CROWDSOURCING AND ORGANISATIONAL LEARNING – A SYSTEMATIC LITERATURE REVIEW

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ABSTRACT

The article focuses on the importance of crowdsourcing for organisational learning. The main aim, which is examining the significance of crowdsourcing for organisational learning, results from it. The article was prepared based on a systematic literature review. It enabled noticing that crowdsourcing may be a new form organisational learning that is alternative towards the traditional one. It should be emphasised that there is a lack of deep research in this scope, since a significant part of the deliberations is of a theoretical nature. One may therefore assume that future empirical studies in this scope may be intriguing in a cognitive aspect. Based on the results of the literature review, a diagram for research on the importance of crowdsourcing for organisational learning was proposed.

KEYWORDS: *crowdsourcing, organisational learning, systematic review literature.*

JEL CLASSIFICATION: *O31, D83.*

1. INTRODUCTION

Previous research on crowdsourcing focused mainly on the following: making use of community intelligence (Brabham, Sanchez, & Bartholomew, 2009; Chen, 2016), collaboration with the crowd (Oomen & Aroyo, 2011), conditions of accepting new knowledge (Seltzer & Mahmoudi, 2012), negative impact of crowdsourcing on implementation of ideas (Bayus, 2012), public organisations' potential to make use of crowd knowledge (Basto, Flavin & Patino, 2010), and motivation to make use of the crowd's knowledge (Dunn & Hedges, 2012; Budhathoki & Haythornthwaite, 2012), among others. Moreover, an attempt to join crowdsourcing with an organisation's openness to new external knowledge appeared (Chesbrough & Crowther, 2006; Chesbrough, 2010; Huston & Sakkab, 2006; Feller et al., 2012; Majchrzak & Malhotra, 2013). This, however, has not been sufficiently settled. It causes the need for conducting further, deepened research studies on the significance of crowdsourcing for organisational learning. It should be emphasised that in the literature, understanding the mechanism of the impact of crowdsourcing on organisational learning in public organisations has not been undertaken. In particular when seeking the importance of crowdsourcing for organisational learning is considered to be a "new, exciting direction of research" (Argote & Miron-Spektor, 2011; Feller et al., 2012; Majchrzak & Malhotra, 2013), which still remains in the sphere of theoretical considerations.

The main aim, which is examining the significance of crowdsourcing for organisational learning, results from it. A systematic literature review was applied in order to seek the importance of crowdsourcing for organisational learning. Publications from the period between 2006 and 2016 entered into full text English language databases selected in a purposeful way, were analysed. The article was divided into three parts. In the first one, the notion and essence of crowdsourcing were presented. Whereas, the second part presents the notion and essence of organisational learning. The

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last, third part, presents the results of the systematic literature review. It also includes proposals of future theoretical and empirical studies on the significance of crowdsourcing for organisational learning.

2. CROWDSOURCING

In the subject literature one may find various definitions of the notion of the term crowdsourcing, demonstrating the complexity and ambiguity of this aspect's encompassing. The various meanings of the term crowdsourcing are a result of the level of conducted deliberations (macro-, mezzo-, and micro-), assumptions made by each researcher, and making use of synonyms to define the notion itself (open innovation, open sources, partner production).

The term crowdsourcing appeared in literature for the first time in 2006, owing to J. Howe. He defined crowdsourcing as "the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined (and generally large) network of people in the form of an open call. This can take the form of peer-production (when the job is performed collaboratively), but is also often undertaken by sole individuals" (Howe, 2006). With time, the author expanded this definition with using the rules of an open source, not only in the scope of software, but also ordering tasks to the crowd, matching talent and knowledge of the crowd to the needs of an organisation (Howe, 2008). According to this approach crowdsourcing is a blend of the following words: outsourcing, crowd, and sourcing (Rouse, 2010). The principal building material of crowdsourcing is crowd wisdom (Surowiecki, 2004) and making use of ideas, resources, and competencies of people who are interested in solving problems or creating new products (Burger-Helmchen & Penin, 2010; Jain, 2010). He acknowledges that a group is able to achieve and gain more benefits than any expert (Jeppesen & Lakhani, 2010; Leimeister, 2010).

Crowdsourcing is referred to in the literature as an organisational business process. Therefore, there are a number of actions that make it up. The typology that is referred to the most in the subject literature is the one introduced by Marjanovic et al., (2012). One may distinguish here: input, process, output, and outcome. A distinguishing feature for these actions is the level of interaction with the crowd. In input the problem is defined, the platform is advertised, calling forth and identifying potential suppliers of ideas or knowledge. The significance of this stage is emphasized here due to the fact that appropriate members of the crowd are selected as well as choosing incentives and motivators (Sloane, 2011). At this stage there a division of tasks into smaller elements also takes place. In the process there is organising, managing, coordination of actions, and focusing on building a crowd community, encouraging them to share knowledge and skills (Saxton & Kishore, 2013; Brabham, 2013). Therefore, all of the actions should be oriented on building dependency and relations between the organisation and the crowd, which, as the authors point out, have impact on ensuring bilateral benefits (Saxton & Kishore, 2013). Therefore, constant monitoring and evoking the crowd to be active are indicated (Marjanovic et al., 2012). In the action of the "output" members of the crown transfer ready-to-use solutions to the problem. Whereas, in the action of the "outcome" bilateral benefits are generated: both for the organisation and members of the crowd (Zwass, 2010). The main assumption here is the so-called value of co-creation – measured as the level of contribution and quality of involvement.

Other authors (Muhdi et al., 2011) point out to the following stages: deliberation (getting the organisation interested, establishing internal procedures, promoting platforms), preparation (establishing the expectations of the organisation, formulating tasks, planning internal resources), execution (grouping of the obtained ideas, monitoring progress, communication with the crowd), assessment (evaluation and selection and awarding the best ideas) post-processing (interpretation, preparing for implementation, realizing selected ideas). The authors underline that knowledge of processes and actions included in them may contribute to a success of crowdsourcing actions and obtaining benefits from them.

Crowdsourcing also contributes to solving problems, creating innovations, optimising the costs of an organisation's activity or it is considered as a tool related to marketing and collaboration with the customer. Crowdsourcing may constitute the source of competitive advantage (Leimeister & Zogaj, 2013). The possibilities of using crowdsourcing to improve business processes are emphasised (Burger-Helmchen & Penin, 2010; Brabham, 2008). Taking into account its potential, it enables access to knowledge resources and creativity and facilitates acquiring new contents and data (Kowalska, 2015).

3. ORGANISATIONAL LEARNING

There are many definitions of organisational learning in the literature. The variety and ambiguity of the definitions and perspectives require arranging the issues and adopting a specific direction, owing to which it will be possible to conduct further literature and empirical research. Organisational learning may be defined as a process of detecting and correcting mistakes, when one considers mistakes as the divergence between the effect of action and expectations (Argyris, 1989). According to Fiol & Lyles (1985) organisational learning is a process of enriching action by knowledge and understanding. In turn, Levitt & March (1988) consider that it is implementing of lessons coming from the past into routines, which direct its behaviour. Stata (1989) considers that these are common brainwaves, knowledge and cognitive models, which come into being based upon previous knowledge and experience. Huber (1991) states that organisational learning arises when as a result of information processing the scope of its potential behaviours expands.

In the selected definitions the aspect of the process is emphasised many times. The organisational learning process means its understanding and giving by the workers of a sense to their own experiences. This has an impact on formulating a general strategy of an organisation and knowledge strategy (Cook & Yanow, 1996). Owing to them the organisation possesses procedures and rules that enable it automatic reactions in the event of divergence from existing norms and rules. The processes of organisational learning are of a multi direction and cyclic nature. They are shaped in a purposeful and conscious way. They are supposed to lead to detecting and correcting mistakes. They are realised based on personalised knowledge that is located in the minds of workers and their individual and team learning (Morrison & Mezentseff, 1997).

One may come across various approaches to organisational learning processes. As it is a dynamic process − in the article I referred to the concept of Crossan et al. (1999). Therefore, three levels are distinguished here: individual (intuition), group (interpretation, integration) and organisational (institutionalisation).

3. CROWDSOURCING AND ORGANISATIONAL LEARNING – RESEARCH PROPOSAL

Creating and expanding of new knowledge requires knowing its present state and identifying recommendations for further research. It has become a premise for conducting of a systematic literature review by the author. It is an objective and synthetic tool, which is subjected to selection and critical evaluation of the current research studies (Rowley & Slack, 2004). It also enables identification and synthesis of the results of all principal research studies and theoretical approaches, which in turn enables indicating the existing cognitive and research gaps (Levy & Ellis, 2006; Sekaran & Bougie, 2010). According to his methodology (Czakon, 2011) the whole procedure includes three stages: (1) isolating the databases and a set of publications, (2) selection of publications, database development, (3) bibliometric analysis, contents analysis, and verification of the usefulness of the obtained results for future research.

The first stage of the systematic literature review started with gathering and choosing of the literature. Gathering of the set of publications consisted in making a choice of the databases, which in turn will be

subjected to an analysis. To this aim, those databases, which are the biggest and cover most magazines on strategic management ego, i.e. Proquest, Elsevier, Emerald, Scopus, and ISI Web of Science were taken into consideration. The initial analysis was begun with a review of accessible articles on the website http://knowledge.sagepub.com. It is a full text database of scientific magazines of the SAGE publishing house. This database was chosen purposefully considering the fact that it is a full text and multi-area database and it gathers complete texts of articles from scientific magazines on economic sciences. In addition, a review of articles presented during the international conference "20th International Research Society on Public Management Conference 2016 Hong Kong (IRSPM)" - of which the author was a participant, was carried out . As a result of searching through the selected databases over 33,000 publications were obtained. The main criterion was the word "crowdsourcing" in the publication's title.

In the second stage the following three limitations were imposed on the identified articles: (1) full text, reviewed publications, (2) "crowdsourcing" in the title, abstract, and key words, and (3) management sciences' area. Those publications, which did not strictly concern crowdsourcing, but rather treated it as a secondary subject, were rejected. Only those publications, which leading object of analyses was the term crowdsourcing placed in the title or key words were deemed significant research wise. Publications in the scope of information science, social, technical, mathematical, medical sciences, and humanities were excluded from the set. Publications that double, books, dissertations, and chapters in books were eliminated. Reviewed articles and published in full in magazines were included. The database obtained in this way, numbering 30 publications, was subjected to further analysis in the subsequent stages (Table 1).

Table 1. The process of building basic literature

Criteria	Databases				
	Proquest	Elsevier	Emerald	Scopus	ISI Web of Science
"Crowdsourcing" in the title	22,723	4,476	328	4,854	810
Area of sciences on management	17	19	34	30	5
Reviewed articles in full version	16	16	13	20	5
Following removal of publications that double	19				
Articles from	9				
Articles from IRSPM 2016	2				
Total: number of publications qualified for contents analysis	**30**				

Source: own elaboration. As for: 24.04.2016.

In the third stage, the collected literature basis, containing 30 publications, underwent a deepened contents analysis. This stage will constitute the basis for evaluating publications published so far, identifying research and cognitive gaps, valuable and cognitive areas of further scientific exploration, significant for the theory of management and justification of the need for taking on further research. Taking into account the importance of this stage, the theoretical considerations and previous empirical studies were evaluated from the point of view of quality, adequacy, and research perspectives.

Within the methodology of the systematic literature review an analysis of the number of publications on crowdsourcing (Figure 1) and an analysis of the number of publications qualified for contents analysis were carried out.
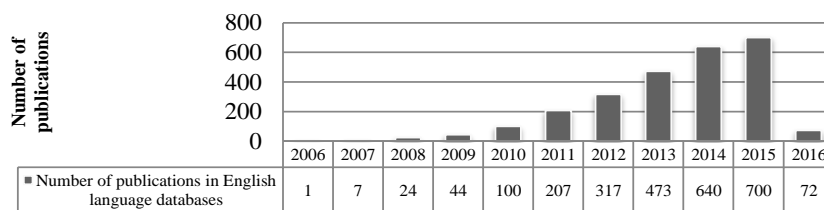
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
■ Number of publications in English language databases	1	7	24	44	100	207	317	473	640	700	72

Figure 1. Analysis of the number of publications on crowdsourcing
Source: own elaboration. As for: 24.04.2016

The conducted analysis of the number of publications on crowdsourcing enables stating that this issue enjoys interest among researchers. The trend value of publications found in English language databases equal to $R^2=0.668$ proves a growing tendency of publications. Similarly, the problem of crowdsourcing in the context of public organisations enjoys a growing interest among researchers. Such conclusions enable stating the validity of considerations on crowdsourcing in public organisations. Thereby, the research fields become more and more popular in scientific literature. The first publications in the field of social studies were published only seven years ago – in 2009. In addition, the value of the trend of publications fund in English databases, equal to $R2=0.555$ proves the growing tendency of the publications (Figure 2). It should be emphasized that the number of publications in 2014 and 2015 was higher than the one shown in the graph. Some publications were excluded taking into consideration the limited access to full text versions due to license issues. Based on the above, the author draws the conclusion about a current, although young, present research area.
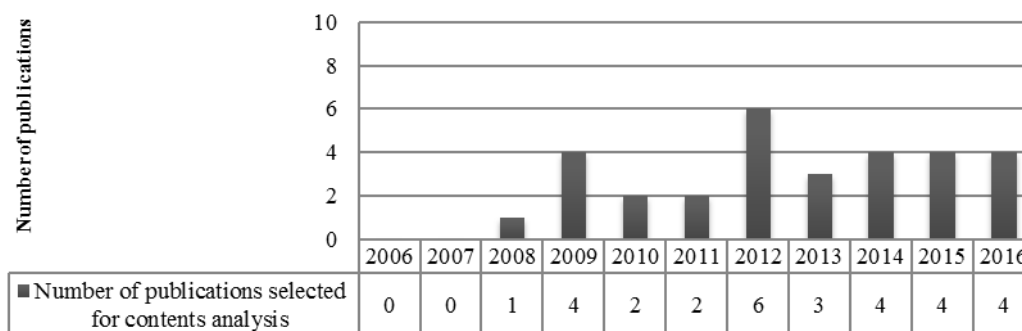
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
■ Number of publications selected for contents analysis	0	0	1	4	2	2	6	3	4	4	4

Figure 2. Number of publications selected for contents analysis
Source: own elaboration. As for: 24.04.2016

The collected literature database underwent in-depth analysis of content. During the content analysis the main directions of the research area development as well as the directions of studies on crowdsourcing recommended by other researchers were identified: (1) Organisational learning in the context of crowdsourcing and knowledge, which is located in virtual communities may constitute a new direction of research (Argote & Miron-Spektor, 2011; Feller et al., 2012; Majchrzak & Malhotra, 2013). (2) Ways of involving the crowd (Cullina et al., 2015). (3) Benefits

for the crowd and organisation (Oomen & Aroyo, 2011). (4) Readiness of the organisation for crowdsourcing (Minner et al., 2015). (5) Communication on the orgsanisation-virtual community line (Agapie et al., 2015). (6) Workers' role in crowdsourcing: new solutions will not be accepted if the workers do not see the benefits (Erickson et al., 2012; Louis, 2013).

Content analysis towards the state of theoretical and empirical knowledge of crowdsourcing and organisational learning in the perspective of public organizations showed that the these problems remain in the sphere of theoretical deliberations. The first attempts to match crowdsourcing and organisational learning appeared not long ago – in 2011 (Argoten & Miron-Spektor, 2011). The existing research on crowdsourcing focused around, among others: making use of the community's intelligence (Chen, 2016), collaboration with the crowd (Oomen & Aroyo, 2011), potential of the organisation to make use of the crowd's knowledge (Basto et al., 2010). Moreover, an attempt appeared to combine crowdsourcing and the organisation's openness to new external knowledge (Chesbrough & Crowther, 2006). What is important is that crowdsourcing may constitute a model of intercepting values (Afuah et al., 2013; Lepak et al., 2007), a means for an organisation's learning (Tapscott & Williams, 2006; Leimeister, Huber, Bretschneider & Krcmar, 2009; Gallaugher & Ransbotham, 2010).

In the literature, no attempts were made to understand the mechanisms of crowdsourcing's impact on organisational learning in public organisations. Nonetheless, there is a statement saying that it is a new direction of research (Feller et al., 2012; Majchrzak & Malhotra, 2013), since organisational learning, using crowdsourcing, may constitute a supplement to the traditional one (Feller et. al., 2012; Majchrzak & Malhotra, 2013). It is also referred to as ambient organisational learning (Bjørn-Andersen, 2007; Bjørn-Andersen & Raymond, 2014). In addition, one emphasises the importance of seeking the answer to the question: How may an organisation use crowdsourcing for organisational learning? (Flyvbjerg, 2004; Yin, 2013).

According to Albors et al. (2008) crowdsourcing, and particularly building relations and collaborating with the virtual community enables a diffusion of learning and access to knowledge. Crowdsourcing is referred to as a new component of knowledge by the authors.

Some authors, as for example Deng & Chandler (2010), state that crowdsourcing, particularly specialisation and diversification of tasks – have positive impact on the workers' learning. The researchers Yu et al. (2009) have a similar opinion and say that the crowd's involvement is positively connected with the development of self-assessment and individual learning. Therefore, not only the organisation learns, but the involved crowd learns as well.

Jeppesen & Lakhani (2010), based on a literature review, pointed out that crowdsourcing may be a source of building an organisation that is based on knowledge. The authors also focused on seeking mechanisms of the effectiveness of acquiring knowledge from the surroundings. In their opinion, such knowledge may contribute to solving internal problems of an organisation.

Fang, Yin & Tao (2014), through modelling, suggested that crowdsourcing contributes to the so-called active learning. It is connected with group work techniques, arousing activity, creativity, and motivation of an organisation's workers.

It appears from research by Schlagwein and Bjørn-Andersen (2014) that crowdsourcing is a new contribution and mechanism of organisational learning. The authors, based on a case study of LEGO, deemed crowdsourcing as a new mode of learning that would enable sustaining incumbent status. In particular, in their opinion, it concerns large organisations active in mature lines of trade.

According to Zuchowski (2016) it is"internal crowdsourcing", through involvement and experience of the employees may contribute to organisational learning. Such a form of crowdsourcing is a specific form of organisational learning. The author conducted research in this direction and 41 interviews in a large international company employing over 100 thousand employees, in the automotive supplier trade in the functional area of logistics. He used the processes of organisational learning by Argyris and Schön (1978), i.e. single-loop learning, double-loop learning, and deutero-learning.

Other authors combine crowdsourcing with absorptive capacity (King & Lakhani, 2011; Spithoven, Clarysse, & Knockaert, 2011; Vanhaverbeke Van de Vrande & Cloodt, 2008) since crowdsourcing contributes to increasing the potential to identify, assimilate, internalise, and use knowledge.

The presented crowdsourcing and organisational learning processes and the results of a systematic literature review enabled risking a statement that crowdsourcing contributes to organisational learning (Table 1). Thereby, the author proposed a diagram of the impact of crowdsourcing processes on organisational leaning.

Table 1. Diagram for studying the importance of crowdsourcing for organizational learning

Crowdsourcing processes	Organisational learning processes			
	Intuition	Interpretation	Integration	Institutionalisation
Deliberation				
Preparation				
Execution				
Assessment				
Post-processing				

Source: own work

The diagram proposed by the author may be used to develop a model of the impact of these two notions, measurement tools, and further on to conduct research.

The developed scheme constitutes an original proposal, which may be a starting point for specifying the importance of crowdsourcing for organisational learning. It was based on two concepts: (1) organisational learning as a dynamic process developed by Crossana et al. (1999); (2) process approach to crowdsourcing developed by Muhdi et al. (2011). Thereby, in the author's opinion one should note the crowdsourcing and organisational learning processes since they set the research space for analysing their mutual relations. They also condition the acquisition of knowledge, which is present in the crowd and organisational learning. Moreover, the accepted processes of organisational learning are of a multi-directional and cyclic nature. They are shaped in a purposeful, planned, and conscious way. This also concerns crowdsourcing course. Therefore, it is assumed that each crowdsourcing phase should be positively linked to organisational learning. However, it should be emphasised that the proposed scheme has not been verified empirically. Thus, it is difficult to indicate its barriers and limitations.

In the original scheme it was assumed that organisational learning is a phenomenon composed of three levels of analysis: (1) level of an individual, group, (2) organisation, and (3) learning micro-processes, which occur at each level. Among these levels we can distinguish the following: intuition, interpreting, integrating, and institutionalising. Intuition is connected with subconscious acceptance and conviction of the correctness of the new knowledge without its prior analysis. It is accepting something new and including it in one's own experience. Interpretation, on the other hand, occurs on an individual and group level. It is"the explaining through words and/or actions, of an insight or idea to one's self and to others. This process goes from the pre-verbal to the verbal, resulting in the development of language" (Crossan et al., 1999). What follows then is sharing and transferring of knowledge. Integrating is understanding between people, dialogue, initiating common actions and organisation members' adapting to the whole group. The last level, institutionalising means routine action, and further embedment of learning, which includes the organisation's systems, structures, procedures, and strategies. Thereby, relations and tensions occur between each level, which takes on the form of knowledge exploration and exploitation. The exploration process concerns new ideas and actions that come from the individual through the team

to the organisation level. The exploitation process concerns the reversion of new ideas from the organisation level to the team and individual levels. This refers to the ascertainment which says that as a result of organisational learning a change of behaviour of the whole organisation should take place. Therefore, the processes of organisational learning constitute the basis for an organisation's development and they contribute to achieving the goals assumed by it. In such approach launching of organisational learning processes and sub processes takes place under the influence of pressure and requirements of the environment. Then the organisation has to adapt to it, solve problems and pick up the signals coming from the stakeholders. Thus, not only does a learning process occur, but also a change of the way of thinking and acting by the organisation's members. The attitudes of the workers and their tendency to assimilate new knowledge and its internalisation are of great importance here. Organisational learning occurs on all levels of the organisation.

In case of crowdsourcing processes – one should emphasise that it is stressed in the literature that it is necessary to conduct research on crowdsourcing simultaneously, i.e. taking into account three levels: organisational, virtual community, and individual. These indications were included in the original scheme. According to the concept of Muhdi et al. (2011), one assumes that crowdsourcing consists of four processes: deliberation, preparation, execution, and post-processing. Deliberation is above all preparation of the organisation for crowdsourcing: evaluation of the benefits, risk, precise course, choice of a crowdsourcing platform, reflection on the costs, knowledge to be acquired, and indication of problems, which the crowd should solve. Preparation constitutes further explanation of the organisation's expectations toward crowdsourcing projects, formulation of questions directed to the crowd, and their placement on a crowdsourcing platform. It is also planning of internal resources – duties are assigned to the workers. Therefore, the workers' motivation to acquire, share, and make use of knowledge coming from the crown is important. In the next process, execution – the virtual community proposes their ideas; next grouping of the received ideas by the organisation takes place. While the ideas are generated, the organisation may communicate with a selected virtual community. Assessment covers evaluation of the proposed ideas, while the best ones are awarded. Usually, the ones that are chosen are those that are consistent with the organisation's strategy. At the last stage, post-processing – interpretation, preparation for implementation, and realising of the selected ideas occurs. What is important here is their integration with the knowledge possessed by the organisation.

In the proposed original scheme what is emphasised is the necessity to verify the correlation between each crowdsourcing and organisational learning process. It is assumed that both crowdsourcing and organisational learning occur at the same levels. The importance of all crowdsourcing processes for effective organisational learning is emphasized here.

4. CONCLUSIONS

It should be emphasised that organisational learning becomes a characteristic requirement for organisations. Owing to this organisations not only improve their organisational processes, but they also build competitive advantage. And this requires access to various sources of knowledge. Crowdsourcing is used for creating innovations and it also enables access to external resources and acquiring new contents and data. It is emphasised in the literature that it may be a new effective and alternative way of organisational learning. Nonetheless, this ascertainment remains in the sphere of theoretical deliberations.

It should be emphasised that it is necessary to conduct research on the importance of crowdsourcing for organisational learning. It results from crowdsourcing's potential combined with access to knowledge possessed by virtual communities. In the author's opinion analysing the impact of crowdsourcing on organisational learning in a process aspect may constitute a potential direction, intriguing in a cognitive sense, for further evaluative scientific exploration, whereas the diagram proposed in the article, may be an introduction or a starting point for understanding the dependencies between these two notions.

REFERENCES

Afuah, A. & Tucci, C. L. (2013). Value capture and crowdsourcing. *Academy of Management Review*, *38*(3).

Agapie, E., Teevan, J. & Monroy-Hernández, A. (2015). Crowdsourcing in the Field: A Case Study Using Local Crowds for Event Reporting, Human Computation (HCOMP), AAAI - Association for the Advancement of Artificial Intelligence.00

Albors, J., Ramos, J. & Hervas, J. (2008). New learning network paradigms: Communities of objectives, crowdsourcing, wikis and open source. *International Journal of Information Management*, *28*(3).

Argyris, C. (1989). Strategy implementation: An experience in learning. *Organizational Dynamics*, *18*.

Argyris, C. & Schon, D.A. (2011). *Organizational Learning II: Theory, Method and Practice*. Prentice Hall, 1995.

Argote, L. & Miron-Spektor, E. (2011). Organizational learning: From experience to knowledge, *Organization Science*, *22* (5).

Bayus, B. L. (2012). *Crowdsourcing New Product Ideas Over Time: An Analysis of Dell's Ideastorm Community*. UNC Kenan-Flagler Research Paper 5.

Basto, D., Flavin, T. & Patino, C. (2010). *Crowdsourcing Public Policy Innovation*. Working Paper, Heinz College Carnegie Mellon University.

Bjørn-Andersen, N. (2007). *The never-ending story of IT impact on the organization: The case of the ambient organization*. Proceedings of the 30th Information Systems Research Conference in Scandinavia.

Bjørn-Andersen, N. & Raymond, B. (2014). The impact of IT over five decades: Towards the ambient organization. *Applied Ergonomics*, *45*(2).

Brabham, D. C. (2008). Crowdsourcing as a Model for Problem Solving: An Introduction and Cases, Convergence. *The International Journal of Research into New Media Technologies*, *14*(1).

Brabham, D. C. (2015). *Crowdsourcing in the Public Sector*, Georgetown University Press.

Brabham, D. C., Sanchez, T. W. & Bartholomew, K. (2009). *Crowdsourcing public participation in transit planning: preliminary results from the next stop design case*, TRB 89th Annual Meeting Compendium.

Budhathoki, N. R. & Haythornthwaite, C. (2012). Motivation for Open Collaboration: Crowd and Community Models and the Case of OpenStreetMap. *American Behavioral Scientist*, *57*(5).

Burger-Helmchen, T. & Penin, J. (2010). *The limits of crowdsourcing inventive activities: What do transaction cost theory and the evolutionary theories of the firm teach us?*, Workshop on Open Source Innovation, Strasbourg: FranceChen, 2016.

Chesbrough, H. W. (2010). *Business model innovation: opportunities and barriers*, Long Range Planning, *43*.

Chesbrough, H. W. & Crowther, A. K. (2006). Beyond high tech: early adopters of open innovation in other industries. *R&D Management*, *36*(3).

Cook, S. D. & Yanow, D. (1996). Culture and Organizational Learning. In M. D. Cohen & L. S. Sproull (Eds.), *Organizational Learning* (pp. 430-459). Thousand Oaks, CA: Sage

Cullina, E., Conboy, K. & Morgan, L. (2015). *Measuring the Crowd – A Preliminary Taxonomy of Crowdsourcing Metric*s. Proceedings of the 11th International Symposium on Open Collaboration.

Crossan, M. M., Lane, H. W. & White, R. E. (1999). An organizational learning framework: From intuition to institution. *Academy of Management Review*, *24*(3).

Czakon, W. (2011). Metodyka systematycznego przeglądu literatury. *Przegląd Organizacji*, nr 3.

Deng, X. & Chandler, J. (2010). *Learning in Enterprise System Support: Specialization, Task Type and Network Characteristics*. Proceedings of 2010 International Conferences on Information Systems (ICIS), December 2010, Saint Louis, Missouri, USA.

Dunn, S. & Hedges, M. (2012). *Crowd-Sourcing Scoping Study: Engaging the Crowd with Humanities Research*. London: Centre for e-Research, Department of Digital Humanities, King's College London.

Erickson, L. B., Trauth, E. M. & Petrick, I., (2012). Getting inside your employee's heads: navigating barriers to internal-crowdsourcing for product and service innovation. *33 International Conference on Information System*, Orlando.

Fang, M., Yin, J. & Tao, D. (2014). Active Learning for Crowdsourcing Using Knowledge Transfer. *AAAI Conference on Artificial Intelligence*, North America.

Feller, J., Finnegan, P., Hayes, J. & O'Reilly, P. (2012). Orchestrating" sustainable crowdsourcing: A characterization of solver brokerages. *Journal of Strategic Information Systems*, *21*(3).

Fiol, C. M. & Lyles, M. A. (1985). Organizational Learning. *Academy of Management Review*, *10*(4).

Flyvbjerg, B. (2004). *Five misunderstandings about case-study research*. In C. Seale, G. Gobo, J. F. Gubrium, D. Silverman (Eds.), Qualitative research practice. Thousand Oaks, CA: Sage

Gallaugher, J. & Ransbotham, S. (2010). Social media and customer dialog management at Starbucks. *MIS Quarterly Executive*, *9*(4).

Huber, G. P. (1991). Organizational learning: The contributing processes and the literatures. *Organization Science*, nr 2.

Howe, J. (2006). The rise of crowdsourcing. *Wired Magazine*, *14*(6).

Howe, J. (2008). *Crowdsourcing: Why the Power of the Crowd Is Driving the Future of Business*. New York, NY, USA: Crown Publishing Group.

Huston, L. & Sakkab, N. (2006). Connect and develop: Inside Procter & Gamble's new model for Innovation. *Harvard Business Review*, *84*(3).

Jain, R. (2010). *Investigation of Governance Mechanisms for Crowdsourcing Initiatives*. AMCIS 2010 Proceed.

Jeppesen, L.B. & Lakhani K.R. (2010). Marginality and problem- solving effectiveness in broadcast search. *Organization Science*, *21*(5).

King, A. A. & Lakhani K.R. (2011). The contingent effect of absorptive capacity: an open innovation analysis. *Harvard Business School Working Paper Series*, *21*.

Kowalska, M. (2015). *Crowdsourcing internetowy – pozytywny wymiar partycypacji społecznej. Konteksty-istota-uwarunkowania*. Warszawa: Wydawnictwo Stowarzyszenie Bibliotekarzy Polskich.

Leimeister, J. M., Huber, M., Bretschneider, U. & Krcmar, H. (2009). Leveraging Crowdsourcing: Activation-Supporting components for IT-based ideas competition. *Journal of Management Information Systems*. *26*.

Leimeister, J. M. (2012). Crowdsourcing: Crowdfunding, Crowdvoting, Crowdcreation. *Zeitschrift für Controlling und Management*, 56.

Leimeister, J. M. & Zogaj S. (2013). Neue Arbeitsorganisation durch Crowdsourcing. *Hans-Böckler-Stiftung Arbeitspapier Arbeit und Soziales*, *287*.

Lepak, D. P., Smith, K. G. & Taylor, M. S. (2007). Value creation and value capture: a multilevel perspective. *Academy of Management Review*, *32* (1).

Levitt, B. & March, J. G. (1988). Organizational learning. *Annual Review of Sociology*, *14*.

Levy, Y. & Ellis, T. J. (2006). A systems approach to conduct an effective literature review in support of information systems research. *Informing Science Journal*, *9*.

Louis, C. A. (2013). *Organizational perspectives of open innovation in government*. iConference Proceedings.

Majchrzak, A. & Malhotra, A. (2013). Towards an Information Systems Perspective and Research Agenda on Crowdsourcing for Innovation. *The Journal of Strategic Information Systems*, *22* (4).

Marjanovic, S., Fry, C. & Chataway, J. (2012). Crowdsourcing based business models: in search of evidence for innovation 2.0. *Science and Public Policy*, *39* (3).

Minner, J., Holleran, M., Roberts, A., Conrad, J. (2015). Capturing volunteered historical information: Lessons from development of a local government crowdsourcing tool. *International Journal of E-Planning*, *4*(1).

Morrison, M., Mezentseff, L. (1997). Learning alliances: A new dimension of strategic alliances. *Management Decision*, *35*(5).

Muhdi, L., Daiber, M., Friesike, S. & Boutellier, R. (2011). The crowdsourcing process: an intermediary mediated idea generation approach in the early phase of innovation. *International Journal of Entrepreneurship and Innovation Management*, *14*(4).

Oomen, J. & Aroyo, L. (2011). *Crowdsourcing in the Cultural Heritage Domain: Opportunities and Challenges*. Proceedings C&T 11.

Rouse, A. C. (2010). *A preliminary taxonomy of crowdsourcing*. 21st Australasian Conference on Information Systems.

Rowley, J., & Slack, F. (2004). Conducting a literature review. *Management Research News*, *27*(6).

Saxton, G. D., Oh, O. & Kishore, R. (2013). Rules of Crowdsourcing: Models, Issues, and Systems of Control. *Information Systems Management*, *30*(1).

Schlagwein, D. & Bjørn-Andersen, N. (2014). Organizational Learning With Crowdsourcing: The Revelatory Case of LEGO. *Journal of the Association for Information Systems*, *15*(11).

Sekaran, U. & Bougie, R. (2010). *Research methods for business: A skill building approach*. Chichester: John Willey & Sons Ltd.

Seltzer, E. & Mahmoudi, D. (2012). Citizen Participation, Open Innovation, and Crowdsourcing: Challenges and Opportunities for Planning. *Journal of Planning Literature*, *28*(1).

Sloane, P. (2011). *A Guide to Open Innovation and Crowdsourcing: Advice from Leading Experts*. UK: Kogan Page Publishers.

Spithoven, A., Clarysse, B. & Knockaert, M. (2011). Building absorptive capacity to organise inbound open innovation in traditional industries. *Technovation*, *31*, (1).

Stata, R. (1989). Organizational Learning - The Key to Managment Innovation. *Sloan Management Review*, (63).

Surowiecki, J. (2005). *The wisdom of crowds*. Anchor Books.

Tapscott, D., & Williams, A. (2006). Wikinomics: How mass collaboration changes everything. New York: Portfolio.

Vanhaverbeke, W., Cloodt, M. & Van de Vrande, V. (2008). *Connecting absorptive capacity and open innovation*. Proceedings of The XX ISPIM Conference Huizingh K.R.E., Conn S., Torkkeli M., & Bitran I. (eds), Proceedings of The R&D Management, Conference 2009 Butler, J. (ed.) Vienna, 21-24 June 2009.

Yu A. Y., Chang, P.-L., Yao, S.-H. & Liu, S.-J. (2009). *KVAM: Model for measuring knowledge management performance of engineering community of practice*, Construction Management & Economics, *27*(8).

Zuchowski, O. (2016). *Learning with the crowd: a field study of internat crowdsourcing as a form of organizational learning*. Twenty-Fourth European Conference on Information System (ECIS).

Zwass, V. (2010). Co-Creation: Toward a Taxonomy and an Integrated Research Perspective. *International Journal of Electronic Commerce*, *15*(1).