

## УПРАВЛІННЯ ПІДПРИЄМСТВОМ

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CROWDSOURCING AS A PART OF  
COMPANY'S INTELLECTUAL CAPITAL

**Urgency of the research.** In modern conditions of management it is important for enterprises to form of the necessary amount of intellectual capital.

**Target setting.** Most domestic enterprises do not pay enough attention to this issue. That is why it is very important to determine the directions of its growth.

**Actual scientific researches and issues analysis.** The issue of intellectual capital management, its influence on innovation activity has been considered in the works of L. Antonyuk, S. V. Zakharinko, A. Kendiukhov, G. R. Natroshvili, V. Tsipurindy, L. Fedulova.

The issues of crowdsourcing were considered in the works of Paul Whittle, Howe J., Maistrenko O. V., Khymych I.

**Uninvestigated parts of general matters defining.** The issue of evaluating the intellectual component of energy saving policy, in particular, with the help of the apparatus of hybrid neural networks, remains poorly developed.

**The research objective.** It is important to assess the factors influencing the intellectual capital of industrial enterprises, to determine the possibility of increasing the efficiency of using intellectual capital with the help of crowdsourcing.

**The statement of basic materials.** The components of intellectual capital have been investigated. The indexes of knowledge economy of Ukraine and developed countries have been analyzed. The essence of crowdsourcing and its components have been defined; the modern examples of its application in the world and in Ukraine have been researched. It has been determined that this tool is used mainly in the social sphere in Ukraine. The importance of its use in raising the intellectual component of innovation activity of domestic enterprises has been substantiated.

**Conclusions.** It has been established that active involvement of students in the activity of the enterprise can be very promising for domestic enterprises.

Recommendations for industrial enterprises to increase attention to crowdsourcing as an important source of intellectual capital growth were developed.

**Keywords:** intellectual capital; human capital; organizational capital; market capital, crowdsourcing.

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**Urgency of the research.** In modern conditions, due to the limited quantity of natural resources concentrated in the so-called basic industries (fuel, electricity, metallurgy, metalworking), as well as economic inexpediency in the constant growth of the used resources, it is high technologies, intelligence, scientific discoveries; innovations that will be able to create new materials and substances with much higher performance and utility rates are the main factors which determine the prospects and degree of economic growth.

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КРАУДСОРСИНГ ЯК СКЛАДОВА  
ІНТЕЛЕКТУАЛЬНОГО КАПІТАЛУ  
ПІДПРИЄМСТВА

**Актуальність теми дослідження.** В сучасних умовах господарювання підприємствам важливо формувати необхідний обсяг інтелектуального капіталу.

**Постановка проблеми.** Більшість вітчизняних підприємств не приділяє належної уваги даному питанню. Саме тому, досить важливим є визначення напрямків його зростання.

**Аналіз останніх досліджень і публікацій.** Питання управління інтелектуальним капіталом, його впливу на інноваційну діяльність розглядалися в працях Л. Антонюк, С. В. Захарінка, А. Кендюхова, Г. Р. Натрошвілі, В. Ціпуринди, Л. Федулової.

Питання, пов'язані із краудсорсингом розглядаються такими вченими як П. Вітла, Дж. Хоуе, Майстренко О. В., Хімич І.

**Виділення недосліджених частин загальної проблеми.** Важливим є дослідження питання використання краудсорсингу вітчизняними підприємствами як способу збільшення інтелектуального капіталу.

**Постановка завдання.** Необхідним є оцінювання чинників, які впливають на інтелектуальний капітал промислових підприємств, визначення можливості підвищення ефективності його використання за допомогою краудсорсингу.

**Виклад основного матеріалу.** Досліджено складові інтелектуального капіталу. Проаналізовано індекси економіки знань України та розвинених країн. Визначено сутність краудсорсингу, його складові, досліджено сучасні приклади його застосування у світі та в Україні. Визначено, що в Україні даний інструмент використовується переважно у соціальній сфері. Обґрунтовано важливість його використання в підвищенні інтелектуальної складової інноваційної діяльності вітчизняних підприємств.

**Висновки.** Встановлено, що досить перспективним для вітчизняних підприємств може стати активне залучення студентів в діяльність підприємства. Розроблено для промислових підприємств рекомендації щодо підвищення уваги до краудсорсингу як важливого джерела зростання інтелектуального капіталу.

**Ключові слова:** інтелектуальний капітал; людський капітал; організаційний капітал; краудсорсинг.

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**Target setting.** Those companies that innovate actively in their activities and have significant intellectual capital are more competitive. However, domestic enterprises aren't sufficiently used such tool that can be considered as a part of intellectual capital as crowdsourcing.

**Actual scientific researches and issues analysis.** The issue of intellectual capital management, its influence on innovation activity has been considered in the works of L. Antonyuk, S. V. Zakharinko, A. Kendiukhov, G. R. Natroshvili, V. Tsipurindy, L. Fedulova.

In the whole world, at this stage, there is a growing interest in opportunities for collective networking, expansion of the expert community, including new interested participants who have their own view on a particular problem. Crowdsourcing is one of the forms of attracting people to direct participation in collective creativity, solving problems and generating offers for providers of tasks. The questions related to the consideration of the essence of crowdsourcing, its types and components are considered by such scholars as Howe J., Brabham D.C., Taeihagh A., Whitla P.

**Uninvestigated parts of general matters defining.** However, the issue of use of crowdsourcing by domestic enterprises as a part of intellectual capital is not sufficiently studied.

**The research objective.** The aim of research is assessment the factors influencing the intellectual capital of industrial enterprises, to determine the possibility of increasing the efficiency of using intellectual capital with the help of crowdsourcing.

**The statement of basic materials.** Innovative development of the economy is inherent to all developed countries of the world, which is both a factor and a consequence of the economic rise of the countries. Its efficiency is determined by the content of the relevant innovation directions that meet the needs of the dynamic development of the economy. In the chain "science - education – production" education is of particular importance, since it is both a source of reinforcement of science by personnel, as well as a factor of providing the population with modern knowledge. To assess the environmental friendliness of the country regarding the effective use of knowledge in economic development, they determine the knowledge economy index, which is presented in Tab. 1. Knowledge economy is an economy in which the source of growth is both specialized (scientific) and everyday knowledge, as a result of their use together with natural resources, capital and labor, the processes of accumulation and use of knowledge become the dominant factor, consequently the competitiveness of the economy is constantly increasing. Tab. 1 shows that Ukraine remains behind the developed countries of the European Union and the World as a whole according to the index of knowledge economy. The table shows that the knowledge economy index consists of four sub-indices: "Economic incentives and institutional system", "Education", "Information infrastructure", "Innovation system". For all sub-indices, except the educational one, Ukraine has rather low rates.

Table 1

### Comparative Knowledge Indices in 2012

Country	Index of knowledge economy	Index of economic stimulus and institutional system	Index of innovation	Index of education	Index of information and communication technologies
Austria	8,61	9,26	8,87	7,33	8,97
Belgium	8,71	8,79	9,06	8,57	8,42
Finland	9,33	9,65	9,66	8,77	9,22
France	8,21	7,76	8,66	8,26	8,16
Germany	8,90	9,10	9,11	8,20	9,17
Italy	7,89	7,76	8,01	7,58	8,21
Latvia	7,41	8,21	6,56	7,73	7,16
Netherlands	9,11	8,79	9,46	8,75	9,45
Poland	7,41	8,01	7,16	7,76	6,70
England	8,76	9,20	9,12	7,27	9,45
Norway	9,11	9,47	9,01	9,43	8,53
Canada	8,92	9,52	9,32	8,61	8,23
USA	8,77	8,41	9,46	8,70	8,51
<b>Ukraine</b>	<b>5,73</b>	<b>3,95</b>	<b>5,76</b>	<b>8,26</b>	<b>4,96</b>

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In order to improve the value of the indexes and the country economy as a whole, it is necessary to improve the economic and legal environment, business development, the ability of society in general and its institutions to more effectively use of existing knowledge and creation of new knowledge.

Moreover, it is important to develop information infrastructure, which is a peculiar framework of knowledge economy.

Thus, one of the important directions of increasing the efficiency of the domestic economy is investing in employees and improving the intellectual capital of enterprises.

In economically developed countries the intellectual factors of economic growth in the form of innovation capital, intellectual products are the strategic factor of economic development. At the same time, Ukraine, like many other European countries, has faced the problem of emigration of highly skilled professionals. If in 2011 the total number of highly skilled employees and people with higher education who emigrated to the highly developed OECD countries was 31 million, then in the period of 2005- 2015, highly skilled migration increased by 72%. In Europe, over the past ten years, 15% of emigrants are individuals with such growing professions as science, technology, engineering, as well as occupations in health and education. Another problem associated with emigration is that part of the employees does not work according to their specialty or they are in low-skilled positions, which does not contribute to intellectual development. Thus, in modern conditions, most domestic enterprises face the problem of the lack of sufficient intellectual capital and, in order to increase their competitiveness, Western top management should often be involved.

It is a generally recognized fact that capital investments into an employee are as profitable as investments in any other factor of production. Intellectual capital, according to P. Drucker, is a significant resource, and not just another resource along with traditional factors. Under the conditions of an innovative economy, the importance of traditional factors gave way to information-intensive ones, and they benefited in the quest for a competitive advantage [1]. Knowledge is a real beneficial force, a means of achieving social and economic results. Management is the use of knowledge to find the most effective ways to use the available information in order to obtain the necessary results. The scientist also supports the idea that the world is ruled by knowledgeable people.

In our opinion, intellectual capital is a set of knowledge, skills, ideas of employees, which can bring certain economic benefits and / or enhance the image of the enterprise. Intellectual capital is essentially an intangible asset, an integral part of the goodwill, which, given the skillful management of the company, can bring significant growth in income, profits, and ultimately the competitiveness and market value of the enterprise.

In general, most authors believe that intellectual capital consists of three components [2-6]:

1. Human capital is a set of knowledge, skills, creative abilities, as well as the ability of owners and knowledge-intensive employees to meet the requirements and objectives of the enterprise.

2. Organizational or structural capital is computer software, databases, organizational structure, patents, trademarks, organizational mechanisms that ensure the productivity of employees and the operation of the enterprise.

3. Market or consumer capital is future consumers of products of the enterprise, the ability of the product to meet the needs of consumers.

First of all, enterprises should increase the level of education of employees, and also cooperate with educational institutions to identify capable potential employees. For this purpose, the countries of the European Union define such an indicator as a stock of human resources in science and technology. It can be used as an indicator of development of knowledge economy and it is calculated taking into account people who have higher education and work in the field of science and technology. In 2016, almost 78.6 million people in the EU-28 aged 15-74 worked in science and technology (considered as human resources in science and technology), which is 2.7% more than in 2015 and represents almost three tenths of the active population [6]. The EU countries pay a lot of attention to intellectual capital, realizing that the employee is the basis that can lead to a significant economic growth of the enterprise. In this regard, in order to increase intellectual capital, it is rather important not only to train personnel, but also to apply an active motivational policy that stimulates the staff of the enterprise to produce innovative ideas and more actively search for ideas to increase the company's income and

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reduce its costs. The motivation for innovative solutions to issues that are constantly arising in the process of operating activities, the development of innovative products, the introduction of innovative marketing are possible without the involvement of a significant amount of financial resources, provided that effective management and implementation of enterprise management practices and planning in the company's activities.

The management of the company should also pay considerable attention to consumers of products, which can also assess the effectiveness of the enterprise and offer directions for improvement of activities. Hence, one way to increase intellectual capital may be crowdsourcing, which is defined as a term related to the process of outsourcing the company's activities to an online community or crowd in the form of an "open call" [7]. Any member of a society can fulfill the assigned task and receive a fee for their efforts.

The vast majority of scientists believe that the first mention of the use of crowdsourcing is the contest held by the British Parliament in 1714, which involved the definition of longevity on sailing ships [8].

As an economic category, the term "crowdsourcing" was first proposed by Jeff Hoe in 2006, which defined crowdsourcing as "a process in which the company transfers certain functions that have previously been relied on employees and outsourcing companies as well as vendors to an uncertain, rather large number of people in the format of an open request" [9].

Crowdsourcing is also defined as informational engagement of the crowd in order to solve problems, complete tasks, create ideas and production, in which the scattered knowledge of individuals and groups is used by a combination of innovative processes coming out of the crowd to reach effectively the goals set and initiated by the organization [10-11].

Crowdsourcing is also understood as the organization of the work of a group of people over any task for the sake of achieving common good. It is a practice of obtaining the necessary services, ideas or content by requesting assistance, addressing large groups of people, especially the online community, the transfer of certain production functions to an uncertain circle of persons, which does not involve the conclusion of an employment contract [12].

Consequently, all authors agree that crowdsourcing involves attraction of a group of people (which can either be selected by the enterprise itself or be arbitrary) to solve a particular task.

Crowdsourcing is part of what is called "user-based innovation". A key distinction between crowdsourcing and traditional communication tools is the unambiguous focus on action. A person does not just spend his resources; he directs them to a specific task.

Thus, in general terms, crowdsourcing is a process for organizing the possibility of using the knowledge, ideas, and mental skills of a certain group of people to solve the problems. At the same time, such an engagement can take place both on a paid basis and on a royalty-free basis.

The increase in the sales of personal computers and other digital devices and the increase in the share of devices connected to the Internet have significantly reduced the costs of involving participants in the Internet communities, including those engaged in crowdsourcing, and the cost of searching and processing idea; many billions of people have become potential participants in crowdsourcing. Therefore, the emergence and spread of the Internet has intensified this form of cooperation with consumers.

There are plenty of tools that help you to use crowdsourcing on the Internet, including social networks based on information dissemination and approval. Any enterprise, provided that it builds efficiently the program of crowdsourcing, has the opportunity to cover a significant network of real and potential consumers of products, goods, works and services in a matter of seconds.

This tool is especially interesting for those companies that have their own sites, as well as pages in social networks in several languages, which increases the number of people who consider it necessary to assist the company in solving certain issues.

So, crowdsourcing is at the junction of two phenomena that are widespread in the modern economy: business socialization and open innovation.

Such areas of use of crowdsourcing can be distinguished [13]:

- in the process of creating the results of creative work;
- for use of group intellectual abilities of the society;

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- for the purpose of data filtering;
- for aggregation of financial resources.

Today there are three marketing areas in which firms are actively using public opinion, namely product development, advertising and marketing research [7].

Within each of these areas, two different approaches are used where the consumer is widely used:

- the tasks were open to practically anyone who wanted to complete them,
- the enterprise restricts those who could take part in the task.

To distinguish between these two types of tasks, companies use a variety of service providers from open public sites to closed communities of previously viewed people.

Firms often have problems collecting customer feedback, for use in product development. Crowdsourcing has accelerated the process of receiving feedback from end users in the following ways:

1) The large number of consumers / end users who can provide feedback can be greatly increased, since offers and developments can come not only from existing customers, but from potential customers with whom the company had no links before.

2) The enterprises are able to interact with consumers instantly and directly, there is no need for information that needs to be filtered from vendors or other members of the distribution channels.

3) Instead of consumers who provide generalized special offers for new products, firms can specifically adapt product development areas that consumers need.

Taking these areas into account, it becomes apparent that crowdsourcing is one of the components of the company's intellectual capital. The active use of this tool can contribute to a significant increase in intellectual capital, an increase in profits at relatively low cost. This is especially true for small and medium enterprises.

Firms use crowdsourcing to get information and advice on their product development efforts from existing end users and experts who can address a particular scientific or design problem. Other firms offer a community of people to develop their own products, which the client firm can then make in their favor by distributing profits.

In general, various approaches to the classification of crowdsourcing are distinguished in the literature (supplemented on the basis of [14-16]):

- 1) by the sphere of life (business, social, political);
- 2) by the type of problem solving (creation of a product (content), voting, searching for a solution, searching for people, collecting information, collecting opinions, testing, support, collecting funds (crowd funding);
- 3) by the type (creation, wisdom, financing, voting);
- 4) depending on the subject of the organizer (crowdsourcing by the company, crowdsourcing, carried out by a third-party organization);
- 5) depending on periodicity (permanent, temporary, one-time);
- 6) by the content (aimed at finding a solution to the problem posed by business, aimed at creating a finished solution, product, service according to the requirements, aimed at making an expert examination of the decision, project, document);
- 7) depending on the participants (employees of the enterprise; local crowdsourcing, national crowdsourcing, global crowdsourcing);
- 8) depending on the accessibility (open, closed);
- 9) depending on the availability of economic benefits (with payment, without payment);
- 10) depending on the goals (cost optimization, increase in sales volumes, search for innovative solutions).

In addition, the following types of crowdsourcing are distinguished in the literature [10]:

- Virtual labor markets are an information and marketing markets where individuals can provide online services that can be performed anywhere, which are offered by enterprises, usually through micro-tasks, typing the production model of crowdsourcing in exchange for monetary compensation.

Micro-tasks are actions that can be divided into different stages, which can be completed in parallel and on a scale, using human computing power. Nowadays, most of these tasks require low and intermediate levels of qualification, and the level of compensation for tasks is low.

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- Crowdsourcing tournament is a form of crowdsourcing, in which enterprises set out tasks for specialized IT-mediated platforms that form competitions and establish rules and prize places for competitions. Individuals or groups can publish their decisions through a specialized IT-mediated platform for reviewing to get a prize that ranges from several hundred dollars to hundreds of thousands of dollars or even more.

- Open cooperation - the company publishes issues that are to be solved through the IT system and citizens voluntarily deal with these issues, usually without waiting for monetary compensation. In this case, the level of engagement of ideas from citizens will depend on a number of factors, such as the effectiveness of the "open call" to the enterprise, coverage and engagement of citizens with the IT platform used.

Moreover, today a number of scientists are paying attention to scientific crowdsourcing [16-17]. In particular, the University of Carlton (the USA) uses crowdsourcing tools, including text messages, voice mail and the Internet to explore the history of the Pontiac region through its community. The Heritage Crowd project creates a database for online exhibits using information from residents who actually live in the region [16].

The positive results of universities, colleges and universities that use crowdsourcing show that the best person to do the job is whoever wants to do the job most. Crowdsourcing offers many benefits to the participating students. For example, crowdsourcing gives students the experience of the real world in developing creative solutions to important issues.

Various scientific disciplines can be changed under the influence of new distributed research methods. The first academic discipline that exerted a significant impact of crowdsourcing was the ornithology in which the eBird.org project led to the creation of a worldwide on-line database for bird-watching in real time. The project has come close to a relatively small number of professional ornithologists and a large army of volunteers distributed across the globe.

Consequently, there are a large number of types of crowdsourcing that can be used to increase intellectual capital. In particular, businesses can engage consumers to create a new product, new advertising, and new ideas, to work out a specific area of work that does not contain commercial secrecy and does not require much qualification. Interaction with consumers can take place both through the site of the company, and through social networks, special IT platforms.

The active involvement of students in the activities of the company, in particular as an intellectual asset, is quite promising for domestic enterprises. For this purpose, enterprises can provide their production capacities for carrying out individual practical tasks and scientific and research development of students, and students will have the opportunity to get real practical skills. As a result of this collaboration, enterprises can use the development and experience of students in their production activities and see potential employees.

The use of crowdsourcing brings together both real and potential buyers with the company. The enterprise in this case shows the importance of each consumer and its interest not only in purchasing power, but also in their real desires and needs. In this case, the consumer feels significant and increases the social status of the enterprise. Taking into consideration the modern concept of community development, the social status of the enterprise is very important, which can both contribute to the growth of sales and business activity of the enterprise, as well as to cause financial losses.

The Social Network to search and establish business contacts LinkedIn is an example of crowdsourcing. LinkedIn has registered more than 85 million users representing 150 branches from 200 countries, which provides the ability to draw the right specialists to discuss the problem.

Today, such a tool as crowdsourcing is actively used by a large number of companies, including Starbucks with its "My Starbucks Idea" project [18]. To improve performance, Howard Schultz approved the creation of this site, where users of Starbucks still have the opportunity to write their ideas for improving the activities of cafes in different directions. The best ideas come true.

The company Muji, which is known for creating interior items from high-tech materials using innovative technology, also uses actively the ideas of its customers. The management of Muji created a section on the company's official website, "Connect with Us and Kaizen", where any user of the site

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can offer ideas to improve the company's activities in different directions [19]. The most interesting technological ideas are sent to designers who implement them in the production process.

The Chicago T-shirt manufacturing company "Threadless" actively uses crowdsourcing as a tool for intellectual capital and profit growth. The process of designing the company's T-shirt design consists solely of conducting on-line contests: every week the company receives hundreds of ideas from amateurs and professional artists. "Threadless" publishes these pictures on its site, and each registered user can evaluate a particular T-shirt. Every week, production starts from four to six of the most popular designs, but only after a sufficiently large number of buyers make a pre-order so that they could avoid any loss. Winners receive \$ 2,000 each week and various prizes, but the real motivation is the desire to see their work launched in production. On the label of each "Threadless" T-shirt, the name of the developer is printed. For designers, this is creative advertising, for customers it is an additional choice. The company does not need to hire a design team, while investing money only in proven, pre-ordered designs, which is a significant reduction in risk.

The company "Procter & Gamble" on the site "InnoCentive" publishes issues that it cannot solve itself, offering big pecuniary reward for more than 160,000 people who are unofficial free employees of the company.

The transnational company producing computer software "Microsoft" uses the crowdsourcing method, involving users of its software to leave suggestions on improving the company's development on the corporate website, and it also conducts public opinion polls.

Crowdsourcing is actively used in educational programs. The company ABBYY, a well-known programmer for reading files in various formats, has created a project to translate the global course Coursera into Russian. Not only professional philologists work on the English translation, but also ordinary users who speak English well on a specially designed SmartCat cloud technology platform.

The world-wide TED conference, which is conducted with the help of volunteers, is also an example of using crowdsourcing.

Moreover, entire platforms are created for crowdsourcing. So, uTest is the world's largest test platform for testing software products. uTest offers a complete set of testing with the help of the community of more than 30,000 professional testers from more than 165 countries. This platform can be applied for testing web, mobile, gaming and work applications. The mission of the company is to provide software makers with the most cost-effective solution taking into account correlation of price and quality of solution that can be used anytime and anywhere.

Consequently, today there is a significant number of enterprises, platforms, which basing on methods of brainstorming and expert analysis increase intellectual capital, receiving ideas and suggestions from all interested persons.

The company Bayer, which introduced in 2009 in Ukraine "Grants4Targets™" program, is actively using crowdsourcing. Later, a number of other initiatives were initiated: "Grants4Apps™", "Grants4Indications™", "PartnerYourAntibodies™", "Grants4Tech™" and "Grants4Traits™". Having created conditions for innovation, Bayer offers grants to scientists from universities, academic research institutes, and start-up companies or IT developers for the medical industry from around the world with further support for individual projects. Participants can receive financial support and useful experience.

The company "VinnytsiaKartServis" has launched a competition for the creation of an electronic ticket, which is planned to be used in public transport in Vinnytsia. The main requirement of the design is that it should be associated with Vinnytsia. The winner will receive 5 thousand UAH.

Among the examples of social or public crowdsourcing in Ukraine, we can name a project such as "Make Ukraine Clean" (a public campaign to clean up its cities, which occurs every spring: everyone is registered on the site and chooses or creates their places for cleaning).

Crowdsourcing has gained a particular relevance against the background of an increase in volunteer activity and a variety of campaigns to raise humanitarian aid in Ukraine due to an armed conflict in the eastern part of the country. It was the Internet and social networks that became the main tool for finding resources and aid for the army, refugees, victims of hostilities.

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The example of crowdsourcing is the initiative of the Vinnytsia Charitable Fund “Podilskaya Hromada” where such social projects are carried out under conditions of crowdsourcing as an auction of projects, “Vinnitsa is my city”, “Yard Sport”, “Merry Doctor” and others [20]. The essence of these programs is to attract ideas on the improvement of the city in different directions, the implementation of social projects. At the same time, the best projects are realized at the expense of the Charitable Fund, or the winners of the best projects receive funding for these projects.

The mobile application OSBB.UA, which is designed for residents of multistory buildings, is an example of crowdsourcing. Immediately after registering their building at OSBB.UA, the residents receive tools that help save precious time and solve communication problems between apartment owners, the head of OSBB (association of residents of multistory buildings) and the management company.

Consequently, most domestic projects related to the use of crowdsourcing have a social orientation and are practically not used in the economic activities of enterprises.

**Conclusions.** Thus, today there is a significant number of enterprises, platforms, which basing on methods of brainstorming and expert analysis increase intellectual capital, obtaining ideas and offers from all interested persons.

The key advantage of crowdsourcing is that its use in companies makes it possible to use existing resources more efficiently than traditional enterprises.

It is expedient for domestic enterprises to use actively the opportunities of crowdsourcing to increase their intellectual capital. For this purpose, active communication with potential and actual consumers is needed through their own sites and through social networking pages.

Active involvement of students in the activities of the company, in particular as an intellectual asset, is quite promising for domestic enterprises.

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