CROWDSOURCING
FROM KNOWLEDGE MANAGEMENT PERSPECTIVE

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Abstract: Nowadays, there is a growing interest in crowdsourcing, which enables organizations to acquire knowledge located in communities. The purpose of this article is to characterize crowdsourcing from a knowledge management perspective and to indicate some solutions which can be adopted in organizations. The article uses the method of literature review**.**

Introduction

The concept of crowdsourcing is implemented in an increasing number of enterprises operating in Poland, expecting continuous improvement and use of knowledge in business practice. Creators are required to be creative, which should result from knowledge of contemporary management principles and the possibilities of using information technology tools in business and management (Jelonek, Turek 2015, p. 4). The purpose of the chapter is to characterize crowdsourcing from the point of view of knowledge management and implementation of solutions in organizations.

The role and importance of crowdsourcing

The concept of crowdsourcing is implemented in an increasing number of enterprises operating in Poland. Crowdsourcing means a venture in which an enterprise obtains a commodity or valuable data from a large group of people or companies whose identity is not important in the whole process. Crowdsourcing draws from global resources, most of which have never been used effectively, and individuals are rewarded for the quality of their ideas, regardless of origin, status, employment or education (Kowalska 2015, p. 163). Selected definitions of crowdsourcing are presented in *Table 1*.

Table 1. Selected definitions of crowdsourcing

Author/ authors	Definition
Kleeman et al.	A Form of integration of users or consumer in internal processes of value creation. The essence of crowdsourcing is an intended mobilization with allocation of commercial exploration of creative ideas and other forms of work performed by the consumer.
DiPalantino, Vojnovic	Methods using an open call to encourage communities to solve problems.
Burger-Helmchen, Penin	A way in which an organization gains access to external knowledge.
Brabham	A way of solving problems, as well as a model of production, in which, in order to achieve goals characteristic of an organization, collective intelligence of Internet communities is used.

Source: (Lenart-Gansiniec 2017a, pp. 25-34; Lenart-Gansiniec 2017b, pp. 43-60)

After the analysis of various definitions presented by many authors, the following definition of crowdsourcing is proposed: crowdsourcing is a way for an organization to engage, a non-specified, dispersed group of people to perform various tasks through an online platform (Lenart-Gansiniec 2017b, p. 43).

Crowdsourcing[1] is a venture in which an enterprise obtains a product or value from a large group of people or enterprises. Crowdsourcing uses global resources, and individuals reward them for the quality of their ideas, regardless of origin, status, employment or education (Kasprzycki-Rosikoń, Piątkowski 2013, p. 25). D.A. Grier, who emphasizes that although, in practice, cooperation with users takes place via the Internet, reaching people who will perform a specific task can also take place via other communication channels (Kowalska 2015, p. 163; Bubel, Łęgowik-Świącik, Kowalska 2017, p. 53).

Three basic streams of crowdsourcing can be distinguished (Erickson, Petrick, Trauth 2012, p. 25):

1. Simple crowdsourcing – focused on small tasks (simple, task-oriented crowdsourcing). It is a source of remote work for routine activities that do not require high qualifications: data entry, file segregation. From a business perspective, it means achieving economies of scale, reducing costs.
2. Complex crowdsourcing – based on experience (complex, experience-based crowdsourcing). It includes complex tasks requiring unique skills and competences.
3. Flexible crowdsourcing – generating ideas (open-ended, idea generating crowdsourcing). It focuses on creating ideas and product innovations.

The various types of crowdsourcing are presented in *Table 2*.

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[1] The idea of crowdsourcing appeared in the literature for the first time in 2006 in a book by J. Howe. *The Rise of Crowdsourcing*, Journal "Wired".

Table 2. Types of crowdsourcing

Crowdsourcing	Crowd intelligence
	Open innovation
	Citizensouring
	Mass collaboration
	Crowd tasks&creativity
	Customer co-creation
	Crowd causes
	Sharing economy
	Crowdcurrencies
	Crowdfunding
	Mass collaboration
	Online Communities
	Crowd Currencies
	Peer-to-Peer Lending

Source: (Kosinski et al. 2012; Erickson, Petrick, Trauth 2012)

Crowdsourcing categories include (Kasprzycki-Rosikoń 2015, p. 8-9):
1. Citizen Engagement – involving citizens or citizens to change, manage a city or a state.
2. Crowd Intelligence – collective community intelligence is based on cooperation, co-creation and involvement of users.
3. Open Innovation – using resources from outside the immediate environment of the company or organization to create innovative solutions (Krawczyk--Sokołowska, Łukomska-Szarek 2017, p. 56).
4. Mass Collaboration – independent cooperation of a large number of users on one project, often consisting of modules that can be combined.
5. Online Communities – online communities characterized by a high interaction rate. They share common ideas, beliefs, brands or interests.
6. Crowd Tasks & Creativity – projects aimed at performing tasks, providing services by the usual large and dispersed internet community.
7. Crowd Causes – individuals or charities supporting projects aimed at social welfare oriented at helping to address global or local problems, whose solution will significantly improve the existence of people.
8. Social Business – companies focused on authentic listening, sharing and engagement through open social channels.
9. Customer Co-creation – cooperation between the company and a group of consumers focused on developing a joint solution.
10. Sharing economy (with shared economy) – a concept based on the idea of shared economy, among others, Uber.
11. Non-Equity Based Crowdfunding – members of the community financially support a project or project in exchange for the possibility to use a service or a product.
12. Equity-Based Crowdfunding (community investing) – members of the community become shareholders of the they support financially.

13. Peer-to-Peer Lending / Commerce – social lending of money without the participation of a financial institution.
14. Crowd Currencies – alternative currency systems created by online communities.

The propagators of this phenomenon are convinced of its economic and social benefits, both for entities initiating crowdsourcing projects, members of the community participating in them, as well as operators of electronic platforms and suppliers of other services (Nowakowska-Grunt, Piersiala 2014, p. 145). The largest beneficiaries of crowdsourcing are clients of such ventures. From their point of view, crowdsourcing is underlined in terms of (Hossain, Kauranen 2015, p. 25):

- access to resources of human knowledge, competence and creativity outside the company/organization,
- acquiring new ideas, content, data and ways of solving problems with lower financial outlays and in a shorter time,
- creating access to global labor markets and cheap labor,
- better adaptation of the offer to the needs of consumers/users, which will increase productivity, sales, and the amount of revenue generated, as well as the competitiveness and innovativeness of the company/organization,
- extending the current activity and offer with proposals coming directly from interested recipients,
- creating a positive image of the company/institution as a modern, innovative entity open to the votes of its clients,
- refreshing and renewing the brand,
- creating and maintaining the community around the brand (social capital) and selecting from the crowd particularly active individuals who may act as brand ambassadors,
- acquiring additional financial resources (crowdsourcing),
- activation of internal employees,
- improving communication with the environment (marketing, advertising, public relations),
- conducting market research and predicting future trends and customer needs and their verification,
- reducing the limits resulting from intellectual property rights.

The evaluation of crowdsourcing seems to be of importance to organizations, especially public organizations (Frączkiewicz-Wronka 2013, p. 28).

Advantages and disadvantages of crowdsourcing and knowledge management

For many organizations, crowdsourcing offers some benefits and is an opportunity to achieve or increase the competitive advantage (Rouse 2010, p. 15). The benefits of crowdsourcing for community members participating in it include mostly its non-material aspects, such as: expressing one's creative potential, expanding knowledge and skills, meeting needs and internal motivations, shaping one's reputation and social status, and spending free time constructively.

It was only at a further point that the possibility of obtaining financial and material gratuities and the collection of funds was mentioned. Crowdsourcing

platforms, providers of electronic payment services, advertisers and technology solution providers, for whom crowdsourcing is primarily intended as a target because it involves the collection of subscription and commission fees set out in the regulations, are also among the crowdsourcing groups that benefit from crowdsourcing (Zhao, Zhu 2012, p. 417).

The basic advantages of crowdsourcing include (Grela 2014, p. 208; Mazurek 2015, p. 60):
- the possibility of obtaining a positive result cheaper than using other solutions,
- the opportunity to get a different perspective on the problem and use the creativity of a large group of people,
- no need for continuous supervision of the group performing the task,
- a very good marketing tool,
- the possibility of finding talented employees,
- the opportunity to strengthen the relationship between the organization and clients, and thus increase brand loyalty,
- the possibility of reducing the costs of the R & D department.

Despite numerous positive implications, it is worth remembering that this mechanism is not devoid of certain limitations, which can include (Grela 2014, p. 208-209):
- the ability to easily obtain information about the company from competitors,
- the possibility of some plagiarism by crowd members,
- the ability to discourage employees from operating efficiently,
- the possibility of achieving undesirable effects.

In connection with the above, companies planning to use crowdsourcing in the activities of their company should not make hasty decisions, but in a thoughtful manner plan the entire process carefully, while considering all key elements, including the risk incurred. The disadvantages of this solution include (Kowalska 2016, p. 169):
- difficulty in estimating project costs,
- lack of expected results due to mistakes made by the company (imprecise definition of the task, failure to disclose important information, errors in monitoring the community),
- insufficient competence of users (e.g. in the area of specialist knowledge, skills),
- the risk of losing internal know-how and control over the operation,
- low commitment resulting from the mismatch of incentives motivating the participants,
- discouraging company employees from operting effectively as a result of the involvement of the "crowd" as external specialists.

Creating a group of people ready to undertake specific activities is of key importance for the success of the crowdsourcing process. However, there are two main problems associated with this aspect. The first one concerns motivation – how to convince internet users to devote their time and share their resources. Crowdsourcing is also fostered by the increasing interest of people in social activities and undertaking activities that go beyond the private sphere.

The conditions of crowdsourcing

Crowdsourcing is currently one of the most popular strategies for acquiring original solutions and building relationships between organizations and their clients. The popularity of this formula offers many benefits for enterprises. It includes the possibility of getting quick and usually free or very cheap access to a variety of interests, inspiring ideas, building a community around the company/brand, gaining knowledge about the needs of consumers. Sharing knowledge multiplies solutions – the trick is how to get something out of this value of "surplus" ideas (Kowalska 2016, p. 35). The key ingredients of crowdsourcing are an organization that has a task to do, a community (crowd) that is ready to do this task voluntarily, an online environment that allows workplaces and communities to interact with the organization, mutual benefits for the organization and the community. Levels of crowdsourcing are presented in *Table 3*.

Table 3. Levels of crowdsourcing

Levels	Characteristic
Structural	– innovative strategy, consistency of vision and strategy with the aspirations of the crowd, properly shaped relations with external entities, organization's trust in virtual communities.
Social	– motivation of employees, – creativity proactive leadership, – openness of the organization to novelties and changes, – innovative culture, positive organizational climate.
Technological	– abilities to discover hidden knowledge using IT tools, – compatibility and functionality of the crowdsourcing platform.
Virtual community	– readiness to share knowledge, level of external and internal motivation, and inclination to trust.

Source: Based on (Buettner 2015)

The use of crowdsourcing includes the following processes (Slezkin 2015, p. 29):
– planning (identification of needs, selection of stakeholders, operation strategy),
– implementation (operation of persons, selection of a technological solution, defining legal issues, implementation of a communication plan),
– results analysis (data collection, reporting, qualitative and quantitative analysis, selection of the best solutions, transfer of copyright),
– maintenance (moderation, animation, copyright, identification of subsequent challenges).

Zhao and Zhu defined three perspectives of crowdsourcing measurement: the participant, the crowdsourcing platform, and the organization (Zhao, Zhu 2012, p. 418). The crowdsourcing communities have their dynamic development thanks

to the Internet technology and subsequent ideas of using universal access to the Internet. The ease of access to servers and the ability to easily create information systems that implement the functionality of crowdsourcing platforms are also of great importance. Contemporary IT tools allow reaching the right audience, for example, groups of Internet users (scientists, engineers, programmers, which in turn reduces the risk of project failure). In overcoming unfavorable aspects of crowdsourcing, it helps to identify well the community, but also to specify the problem to be solved correctly and legibly. The greatest certainty of obtaining the desired results of a crowdsourcing project is provided by defining exactly what is expected of the community.

The Deloitte report "Tech Trends 2014" presents examples of crowdsourcing platforms which can be used by organizations – from acquiring qualified project resources to companies, by creating market predictions, to designing products and services involving various communities ("Tech Trends 2014", p. 28). The high specialization of crowdsourcing platforms means that organizations do not have to develop such programs internally, but can benefit from specialized people or communities. There is a growing share of crowdsourcing in the activities of the largest global companies and public administration.

Conclusions

Crowdsourcing is a concept that aims to increase the competitiveness and flexibility of the organization. Increasing interest in crowdsourcing is gained by skilfully engaging, motivating, and managing the community in crowdsourcing projects. The methodology defines the elements of skilful engaging, motivating and rewarding participants and moderating the submitted content. These are soft skills, but decisive for the success of the project.

In engaging the community in crowdsourcing projects, there is much uncertainty. Despite planning the process in the finest details, we are not able to predict the result and thus end the process. As project administrators, we are responsible for creating the framework and principles, but at some point, it is important to trust the "crowd" intuition.

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CROWDSOURCING Z PERSPEKTYWY ZARZĄDZANIA WIEDZĄ

Streszczenie: Obecnie rośnie zainteresowanie crowdsourcingiem, co umożliwia zdobywanie wiedzy zlokalizowanej w społecznościach. Celem artykułu jest scharakteryzowanie crowdsourcingu z perspektywy zarządzania wiedzą i wskazanie rozwiązań we współczesnych organizacjach. Zaprezentowano wybrane rodzaje i klasyfikacje oraz rodzaje crowdsourcingu. W artykule wykorzystano metodę przeglądu literatury przedmiotu.

Słowa kluczowe: crowdsourcing, wiedza, zarządzanie wiedzą