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Crowdsourcing - a New Paradigm of Organisational Learning of Public Organisation

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Abstract: Crowdsourcing is one of the new themes that has appeared in the last decade. Considering its potential, more and more organisations reach for it. It is perceived as an innovative method that can be used for problem solving, improving business processes, creating open innovations, building a competitive advantage, and increasing transparency and openness of the organisation. Crowdsourcing is also conceptualised as a source of a knowledge-based organisation. The importance of crowdsourcing for organisational learning is seen as one of the key themes in the latest literature in the field of crowdsourcing. Since 2008, there has been an increase in the interest of public organisations in crowdsourcing and including it in their activities. This article is a response to the recommendations in the subject literature, which states that crowdsourcing in public organisations is a new and exciting research area. The aim of the article is to present a new paradigm that combines crowdsourcing levels with the levels of learning. The research methodology is based on an analysis of the subject literature and exemplifications of organisations which introduce crowdsourcing. This article presents a cross-sectional study of four Polish municipal offices that use four types of crowdsourcing, according to the division by J. Howe: collective intelligence, crowd creation, crowd voting, and crowdfunding. Semi-structured interviews were conducted with the management personnel of those municipal offices. The research results show that knowledge acquired from the virtual communities allows the public organisation to anticipate changes, expectations, and needs of citizens and to adapt to them. It can therefore be considered that crowdsourcing is a new and rapidly developing organisational learning paradigm.

Keywords: crowdsourcing; organisational learning; paradigm; organisational learning paradigm

1. Introduction

Crowdsourcing is one of the new themes that has appeared in the last decade. It can be said that it has been strengthening its position in management sciences, additionally in business practice it has become a megatrend that drives innovation, cooperation in the field of research, business, or society. More and more organisations, including public ones, reach for it, due to its potential [28] in the field of: innovative problem solving [2], improvement of business processes [37], creation of open innovations [14], building a competitive advantage, participatory management, increasing transparency and openness of public organisations [10].

The importance of crowdsourcing for organisational learning is seen as one of the key themes in the latest literature in the field of crowdsourcing [5, 22, 31, 38]. Crowdsourcing is no longer just a paradigm of online problem solving, open design, computer networks, knowledge management [16], and participation. However, in the context of public organisations crowdsourcing is perceived mainly as a way to generate information, co-produce services, create new solutions and public policies [35]. This means that public organisations, by means of using crowdsourcing, obtain information from

citizens to improve public services and their shaping [21]. The issue of organisational learning using crowdsourcing is overlooked.

Various types of crowdsourcing have been identified in the literature [24]. Until now, scientists focused primarily on collective intelligence and crowd voting [25]. However, illustrative cases of crowdsourcing suggest that the use of different types of crowdsourcing may be useful for improving innovation [34]. Interestingly, the literature suggests a positive relationship between crowdsourcing and organisational learning [1], but there is no empirical evidence in the literature, in particular in the context of the various types of crowdsourcing used by public organisations. As part of previous research, it was verified how crowdsourcing is linked to organisational learning. However, these studies were conducted in mature and innovative organisations, and only one type of crowdsourcing was considered - the conclusions were generalized to all types of crowdsourcing [38]. That is why, the aim of our study is to present a new paradigm that combines crowdsourcing with organisational learning, including four types of crowdsourcing, according to the division by J. Howe: collective intelligence, crowd creation, crowd voting, and crowdfunding. Bearing in mind the above, four free-form interviews were conducted with the management staff of municipal offices that make use of each of the distinguished types of crowdsourcing. Secondary sources in the form of strategy analysis and reports posted on the websites of municipal offices complement the research. A review of the current state of knowledge on crowdsourcing suggests conducting future research in public organisations [12, 13], especially in the municipal offices [41]. We believe that our research will contribute to a better understanding of crowdsourcing in the context of organisational learning and it will allow us to postulate that crowdsourcing is a new and rapidly evolving organisational learning paradigm. The research is of an interpretive nature, which will allow us to look at the significance of the phenomena and understand the activities and relations taking place in crowdsourcing. It will also contribute to managerial practice because it will reveal the structure of crowdsourcing with a specification of its types, which may be a decision criterion for decision-makers deciding on its implementation.

2. Theoretical background

2.1. Crowdsourcing

Crowdsourcing, as defined by Jeff Howe [23], is the act of taking a job traditionally performed by a designated employee and outsourcing it to an undefined, gene- rally large group of people in the form of an open call. Crowdsourcing focuses on crowd wisdom, and more precisely: "under the right circumstances, groups are remarkably intelligent, and are often smarter than the smartest people in them" [42]. Crowdsourcing is one of the most important factors affecting the time of launching a product and improving its quality [18]. In addition, the previous literature on crowdsourcing focused mainly on the benefits of access to creativity, openness, and various solutions [3]. Crowdsourcing has been proven to improve business processes [37], creating open innovations [11, 14], building competitive advantage, creating innovation and organisational efficiency. It has also been mentioned that it contributes to organisational learning [5, 22, 31].

Crowdsourcing is the source of organisational learning also in public organisations [44]. Its specificity is related to the characteristics of public organisations and the context of their operation. First of all, the public sector operates on the basis of a stakeholder model, which should help engage in crowdsourcing due to the participatory modus of activity. On the other hand, however, there are clear organisational, technological, social and cultural limitations stemming from the context of the functioning of this type of organisation [36]. Public organisations, in comparison with commercial organisations, often have a greater degree of formalization and bureaucratization, as well as resistance to change, which may hinder the development of crowdsourcing. Also, the absorption of new IT technologies may be slower in competitiveness-neutral activities. The use of crowdsourcing for organisational learning is also shaped by the level of social capital and the dominant configurations of cultural values [30, 43]. The low level of social capital limits the possibilities of using

crowdsourcing. Similar significant dependencies can be found at the level of identity and organisational cultures. Summing up, crowdsourcing in the learning process of public organisations is a completely new approach [9], which, due to the development of information technologies, the social media, and the stakeholder model, will probably gain on significance and may become a new paradigm of organisational learning in the future.

2.2. Organisational learning – a 4I perspective

Organisational learning is a process in which organisations learn in a quickly changing environment. Organisational learning is therefore "the process of change in individual and shared thought and action, which is affected by and embedded in the institutions of the organisation" [17].

The multilevel concept of organisational learning by M. M. Crossan, H. W. Lane and R. E. White recognises them as a dynamic process in which changes in knowledge and behaviours occur and the results of earlier learning in individual actions are implemented, which means a flow of learning between all levels. Considering the purpose of this study, organisational learning will be perceived through the prism of the approach of M. M. Crossan and her colleagues. This is due to the fact that this approach assumes a dynamic linking of all activities. Such treatment of organisational learning will enable a holistic view of the topic of this study. In addition, this approach is most often used in the literature to study organisational learning factors, inter alia, absorption capacity, value stream in product development, service development, leadership, strategic renewal. According to it, the learning process takes four forms that flow seamlessly into one another, i.e. intuition, interpretation, integration, and institutionalization. Learning takes place on three levels, i.e. individual, team, and organisational. Intuition and interpretation occur on an individual level. These processes take place in the heads of individual organisational units and rely on modifying or generating individual knowledge based on individual experience and knowledge. As a result, the employee's knowledge of an expert nature develops. At the team level, there are interactions between individual units. Through interpretation and integration, and more specifically joint decision-making, actions or conversations, are followed by common understanding, which allows new knowledge to emerge. It is the basis for later joint action. At the organisational level, through institutionalization, the learning outcomes of individuals and the team are defined, consolidated and disseminated. The knowledge of individuals and the team is consolidated in processes, structures, strategies, systems and culture. They form a whole and are adapted to the requirements of the environment.

3. Empirical research design

Since 2008, scientific publications, considering the issue of crowdsourcing in public organisations, have been widely published in the literature. Since then, the number of studies presenting the latest research results in this area has been increasing year by year. However, they still do not cover all possible fields of scientific exploration that crowdsourcing is affected by. This was demonstrated by the research of authors who identified research gaps in previous foreign and national scientific publications in the field of crowdsourcing. Despite the recommendations, the issue of organisational learning using crowdsourcing in the context of public organisations is omitted. This study is, therefore, an attempt to supplement the current state of the art on the importance of crowdsourcing for organisational learning with the results of research conducted in relation to municipal offices in Poland.

3.1. Type of study

The study employs a case study procedure with a single case study replication strategy in the form of an analysis of the multiplication of similar cases. It was considered that the use of a parallel single study of similar cases would allow to notice variables unnoticeable in the course of literature preparation for research and ensure the reliability of the results obtained. The main intention of the case study is to present and explain ways of solving various problems that a manager can face [45].

It allows for looking at the phenomena and understand the relationships that exist between them. As R. K. Yin points out, "the case study is an empirical study that explores the contemporary phenomenon (»case«) in the context of reality, especially when the boundaries between the phenomenon and the context are not completely obvious" [45]. Moreover, the case study is one of the qualitative research methods that are oriented on understanding the situation, the nature of a specific phenomenon, process or event, and determining the direction of dependence between theoretical constructs. It allows for developing the existing theory, explain phenomena that have not been recognized so far, analyse the behaviour of the organisation, test the theory and understand the circumstances of events, processes without manipulating their course, understand the nature of a specific phenomenon, its causes, sources, conditions, context and interaction with other phenomena. R. K. Yin [45] argue that the case study is a knowledge base that provides direction for future research and uses a holistic approach to the study of real events. In connection with the above, the case study was used to gain a deeper insight into the contemporary problem in its true context. Due to the fact that crowdsourcing is still a relatively new concept, the above-mentioned advantage of case studies over other methods may result from the desire to thoroughly investigate, better understand the reality and the early stage of knowledge development about the importance of crowdsourcing for organisational learning.

3.2. Case selection and characterisation

As it has already been indicated, the article adopts a qualitative approach using the case study procedure. Due to the purpose of the article, as well as the purpose of using the case study itself, the choice of subjects was conscious and intentional. Which means that the selection of the sample neglects the criterion of representativeness, and it is more important to select cases that present the investigator's interesting phenomena in a visible and expressive manner. Hence, the randomness of selection is neither necessary nor even desirable. The selection of the research subject was carried out using the funnel method. First, the search for appropriate public organisations was narrowed down to the municipal offices. Previous research has concerned crowdsourcing in ministries, governments and government agencies [4, 32, 43], and healthcare [12]. The aspect of municipal offices has been overlooked. The literature indicates that crowdsourcing should be included in city strategies and that it is helpful during spatial planning. In addition, according to the authors of the World Bank 2009 Report, the socio-economic development of cities is of key importance. with the creation of public policies aimed at providing basic living standards and including residents in decision-making. Thus, cities are becoming the centres and engines for the development and improvement of the innovative economy. This determines reaching for modern technologies that enable residents to solve problems and create innovative solutions. Secondly, the choice of the municipal offices has been limited to those that make use crowdsourcing. Thirdly, during the selection of the study subjects, it was considered that to present a complete picture of crowdsourcing, municipal offices that use one of the types of crowdsourcing, according to the division by J. Howe [24] should be identified. Fourthly, the selection of cases from the same population is aimed at limiting the number of variables affecting the explained variables. Taking into account all of the above premises, the research was carried out in the following four selected municipal offices, which make use of   crowdsourcing: the City of Lublin Municipal Office (collective intelligence), the Capital City of Warsaw Municipal Office (crowd creation), the Municipal Office in Dąbrowa Górnicza (crowd voting) and the Municipal Office of Krakow (crowdfunding). In the further part of the article, the municipal offices examined will be referred to as cases 1 to 4 - to facilitate the discussion. The number of offices subject to detailed exploration meets the requirements for case studies. The literature states that for methodical and pragmatic reasons the research sample subjected to the case study method should be in the range of 4 to 10 research subjects. The table below presents a synthetic approach characterizing the municipal offices under study.

Table 1. Principal elements of the characteristics of the municipal offices studied in the form of cases studies

	Case 1	Case 2	Case 3	Case 4

Elements of the characteristics	City of Lublin Municipal Office	Capital City of Warsaw Municipal Office	Municipal Office in Dąbrowa Górnicza	City of Krakow Municipal Office
City area	147 km2	517 km2	189 km2	327 km2
Population	340,000	1,758, 143	125,000	760,000
Unemployment rate	6,2%	5,6%	6,1%	3,2%

Source: own elaboration based on data of the Central Statistical Office and websites of the municipal offices under study.

Case 1. City of Lublin Municipal Office (an example of collective intelligence)

Lublin is a city with district rights located in the eastern part of Poland. "Lubelskie Dobre Pomysły" is a crowdsourcing platform that was initiated and implemented in 2014 at the City of Lublin Municipal Office. Its main goal is to reach the largest group of inhabitants of the Lublin Province, who want to participate in the life of the city and have a real impact on shaping its image and development directions. The platform is divided into seven categories: the image of the Lublin region, entrepreneur-office, foreign economic missions, security and public order, networking, entrepreneur-university, and exports. Within individual categories, members of the online community are asked questions. There are rewards for registered and active users. They can collect points for adding an idea or comment, which can later be exchanged for prizes.

Case 2. Capital City of Warsaw Municipal Office (an example of crowd creation)

Warsaw is a city located in the central-eastern part of the Mazovia Province. "Otwarta Warszawa" is a crowdsourcing internet platform that was implemented from 4 May   2014 to 31 July 2015 by the City of Warsaw Municipal Office. For this initiative, the then deputy director of the Social Communication Center, the unit responsible for "Otwarta Waszawa", received in 2014 the international award: "C4F Davos Awards (Communication for Future Davos Awards)" in the "Image of the Future" category. In total, "Open Warsaw" included four thematic areas that were addressed to residents in the form of questions: (1) space, (2) culture and recreation, (3) time machine, and (4) Warsaw's identity. In each of these areas, registered users could provide answers and submit their proposals. The ideas sent were evaluated by a jury.

Case 3. Municipal Office in Dąbrowa Górnicza (an example of crowd voting)

Dąbrowa Górnicza is a city with district rights located in southern Poland. Since 2013 the Municipal Office in Dąbrowa Górnicza implements crowdsourcing through the "NaprawmyTo.pl" platform. Thanks to the portal, residents can report defects or problems in the following categories: infrastructure, security, buildings, nature, and others. After adding them, they are sent to one organisational unit of the Office, and then they are sent to appropriate departments or units. The people making the notifications can then follow the execution status of a given alert.

Case 4. City of Krakow Municipal Office (an example of crowdfunding)

Krakow is a city with district rights located in southern Poland. In 2017, the City Green Board, a municipal organisational unit of the City of Krakow Municipal Office, joined the students' project of the Jagiellonian University called "At the corner of Dekerta Street", which assumed the creation of a pocket park and butterfly garden on the corner of Dekerta and Wałowa streets. To this end, a fundraiser was launched through the crowdfunding platform PolakPotrafi.pl (https://polakpotrafi.pl/projekt/na-rogu-dekerta). The assumption was to collect PLN 20,000 PLN for land development. The campaign began in October 2016, and the collection lasted from December

15, 2016 to January 31, 2017. According to the policy of the portal, a reward was provided for each depositor. It was possible to collect PLN 23,272 vs. 20,000. necessary for the implementation of the project. A total of 249 people made the payments.

3.3. Data selection and measurement

Two research methods were used in the research: the interview method and the method for examining documents. Data triangulation allowed for ensuring an adequate level of reliability and reduce the level of inference errors and to achieve the level of saturation of the theory. As presented in the table, the research was based on primary and secondary data sources: a) free interviews with representatives of the municipal offices; b) studies and reports on crowdsourcing, websites of crowdsourcing initiatives, press articles dedicated to these initiatives and strategies of the municipal offices under study.

Table 1. Overview of data collected

	Case 1	Case 2	Case 3	Case 4
Data sources	**City of Lublin Municipal Office**	**Capital City of Warsaw Municipal Office**	**Municipal Office in Dąbrowa Górnicza**	**City of Krakow Municipal Office**
Primary data: They were used to grasp, understand the experiences of the offices studied in learning by using crowdsourcing	1 interview: R1 – secretary	3 interviews: R2: Vice-Mayor R3: Vice-Director R4: Chief Specialist	2 interviews: R5: Deputy Head R6: Chief Specialist	2 interviews: R7: Director R8: Manager
Secondary data: They constituted the basis for research construction	The office and crowdsourcing initiative websites, development strategy, 5 articles in the press	The office and crowdsourcing initiative websites, development strategy, 10 articles, 2 internal reports	The office and crowdsourcing initiative websites, development strategy, 5 articles	The office and crowdsourcing initiative websites, development strategy, 10 articles
Primary data: They were used to grasp, understand the experiences of the offices studied in learning by using crowdsourcing	1 interview: R1 – secretary	3 interviews: R2: Vice-Mayor R3: Vice-Director R4: Chief Specialist	2 interviews: R5: Deputy Head R6: Chief Specialist	2 interviews: R7: Director R8: Manager

Source: own elaboration.

The data collection process was carried out from January to April 2018. In general, eight free-form interviews were conducted during the research. The respondents participating in the research were representatives of the top management of the city office and persons coordinating the given crowdsourcing platform. All these people were involved in the crowdsourcing initiative in the municipal offices under examination. Interviews were carried out at the offices of cities and lasted from 60 to 120 minutes. With the consent of the interviewees, all interviews were recorded. Subsequently, they were transcribed.

3.4. Data analysis

It should be emphasized that the analysis of qualitative data is a process similar to viewing reality in a kaleidoscope [20] or navigation in a maze, which means the need for transparent data analysis. The basis for data analysis is the interpretation approach. Its choice was the desire to discover and understand organisational learning using crowdsourcing from the perspective of key actors involved in the process. Such an approach requires comparability and detailed descriptions, which is consistent with the desire to understand experiences in the field of organisational learning using crowdsourcing. For this purpose, a narrative analysis was used, which is a "systematic analysis of personal experiences and meanings that the active participants of a given event built". Narrative analysis is an interpretive technique that focuses on stories and narratives where people talk about their experiences. Its purpose is not to check whether their experiences are real, but to try to answer the question of how and why they create a narrative. It should be noted that narratives are usually created accidentally [8]. Therefore, the questions asked to the respondents were formulated in such way as to capture the actions that had been undertaken before the crowdsourcing appeared, and then attempted to capture the actions that were taken after the appearance of crowdsourcing. The use of four case studies was useful in studying the use of crowdsourcing types for organisational learning. For reasons of consistency and clarity, the qualitative study was of an iterative nature. Thanks to this, the narrative analysis made it possible to present the perspective of the organisation's participants. This refers to D. M. Boje's approach who believes that narratives can be selectively different depending on the recipients. Taking this into account, it was assumed that the respondents should be persons from the top management.

4. Analysis and results

The analysis of the four case studies provided rich and insightful information on crowdsourcing and organisational learning, and it served to assess crowdsourcing as a new organisational learning paradigm. In the case of organisational learning, an original multidimensional approach to organisational learning was adopted, taking into account the 4I model by M. M. Crossan et al. (1999). The authors proposed four subprocesses, i.e. intuition, interpretation, integration, and institutionalization. The literature indicates that the 4I model can be used to study various forms or ways of organisational learning [1, 15, 19, 33].

Case 1 – collective intelligence

In the municipal office that uses collective intelligence, the idea of using crowdsourcing resulted from the desire to try and experiment. In the interview, the respondent said: "In our activity we have participated in certain programs related to, for example, the examination of administration functions in general, the implementation of administrative processes by the municipality, and the creation of certain management models in these areas. We are also evaluated by the local governments, but we also evaluate ourselves through various benchmarking forms, or in the near future we will also implement several projects related to managerial improvement, the quality of implementation of projects, not only by this 9,000 standard, but also through CAF, through other standards, which are to improve, but also bring closer these management and administrative functions to the residents, but also the other way round so that residents in some areas can co-decide on the tasks carried out" (C1 R1). The above statement indicates that in the case of collective intelligence, intuition is associated with a desire to imitate and reach for new solutions tested and used by others. This goes in line with the conceptualization by M. M. Crossan et al. [17], where intuition is the process of an earlier recognition of models. In this case, imitating other, already proven solutions was fundamental as an explanation of the origin of intuition.

The next process, interpretation is a conscious explanation, expression and discussion of ideas and insights with other members of the organisation. We are talking about collective activities, dialogue, discussions, meetings or other means of communication. Common knowledge is the basis

for joint action: "(...) this idea was created to show it to some extent and outside, to create areas in which not only office employees can be located, but also to use this social activity in in a sense, aggregate and try to use all the data that is ther" (C1.R1). Information, obtained in this way, contributes to the revision of the current action, setting new strategies and seeking answers to the question whether the new venture will bring the assumed results. This applies to explaining, cooperating, discussing, supporting, and selecting specific ideas. Thus, problems are identified in a new light, using knowledge from crowdsourcing. In other words, crowdsourcing allows offices to reinterpret their problems: "(...) To acquire this information in such a very open formula, that is, not to impose certain rules in some cases. Let's prepare a specific document that is only subject to a certain consultation or selection, or the selection of these comments to be made, which are submitted. On the contrary, we also try to acquire knowledge, information, what is important for residents, for the community, to create only a solution and documents that affect the functioning of the municipality in general, the implementation of tasks in this area by the local government's administration "(C1 R1)
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The basic feature of integration is the mutual understanding of members in a group. It focuses on updating ideas through collective actions and common practices. It includes testing, evaluation, and the final introduction of an idea - hence starting with organisational cognition and ending with action. Thanks to cooperation and adaptation, we develop common understanding and give meaning to activities. Communication and cooperation are of key importance here. Communication not only allows learning, but also allows to retain what is the result of the learning process and pass on the knowledge thus obtained: "Here, with over a dozen years of activity, we have worked out together in the office some reliable mechanisms of social participation, participative management, participation of inhabitants in specific activities, suggestions, and solutions. And we are trying to develop these models more and more, of course with a dose of humbleness, whether we take into account to find a formula and the form of reaching the largest group of people, because we also noticed at some point that a certain group of people participate in the consultative meetings, also a certain group of people responds to certain information and expectations of the local community. Therefore, we are trying to find a model that would interest a larger group of people, interest specific environments, so that this would not only be somewhat an illusive kind of action" (C1.R1).

Institutionalization, the last process in the 4I model, refers to embedding in organisational systems and procedures what has been worked out during learning. This allows the organisation to root knowledge, regulating its activities and using what the organisation has learned so far. This process generates new applications based on the previous experience of employees and employee teams. All this will allow the organisation to adapt to the requirements of the environment: "I will say yes, any process that is not carried out by one specific person, or one institution, and it also seems to rely on the evaluation by other people and in this open formula, is in some way the extension of this process, in terms of just showing or searching for certain solutions, collecting this, analysing and later developing and selecting some models for action (...) these tools were used to modify, monitor, develop or modify and change the procedures that are still alive, which are constantly adapted to the needs" (C1.R1).

Case 2 – crowd creation

Intuition takes place on an individual level and is defined as „the preconscious recognition of the pattern and/or possibilities inherent in a personal stream of experience" (Crossan et al., 1999). The central point of this process is a feeling. Personal experiences of individuals in the organisation allow them to recognize patterns and see new opportunities (Weick 1995) and answer two questions: how to do and how to do it differently? This allows us to recognize the current situation and reference it to past patterns and create new connections and see innovative possibilities. It should be emphasized that intuition as a process is most often triggered by external stimuli. It may be important to have the competence and personal experience of employees that will allow the implementation of new solutions. This means that the organisation should want and be able to redefine its current course of action, discover hidden problems, using its past and employees' competences. Expanding knowledge

about problems allows the interested parties to cover hidden problems and link them to previously unresolved issues. Hence the importance of employee competencies. In the case of crowd creation, openness to new products is the most important link: "(...) Ms. Mayor has always been very open to the exchange of personnel and also made it clear that brave people, with ideas, have a chance to break through (C2. R4). "(...) somehow I manage to inspire the team and the most important thing is that you have an idea" (...) I understand that there are limitations and that there is fear of new things, it is better not to do anything, so that the councillors do   complain that the money was spent in a bad way, what for and why? So you have to have some courage, you have to believe and look for potential sponsors "(C2. R3). As part of intuition, language and creating cognitive maps are also important: "first of all, he made us realize how important conversation is and creating forums for conversations with the residents and   their inclusion" (C2.R4).

In the case of interpretation, crowd creation for the office is not "art for art's sake", but it is "an interesting mechanism for working on some processes of discussing a local plan, budget, or greenery" (C2.R2). The Office states that "the administration at every level is established to act for the residents and citizens. To act for them (...). Therefore, the administration of every level, aware of such a functioning of the human mind, should strive for the widest possible publicizing of information at the earliest possible stage of each project, trying to make the decision-making process as transparent as possible (...). Thanks to this, we will gain substantive knowledge reflecting real needs and real problems (www.konsultacje.um.warszawa.pl).

As part of a crowdsourcing initiative, city offices included other entities to collaborate, among others the municipal office's auxiliary units, but also academic circles: There were voices that after implementing crowdsourcing, the willingness to collaborate   increased: "establishing new quality contacts with employees from offices and municipal units on other, innovative, full of openness and special kindness and subsidiarity level compared to routine work. We now know who to call, for example, with a request for advice on new ideas and simply support the substantive work "(C2.R4). This allows them to be more effective and efficient in their actions: "We need to talk about a systemic approach, which in practice boils down to encouraging and involving other departments to implement new endeavours (...) we need to know how these things overlap, it is also a pain for all offices, namely that they cannot see each other, everyone entrenches in their own (...) we have to see one another and talk about modules "(C2.R3).

As it has already been mentioned, institutionalization takes place when new activities become part of the organisational routine and systems. The surveyed office is of the opinion that crowdsourcing has not contributed to major changes in the municipal office and is rather the result of changes: "it's hard to say that something has changed dramatically through crowdsourcing. It can be said that the consequence of the fact that the city is changing, was that at some point we reached for crowdsourcing "(C2.R2). The respondents admit, however, that crowdsourcing has contributed to the satisfaction of office staff and the residents. The aftermath of the crowdsourcing initiative was a competition for ideas improving the functioning of the office "Employee Suggestions". As part of the first edition of the competition, the idea for access for the employees to Warsaw's photographs intended for promotional and information activities was distinguished. One of the interviewees recognized that the employees have become more innovative and creative. Thus, it can be said that "Otwarta Warszawa" encouraged the employees of individual offices to enter into discussions and reach for the opinions of others: "that is, they introduce some important documents, they ask how to do it, what activists and residents to meet" (C2.R4) .

Case 3 – crowd voting
In the third case, the desire to implement crowdsourcing resulted from the previous experience of the office connected with involving the residents in co-deciding and co-managing the city: "it practically started here in 2008, when the agreement was created named Together for the City (...). We wanted to involve the residents in long-term co-decision (...) the mayor had always wanted to listen, he wanted to talk to the inhabitants "(C3.R5).

The units share intuition with others and engage in collective interpretation, which facilitates collective understanding. The case examined included broadly understood stakeholders: "(...) the basis was to obtain information about problems occurring in public space. The next thing is expectations, we know what the residents want, what they care about. They will tell us what we should do. This does not mean that the residents get what they want. Thanks to that we have knowledge about security. People want to inform us about what is happening in the city "(C3.R6).

Language in interpretation plays a fundamental role. At the beginning it was important to establish cognitive maps: "we want to implement something together so that the residents can decide what they want. The beginnings were difficult, but now we understand each other without words "(C3.R5). This allows the inclusion of all interested parties and the joint development of solutions to problems that organisations may face and ask. This approach is identical to the proposal of Crossan et al. [17]

In the studied case of the crowd voting, the basis for integration was understanding: "We wanted to develop certain rules. We developed a way of communicating with the residents and including them in matters that concern them. Together, we understood that it would not be easier for us to act according to common, clear and accepted principles "(C3.R5). Crowd voting has increased the use of technology by the technology office to handle matters: it was our first technological innovation that emboldened us to introduce more"(C3.R6). Thanks to that the office changed its organisational procedures so that they could be introduced.

Case 4 - crowdfunding

Employees' competences and organisational competences are important in relation to the ability to rediscover. In particular, the organisational ones are dynamic in nature and manifest themselves in the ability to behave in a manner adequate to the requirements of the situation. This is confirmed by the findings of other authors. They recognize that proper management of human resources can increase confidence and motivation among employees involved in crowdsourcing [47]. This can also be seen in crowdfunding: "We have a very nice, young and team interested in the world and it is as it seems the key to success, which for sure is great, and we also have a director with an open head. These are the two things that are absolutely indispensable. If the director is not afraid of such innovative and sometimes seemingly crazy ideas like, I don't   know, for example planting tens of thousands of bulb plants on the boulevards, yes, it was one of our first activities, and imagine if someone with such a clerical head would hear about it he/she would have tapped on it and it would end at that, but if first of all he trusts us, and secondly, he also has such intuition and has …, he is passionate about his work, so he nods willingly "(C4.R8). Therefore, in the case of crowdfunding, the basis of intuition was the openness of the management staff.

For the office under study, the aim of the crowdfunding endeavour is, above all, commitment and to involve residents: "(...) because if we want, for example, good quality projects in the civic budget, we must show them projects from around the world that they did not hear as laymen and in Poland they have no way of seeing them, so that they could have such a nice project, for example a playground for adults submitted to   the budget "(C4.R8). In addition, attention is paid to the encouragement and inclusion of the young generation to and in action and the use of its potential and willingness to act: "The younger generation is much more aware of this in terms of thinking, I am also responsible for what is around. And it's cool, you just have to support them "(C4.R8).

Analysing the experience of the examined office, it can be concluded that cooperation with widely understood partners is comfortable for them. Often, without cooperation with other organisations, they would not be able to start a crowdsourcing initiative: "(...) from the point of our knowledge, it is not possible for the institutions themselves to apply for these funds, as if in a sense they initiated crowdfunding campaigns. There is no way we can initiate crowdfunding as an institution ourselves and also apply for funds "(C4.R8).

What is more, the office recognizes the potential of the residents and their openness and willingness to change the reality that surrounds them: "(...) I myself seeing the potential of young people who enter the labour market who have their ideas and are volcanoes of ideas, I believe from

the beginning that you must support and develop this passion and the willingness to change the world. So it shows that this potential of young people, the potential of students, supported by scientists with experience, pays for us and gives ideas developed in this way which are valuable "(C4.R7).

The above fragments indicate the residents' willingness to cooperate. Knowledge acquired in this way allows the office to learn about possible threats that may arise as a result of occurring deviations. This means that the organisation must develop a way to respond to the requirements of the environment and quickly implement them. Which is in line with the feed forward principle: "the residents show us a place which in the eyes of the residents requires investment and those that are important to them. It is also an opportunity to involve the residents and build their involvement. For the Office, crowdfunding is an opportunity to obtain ready ideas from residents, refresh and renew the city's brand, and get extra hands to work and meet their expectations "(C4.R8).

Crowdsourcing has enabled the office to meet the expectations of residents, draw conclusions, and make improvements to activities performed in the future: "These are sometimes really small things that affect the improvement of the functioning of the website. Recently, such a topic appeared somewhere, that some information was on the site, but you had to go inside the Public Information Bulletin to find them. After the residents' signals we made a tab with infographics on the main website. This is a trifle, but I see that such a thinking in these categories is meeting the residents' expectations" (C4.R8). In addition, crowdsourcing allowed the office to learn from the residents: "thanks to the fact that they show the office employees what they expect, what they would like to improve and what to correct – the employees can modify their way of working and functioning" (C4.R8).

5. Discussion

This article is a voice in an important discussion on a new paradigm that combines crowdsourcing with organisational learning. It is intriguing and at the same time important from the point of view of creating the theory and practice of managing public organisations. Based on the assumptions of the theory of scientific revolutions [27], the paradigm is characterized by the fact that it leads to the solution of the problem and constitutes a historically variable consensus omnium of the community of researchers of a particular discipline [40]. The paradigm is a conceptual framework, a way of looking at the world, a set of assumptions, theories and models that are widely accepted and shared in a specific field of activity at a specific moment. We are talking about significant and important advances in the perception of the world. Organisational learning is recognized in the literature as an "alternative paradigm by which systems can change" [15]. In addition, organisational learning offers an alternative paradigm by which systems can change, thus permitting us to redefine the economy and society. Our research shows crowdsourcing as the basis for the emergence of a scientific concept, and hence the organisational learning paradigm. In our study, we consider organisational learning as a dynamic process, according to the concept of Crossan et al. [17] and covering three levels: individual, group, and organisational, which are interrelated by social and psychological processes. In this approach, organisational learning is a dynamic game between the organisation's belief system, the behaviour of its members and the stimuli from the environment. This leads to the fact that when individual and group learning becomes institutionalized, then organisational learning appears, and knowledge is built into repositories, such as: routines, systems, structure and organisational culture and strategy [6]. In particular, our research shows that crowdsourcing is a new paradigm of organisational learning. However, its importance for individual organisational learning processes is clear. The results show that regardless of the type, crowdsourcing is perceived as an adaptation to changes in the environment and a contribution to changes in practices. In terms of the 4I organisational learning model, knowledge that is at the individual, group, and organisational level is static, while the one that moves between them is dynamic.

Thus, new ideas flow from the level of individuals to the level of the group and organisation. At the same time, what has already been learned returns from the level of the organisation to the level of the group and the individual, influencing the ways of thinking and acting by members of the

organisation. First, according to the 4I model, organisational learning begins with intuition. It is a subconscious recognition of the pattern and possibilities, which is inseparable from the personal experience of the individual. Individuals recognize patterns from their own past to determine their potential application in the current work environment. This approach can also be seen in organisational learning using crowdsourcing. Our discovery complements previous research, in which the openness of employees was decisive for the commencement of crowdsourcing activities. From the perspective of the studied municipal offices, it is the openness and willingness to cooperate with employees that is important when using crowdsourcing. The intention of the municipal offices that have started the implementation of the crowdsourcing initiative was their will to reformulate the existing way of functioning and to seek new sources of knowledge.

First of all, the idea of crowdsourcing was created out of the desire to imitate (in the case of collective intelligence) as well as the openness and experience of managers (in the case of crowd creation, crowd voting, and crowdfunding). This is identical with the findings of Crossan et al. [17]. It boils down to the fact that the expert origin of intuition is a process of prior model recognition.

Secondly, interpretation is the process of organisational learning, in which individuals verbalise or implement their own observations and engage in collective understanding, in particular: the inclusion of stakeholders (collective intelligence), establishing cooperation of all departments (crowd creation), joint action (crowd voting), and the development of the society's potential (crowdfunding). As part of the study, it was found that the virtual knowledge gained from the community launched an innovative approach to the employees in carrying out the tasks assigned, but they also took courage to initiate new ideas or improvements. What's more, employees began to cooperate and share knowledge more willingly. This can be compared to the processes of socialization, the adaptation of individuals to the organisation. This discovery supports the general view that crowdsourcing can contribute to employees' productivity and willingness to cooperate with other units within the organisation.

Thirdly, integration comes down to a common understanding of members in a group and involves a change in collective understanding at group and organisation level. The municipal offices studied declare that knowledge acquired from virtual communities using crowdsourcing is useful and possible to use in everyday work (collective intelligence). In addition, the offices recognize that they have become more bold when they are to undertake new projects (crowd creation), their employees are more willing to cooperate (crowd voting), and they invite diverse communities (crowdfunding) to cooperate.

Fourthly, institutionalization comes down to taking routine actions and embedding them in organisational systems, structures, procedures, and practices. The surveyed offices declare that the knowledge acquired from crowdsourcing has contributed to the modification of organisational procedures (collective intelligence), increased crowd satisfaction, technological improvements (crowd voting) and openness to improvements (crowdfunding).

In total, all city councils studied admitted that crowdsourcing allowed them to adapt to the expectations of the surroundings and increased openness to the opinions of residents, while 3 offices out of 4 studied stated that there was an improvement in the quality and increase of the services offered. This refers to the findings that organisational learning means the process of improving actions through better knowledge and understanding [6]. Many researchers perceive organisational learning as an adaptation to environmental changes. In addition, the offices indicate that crowdsourcing has contributed to an increase in the satisfaction of the residents and employees. Which is consistent with the fact that organisational learning enables an organisation to influence its surroundings. In addition, the described descriptions of organisational learning taking into account the concept of 4I, show that learning can be influenced by many factors and results from internal stimuli, including, inter alia, the innovative aspirations of managers. Our research shows that the openness of the management of the offices is of great importance for organisational learning using crowdsourcing. Some authors believe that as a result of organisational learning, the scope of potential behaviour of the organisation may change and its aims may change.

The municipal offices studied indicate that owing to crowdsourcing, the use of technology to handle matters has increased. Such results are justified by the fact that organisational learning allows changing the rules and practices of conduct in the organisation. Which corresponds to the fact that organisational learning is the result of changes in the current behaviour of the organisation. In this way, the obtained results of empirical research give rise to the recognition of crowdsourcing as a new, emerging paradigm of organisational learning, regardless of its type.

6. Conclusion

The obtained research results provide insight into the importance of crowdsourcing for organisational learning of the municipal offices. In this way, they constitute a contribution to the theory of management - because the study combines these two phenomena and takes into account connections in previously unexplored municipal offices. First, the research carried out takes a new look at crowdsourcing. So far it has been combined with the improvement of business processes, creation of open innovations, building a competitive advantage, access to experience, innovation, information , skills, and work of the crowd that are outside the organisation. Secondly, few authors have argued that crowdsourcing can be a source for generating ideas from knowledge gained from virtual communities, combining crowdsourcing with the organisation's openness to new external knowledge, a model of value capture [29]. Thirdly, the literature indicates that crowdsourcing is indicative of complementing traditional learning [31] and is a new contribution and mechanism for organisational learning [38].

However, research focused primarily on determining the importance of internal crowdsourcing for organisational learning [47] and crowdsourcing for organisational learning in incumbent companies in mature industries. Research in this area has not been conducted in the environment of the municipal offices. This means that the research carried out in this work contributes to filling the gap, fits into the academic debate about organisational learning using crowdsourcing and sheds new light on this issue. As Sudoł points out, scientific truths can be considered as paradigms due to their importance to the functioning of science, compliance with the reality existing in the organisation, and the degree of generality that allows them to refer to other organisations [39]. The importance of crowdsourcing in these organisations is an important justification for the creation of new areas in this scope. Fourthly, by focusing on city offices, we are expanding previous research on crowdsourcing in the area of under-researched research. This is all the more important because crowdsourcing is becoming an increasingly common practice in these offices [7, 21, 26], and research in this area is a new area of scientific interest attracting practitioners and researchers [46]. What is more, the research contributes to expanding knowledge about crowdsourcing, because it provides qualitative data necessary to supplement fragmentary knowledge.

We are fully aware that our study is not free of its limitations. The survey was conducted in 4 city offices in Poland out of the 27 that make use of crowdsourcing. Thus, our sample may be considered relatively small, however it is consistent with the guidelines for a multiple case study, i.e. a range of four to ten cases. However, our research is the most extensive as far as municipal offices in Poland are concerned, because so far such studies have not been conducted at all. Considering the above, further research should be conducted on a larger sample. Secondly, the study was conducted using the case study procedure, which means focusing on individual objects and lack of ambition to form generalizations about the community. However, it allows for theorem-making, theory testing and application type use. Moreover, rigorous implementation of the case study procedure contributed to the avoidance of accusations related to accidental data collection, unsystematic data analysis, arbitrary treatment of the creation of the theory, the inability to use the theory to test and the incompleteness of the criterion of intersubjective verifiability. The study was limited to one sector. However, it is the municipal offices that are recognized as those in which this type of research should be carried out. Therefore, purposeful selection is justified theory-wise.

Summing up, it should be recognized that the conducted research is a contribution to further work on recognizing crowdsourcing as a new paradigm of organisational learning. Moreover, conducting further research on its specificity using quantitative research that will allow to examine

the relationship between crowdsourcing and organisational learning is encouraged. As a result, this research will allow for verifying the correctness of the findings and formulations. The applied triangulation can increase the level of internal accuracy of results, reduce the level of inference errors and achieve the level of saturation of the theory. We believe that this scope of research will allow for a better understanding of the specifics of crowdsourcing in the municipal offices.

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References

1.   Aalbers, R.; Dolfsma, W.; Koppius, O., Individual connectedness in innovation networks: On the role of individual motivation. *Research Policy* **2013**, *42*(3), pp. 624-634.
2.   Afuah, A.; Tucci, C. L., Crowdsourcing as a solution to. distant search. *Academy of Management Review* **2012**, *37*, pp. 355-375.
3.   Afuah, A.; Tucci, C. L., Value Capture and Crowdsourcing. *Academy Of Management Review* **2013**, *38*(3), 457-460
4.   Aitamurto, T.; Leiponen, A.; Tee, R., The promise of idea crowdsourcing: Benefits, contexts, limitations. *White Paper June* **2011**, *2*(30).
5.   Argote, L.; Miron-Spektor, E., Organizational Learning From Experience to Knowledge. *Organization Science* **2011**, *22*, 1123-1137.
6.   Argyris, C.; Schön, D., *Organizational learning II*. Reading, Addison-Wesley, MA 1996.
7.   Basto, D.; Flavin, T.; Patino, C., *Crowdsourcing public policy innovation*. Working Paper, Heinz College Carnegie Mellon University 2010.
8.   Boje, D. M., *Narrative methods for organizational and communication research*. London: Sage 2001.
9.   Brabham, D. C, *Crowdsourcing in the public sector*, Georgetown University Press, Washington, 2015.
10. Brabham, D. C., Motivations for Participation in a Crowdsourcing Application to Improve Public Engagement in Transit Planning. *Journal of Applied Communication Research* **2012**, *40*(3), pp. 307-328.
11. Brabham, D. C., Crowdsourcing as a model for problem-solving an introduction and cases, *Convergence* **2008**, vol. 14(1), pp. 75-90.
12. Brabham, D. C.; Ribisl, K. M.; Kirchner, T. R.; Bernhardt, J. M., Crowdsourcing Applications for Public Health. *American Journal of Preventive Medicine* **2014**, *46*(2).
13. Buettner, R., *A Systematic Literature Review of Crowdsourcing Research from a Human Resource Management Perspective*. 48th Hawaii International Conference on System Sciences (HICSS), HI, USA 2015.
14. Burger-Helmchen; T., Pénin, *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, France 2010.
15. Burnes, B.; Cooper, C.; West P., Organisational learning: the new management paradigm?, *Management Decision* **2003**, vol. 41(5), pp. 452-464.
16. Callaghan, Ch. W., Knowledge Management and Problem Solving in Real Time: The Role of Swarm Intelligence. *Interdisciplinary Journal of Information, Knowledge, and Management* **2016**, *11*, pp. 177-199.
17. Crossan, M. M.; Lane, H. W.; White, R. E., An organizational learning framework: From intuition to institution, *Academy of Management Review* **1999**, vol. 24(3), pp. 522-537.
18. Dibbern, J.; Goles, T.; Hirschheim, R.; Jayatilaka, B., Information Systems Outsourcing: A Survey and Analysis of the Literature. *The DATA BASE for Advances in Information Systems* **2004**, *35*(4), pp. 6-102.
19.   Donegan, P. K., Empirical linkages between firm competencies and organisational learning, *The Learning Organization* **2003**, vol. 10(1), pp. 51-62.
20. Dye, J. F.; Schatz, I. M.; Rosenberg, B. A.; Coleman, S. T., Constant comparison method: A kaleidoscope of data. *The Qualitative Report* **2000**, *4*(1/2), 1-9.
21. Epstein, D.; Newhart, M.; Vernon, R., Not by Technology Alone: The "Analog" Aspects of Online Public Engagement in Policymaking. *Government Information Quarterly* **2014**, *31*(2), pp. 337-344.
22. Feller, J., Finnegan, P., Hayes, J., & O'Reilly, P., Orchestrating sustainable crowdsourcing: A characterization of solver brokerages. *Journal of Strategic Information Systems* **2012**, *21*, pp. 216-232.
23. Howe, J. The rise of crowdsourcing, *Wired magazine* **2006**, vol. 14(6), pp. 1-4.
24. Howe, J., *Crowdsourcing*, Crown Publishing Group, New York, 2008.

25. Jeppesen, L. B.; Lakhani, K. R., Marginality and Problem-Solving Effectiveness in Broadcast Search. *Organization Science* **2010**, *21*(5), pp. 1016-1033.

26. Koch, H.; Gonzalez, E.; Leidner, D., *Resolving IT-Culture Conflict in Enterprise 2.0 Implementation*. Proceedings of the 17th Americas Conference on Information Systems, Detroit 2011.

27. Kuhn, T. S., *Struktura rewolucji naukowych*, Fundacja ALETHEIA, Warszawa, 2001.

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

29. Lepak, D. P.; Smith, K. G.; Taylor, M. S., Value Creation and Value Capture: A Multilevel Perspective. *Academy Of Management Review* **2007**, *32*(1), pp. 180-194.

30. Lewandowski, M.; Kożuch, B. (eds.), *Public sector entrepreneurship and the integration of innovative business models*. IGI Global, Hershey, PA 2017.

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

32. Mergel, I.; Bretschneider, S. I.; Louis, C.; Smith, J. *The Challenges of Challenge.gov: Adopting Private Sector Business Innovations in the Federal Government*. Paper presented at the 47th Hawaii International Conference on System Sciences, Waikoloa 2014.

33. Murray, P., Donegan K., Empirical linkages between firm competencies and organisational learning, *The Learning Organization* **2003**, vol. 10(1), pp. 51-62.

34. Nam, T., Suggesting Frameworks of Citizen-Sourcing via Government 2.0. *Government Information Quarterly* **2012**, *29*(1), pp. 12-20.

35. Nam, T., Suggesting Frameworks of Citizen-Sourcing via Government 2.0, *Government Information Quarterly* **2012**, vol. 29(1), pp. 12-20.

36. Parkes, A.; Bednarek, M.; Sułkowski, Ł., *Kulturowa zmienność systemów zarządzania*, Difin, Warszawa 2016.

37. Roy, S., Balamurugan, C., & Gujar, S., *Sustainable employment in India by crowdsourcing enterprise tasks*. Proceedings of the 3rd ACM Symposium on Computing for Development. Bangalore, India – January 11 – 12, 2013.

38. Schlagwein, D.; Bjorn-Andersen, N., Organizational Learning with Crowdsourcing: The Revelatory Case of LEGO, *Journal of the Association for Information Systems* **2014**, vol. 15(11).

39. Sudoł, S., *Paradygmaty w naukach o zarządzaniu*. In: Knapińska, M., & Szarzec, K. (eds.). *Teoria i praktyka gospodarowania we współczesnym świecie*. Poznań: Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu 2014.

40. Sułkowski, Ł., Paradygmaty nauk o zarządzaniu, *Współczesne Zarządzanie* **2013**, no. 2.

41. Sumra, K. B.; Bing, W., Crowdsourcing in local public administration: importance of online platforms. *International Journal of Public Administration Digital Age* **2016**, *3*(4), pp. 28-42

42. Surowiecki, J., The Wisdom of Crowds Why the Many Are Smarter Than the Few and How Collective Wisdom Shapes Business, Economies, Societies and Nations, Doubleday 2004.

43. Taeihagh, A., Crowdsourcing, Sharing Economies and Development. *Journal of Developing Societies* **2017**, *33*(2), pp. 191-222.

44. Wilson, K. B.; Bhakoo, V.; Samson, D., Crowdsourcing: A contemporary form of project management with linkages to open innovation and novel operations. *International Journal of Operations & Production Management* **2018**, *38*(6), pp. 1467-1494.

45. Yin, R. K., *Case Study Research: Design and Methods*, Beverly Hills: Sage Publications 1984.

46. Zhao, Y.; Zhu, Q., Evaluation on crowdsourcing research: Current status and future direction, *Information Systems Frontiers* **2014**, *16*(3), pp. 417-434.

47. Zuchowski, O.; Posegga, O.; Schlagwein, D.; Fischbach, K., Internal crowdsourcing: Conceptual framework, structured review, and research agenda. *Journal of Information Technology* **2016**, *31*(2), pp. 166-184.