;
- assessing the adjustment of intellectual capital held to the possibility of achieving the adopted strategic goals and formulating a start-up strategy in the language of resources in the context of the ecosystem in which it operates;
- diagnosis of the impact of particular elements of intellectual capital on creating the value of a start-up and the constellation as a whole;
- determining whether the system and its individual actors develop the intellectual capital which they have;
- recognising intellectual capital as a priority factor in managing a start-up and its ecosystem;
- making people aware of the importance of tacit knowledge and non-codified processes occurring in a start-up and its ecosystem, especially from the individual, group, organizational and inter-organizational perspective;
- standardization of the language, meanings and terminology in the system – creating the internal language of the constellation.

The assessment of the intellectual capital of a business ecosystem by a young start-up is certainly a difficult task. Difficulties in obtaining necessary information may be caused, among others, by poor cooperation relations, lack of mutual trust, fear of the loss of valuable knowledge or the variability of the configuration of entities in the entire ecosystem. However, a start-up's knowledge of the intellectual capital of the business ecosystem is a prerequisite for making correct decisions as regards locating itself within the entire system, developing cooperation with ecosystem entities, sharing its own intellectual capital with other entities or taking actions aimed at using its partners' intellectual capital.

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