

DIGITAL PARTICIPATION IN CULTURAL HERITAGE. THE CASE OF *OPEN MONUMENTS* CROWDSOURCING PLATFORM

CYFROWA PARTYCYPACJA W OBSZARZE DZIEDZICTWA KULTUROWEGO. PRZYKŁAD CROWDSOURCINGOWEJ PLATFORMY *OTWARTE ZABYTKI*

ABSTRACT

Crowdsourcing has been made possible thanks to the evolution of information and communication technology which, in turn, supports innovation and development of organizations. In cultural heritage crowdsourcing is a continuation of a long-standing tradition of inviting the public to contribute on a volunteer basis. This form of online engagement is also a promising tool to enhance the sense of civic responsibility for heritage. The article looks at crowdsourcing as a digital participation practice in cultural heritage. It investigates the case of the Polish *Open Monuments* crowdsourcing platform. It is an open project with a focus on refining description about historical sites in Poland and Polish historical sites abroad. The paper starts with the introduction of the crowdsourcing notion in the digital era. Then it looks at the organisational aspects of *Open Monuments*. Having offered an overview of the main issues regarding this paper the next sections offer the examination of the performance of the so called *crowds* and the analysis of financial implications of crowdsourcing in the nonprofit environment.

STRESZCZENIE

Uczestnictwo rozproszone w sieci, znane pod angielskim terminem „crowdsourcing” stało się możliwe dzięki ewolucji technologii informacyjno-komunikacyjnych (ICT), które z kolei wspierają procesy innowacyjne i rozwojowe organizacji.

W obszarze dziedzictwa kulturowego crowdsourcing jest kontynuacją wieloletniej tradycji zapraszania do współpracy publiczności (tj. widzów, uczestników pokazu, zwiedzających) na zasadzie wolontariatu. Ta forma zaangażowana cyfrowego jest również ciekawym narzędziem wspierającym poczucie obywatelskiej odpowiedzialności za dziedzictwo. Artykuł koncentruje się na crowdsourcingu jako praktyce cyfrowej partycypacji w obszarze dziedzictwa kulturowego. Analizuje przykład polskiej platformy crowdsourcingowej *Otwarte Zabytki*. To projekt otwarty umożliwiający wprowadzanie (edytowanie istniejących lub przygotowanie nowych) opisów na temat historycznych obiektów w Polsce oraz polskich poza granicami kraju. Tekst rozpoczyna się wyjaśnieniem terminu „crowdsourcing” w erze cyfrowej. Następnie podejmuje opis organizacyjnych aspektów platformy *Otwarte Zabytki*. Po wprowadzeniu kluczowych treści kolejne części artykułu skupiają się na analizie działań tzw. tłumy i analizie finansowych implikacji crowdsourcingu w środowisku organizacji pozarządowych.

KEYWORDS: *crowdsourcing, cultural heritage, digital technology, digital participation, participatory culture*

SŁOWA KLUCZOWE: *crowdsourcing, dziedzictwo kulturowe, technologia cyfrowa, cyfrowe uczestnictwo, kultura uczestnictwa*

INTRODUCTION

Digital technology has made it possible to collaborate in any online project (Bednarek, 2013). Participatory culture (Jenkins, 2009) is a unique phenomenon, in which low barriers to civic engagement and egalitarian rules to create a shared public virtual space, where every contribution matters, encourage individuals to involve in a project. This trend is also visible in the cultural heritage sector where an increasing number of galleries, libraries, museums and archives (GLAM) approach crowdsourcing to refine or create online resources. Crowdsourcing is one example of how digital technologies diversify the range of collaboration practices in cultural heritage organizations. The objective of this massive-scale online collaboration is to harness the crowd's wisdom and to include internet users in the process of developing new content. Crowdsourcing has thus emerged as an innovative approach in managing cultural heritage organisations.

Crowdsourcing in cultural heritage organisations has been surely changing the way these organisations work and collaborate with the public. “Not only are they able to carry out more work and expand and advance research, but

are able also to build new communities, have better engagement with users, and foster a shared responsibility to educational resources and cultural heritage. (...) Crowdsourcing has the potential to provide new access points to information, create new collections, involve more people in the work of professional curators and collection owners, inform, educate and ultimately democratise knowledge for the benefit of everyone.” (*JISC Digital Media*) In general, a key advantage of crowdsourcing is its approach towards effective leveraging of collective wisdom to serve heritage organisations.

The paper explores the case of the Polish *Open Monuments* crowdsourcing platform that provides the opportunity for web users to refine the national index of heritage sites online. The article looks at crowdsourcing as a digital participation practice in cultural heritage. Accordingly, the question guiding this paper is what can be learnt about digital participation and how can we shape conditions of crowdsourcing in cultural heritage? I believe that this analysis is timely since cultural heritage organisations (GLAM) all over the world are becoming technically savvy and the issues of integrating various ways of online collaboration with web users are of high importance. To answer the research question delineated above, this paper uses a single case study method based on case selection to offer a single narrative describing and analyzing phenomenon in one case. A case is a “phenomenon of some sort occurring in a bounded context” (Miles, Huberman, 1994, p. 25). The rationale for choosing a single-case approach is that this research investigates a complex phenomenon in the area with immature theoretical insights (Brown, Eisenhardt, 1997). This approach is suitable for rich descriptions based on qualitative data analysis as it allows the researcher to explore a phenomenon holistically recognizing its complexity and context (Yin, 1981; Siggelkow, 2007). This choice is than justified by the strategy to select an information-rich case whose exploration illuminates the question under study. The chosen case is “very special in the sense of allowing one to gain certain insights that other organizations would not be able to provide” (Siggelkow, 2007, p. 20). It is also a unique research opportunity to gain comprehensive understanding of crowdsourcing as a digital participation practice in cultural heritage. This phenomenon has been inaccessible to scientific investigation before. According to Yin (1994) and Siggelkow (2007) this reason on its own justifies a single case study.

UNDERSTANDING CROWDSOURCING IN CULTURAL HERITAGE

The term crowdsourcing has developed on the intersection of a number of scientific disciplines (e.g. management, economy, sociology). The idea of outsourcing a task to the web-based community closely relates to other concepts in the social sciences such as prosumerism (Toffler 1980), user-innovation (Hippel, 1988), open-innovation (Chesbrough, 2003), co-creation (Prahalad, Ramaswamy, 2004). These terms, however, overlap with the crowdsourcing term (Brabham, 2013; Estellés-Arolas, González-Ladrón-de-Guevara, 2012).

Crowdsourcing refers to situations where an organisation (*a crowdsourcer*) announces openly via the web a task to be fulfilled by any web user (*a crowdworker*) who can voluntarily submit his or her proposal to face an issue. In fact, the task could be undertaken by an organisation's employee, however, it might be of great importance to leverage the creativity and wisdom of web users or enthusiasts of a field. Literature profoundly analyses the use of crowdsourcing in the case of business where crowd wisdom is essential to solve a business problem or gain competitive advantage (Kittur et al., 2013; Kleeman et al., 2008; Acar, Ende, 2011; Aitamurto et al., 2011).

Brabham (2013:xxi) identifies the following features that make the distinction between crowdsourcing and related creativity-based processes or commons-based peer production (e.g. Wikipedia):

- top-down management by those charged with serving an organisation's strategic interests,
- shared process of bottom-up, open creation by the crowd,
- locus of control regarding the creative production of goods and ideas is between an organisation and the public.

There are a few approaches to classify crowdsourcing, including the highly transparent taxonomy by Brabham (2013:44–50) presenting four dominant crowdsourcing types based on the kind of problems being solved:

- **knowledge discovery:** An organisation announces an open task via the web to find and collect information into a common location and format e.g. *Open Monuments* or *Wir Waren So Frei. Moments in Time 1989/1990*. It was a crowdsourcing project run by the Deutsche Kinemathek and

the Bundeszentrale für politische Bildung to gather via the online open call private films, images and written memories related to the fall of the Berlin Wall. As the result almost 7,000 items are available online (*Wir waren so frei...*). It is the most widespread crowdsourcing type adopted by cultural organisations. In this case the organisation manages the process of knowledge discovery (what information is needed, its objective etc.).

- **broadcast search:** an organisation tasks a crowd with solving empirical problems (e.g. *InnoCentive* uses this approach to find scientific solutions to difficult puzzles. This is a company that crowdsources innovation problems to talented individuals who compete to provide novel solutions to challenges in e.g. engineering, life sciences, and business. (*InnoCentive*). There are no clear examples from the cultural sector),
- **peer-vetted creative production:** an organisation asks the crowd via the web to create and select creative ideas e.g. *Click! A Crowd-Curated Exhibition*. This was a project of the Brooklyn Museum that invited artists to submit online their photos related to the exhibition's theme "The Changing Faces of Brooklyn" along with an artist's statement. Submitted photographs were judged by the public. The most popular images were exhibited in the museum. (*Exhibitions: Click! A Crowd-Curated Exhibition*).
- **distributed human intelligence tasking** (an organisation tasks the crowd with analyzing large amounts of information e.g. *Amazon Mechanical Turk* which is an online platform that coordinates sets of effortless jobs which cannot be provided by computers as they require human intelligence (e.g. tagging images, responding surveys, rewriting texts, transcribing audio, conducting internet research) (*Amazon Mechanical Turk*). Some tasks can also serve cultural or even artistic purposes e.g. *TheSheepMarket.com* which is Aaron Koblin's collection of 10,000 sheep made by workers of AMT (*TheSheepMarket*).

Brabham refers crowdsourcing to business operation, however, for-profit and non-profit organisations apply crowdsourcing to solve social, ecological or cultural issues. Crowdsourcing in cultural heritage might include text correction, transcription, contextualisation, complementing collections, classification, curation, translation, digitisation, and text encoding (Oomen, Aroyo, 2011, p. 140; McKinley, 2012).

What do crowdsourcing and cultural heritage have in common? Crowdsourcing is seen as a digital form of a long-standing tradition of inviting members of the public to contribute on a volunteer basis. Technology enables them this participation which is a relatively new drift. Working with heritage data can become a gateway experience leading to a better understanding of open data initiatives. Trevor Owens (2014) sees the values and missions of cultural heritage organizations as compatible with the idea of crowdsourcing mainly because of a long history of their collaboration with the public. In the Western academic literature, cultural heritage organisations “with their “open access” ethic, they embraced both digitization and social networking early on.” (Wayne, 2013, p. 3–4). “The crowd” is invited to tag and classify, transcribe, organise and otherwise add value to digital cultural heritage collection content.

The rise of digital technologies combined with widespread access to computers creates a fundamental factor of crowdsourcing. It provides “an environment in which new cultural practices are developed by the public” (Aigrain, 2012, p. 21). This view is backed by Caroline Haythornthwaite for whom “Quantitative change in access has led to qualitative difference in social practices (...). Internet connectivity permits frequent engagement, from anywhere any time, shrinking the turnaround cycle of communication and thereby creating a sense of connection and community with others.” (Haythornthwaite, 2009, p. 2). There is a growing body of literature exploring positive assumptions of open access to online networks in the humanities e.g. “What’s on the menu?”, “Transcribing Bentham”, “Galaxy Zoo” etc. (Ridge, 2014; Raddick et al., 2010). The *Open Monuments* project chosen for consideration in this paper is an experiential undertaking still in progress. It shows the case of digital participation of open networks. This is thus a very interesting case with some regional colours and multifaceted approaches to understand and develop crowdsourcing in this region.

OPEN MONUMENTS AT A GLANCE

The paper focuses on the Polish project entitled *Open Monuments* carried out by the *Digital Centre Project: Poland* which is a non-profit organisation aiming at introducing open models in the public and nonprofit sector. The

Open Monuments project invites every web user to refine or add data about Polish cultural heritage sites which are included into the national index of historical monuments with over 75.000 entries at present (*About Heritage Board of Poland*). The project covers also the Polish cultural heritage sites which are presently outside the administrative borders of Poland, but were within Poland according to the administrative map before the World War 1 or 2.

The index is run by the state agency National Heritage Board of Poland that gathers and spreads information on heritage. However, it does not reflect latest information or changes including geolocation (GPS coordinates), current addresses or date of the foundation of an object etc. The project creates therefore a civic index of historical monuments aiming to its accuracy (e.g. authentic and refined entries online) and discoverability (e.g. the online index is accessible to the public). Furthermore, the data gathered can be used i.a. by any individual, non-profit organisation or by the National Heritage Board of Poland to implement the INSPIRE EU directive (2007).

The project was launched in Spring 2012 with a pilot event (*Digital Summer Community Action*) to refine the details describing historical sites in the index (e.g. town, address, date of founding a monument). It made it possible to test the attractiveness of the project idea. The event was assessed as successful (6.305 refined objects; according to the principle of triple blind review 3.830 objects were confirmed once, 1.768 twice and 707 threefold. Almost 3.000 crowdworkers/volunteers, more than 1.200 individuals joined the Facebook community of *Open Monuments* and regularly shared with the organisers their opinions, comments and novel ideas related to the project development). The *Action* also included offline events (guided tours in several towns in Poland: Krakow, Warsaw, Poznan, Bialystok, Przemysl, Nysa and Koszalin) combined with a range of hackatons focusing on the collaboration upon the civic index of heritage sites.

The *Open Monuments* crowdsourcing platform started in Autumn 2012 and has been freely accessible. Internet users co-create the index by enhancing the accuracy of its entries (they complete missing data, monitor the condition of monuments and develop educational projects including educational offline tours). Since then, web users voluntarily have added hundreds of descriptions

and pictures of historical objects and new objects to the database. In addition, the project team organises diverse offline incentives ranging from workshops for the elderly to the guiding tours to heritage sites.

The project content has been published online on Creative Commons Attribution-Share Alike (CC BY-SA 3.0 license). This license is also used by Wikipedia and lets others remix, tweak, and build upon one's work even for commercial purposes, as long as other users credit you and license their new creations under the identical terms (*About the Licenses*).

The website has adopted the commercial system of Google Maps which shows the geographical location of every historical site in the national index. Before launching the project other web mapping service applications were taken into consideration including the openly licensed map OpenStreetMap (however, it did not cover all regions in Poland well enough) and the official website of the National Heritage Board of Poland (which uses geolocation, however, its server infrastructure has been still technologically improved).

To contribute to the website, users have to create an account or log in via the Facebook profile to add or update any information. Among the partners of the project's pilot phase were the Association of Creative Initiatives "ę" and a number of universities of the third age. They helped to advance a simple internet tool used intuitively by the users of all age groups. The website contains a number of manuals for the youth and seniors to be downloaded as a video or infographic. They clearly guide a new user in contributing to the website.

The web development has made it possible to advance a user-friendly and functional website and improve any technical difficulties emerging in the system. Also additional content elements (e.g. web widgets) were composed to circulate information about the project and to encourage web users to refine the civic index of historical monuments.

The civic index of historical monuments *Open Monuments* has been designed as a tool to be used by any web user to discover monuments in his or her neighbourhood, identify them on the map, monitor the condition of monuments, revise descriptions, add photos and new content related to monuments and – on the fundamental level – to build social networks or social relations amongst people who share the same interests or activities.

The performance of crowds. Who does stand behind “sourcing” and the “crowd”?

There has been a growing body of literature that has drawn attention to the crowdsourcing in cultural heritage. Much focus has been given to case studies of success stories exploring a wide range of aspects related to motivation of users (Eccles, Greg, 2014; Raddick et al., 2010), interface e.g. “Old Weather” (Gura 2013), “Transcribe Bentham” (Causar, Terras, 2014), “What’s on the Menu?” (Lascarides, Vershbow, 2014) or heuristic evaluation of crowdsourcing (McKinley, 2015). Little is known about the process of digital participation in cultural heritage. At least two problems with crowdsourcing in the cultural heritage domain are to be addressed here.

Firstly, there is a problem with the term ‘sourcing’ which is associated with labour/work (in this context digital work) (Prokurat, 2013). While it might be acceptable for commercial purposes to encourage individuals to provide labour (paid crowdsourcing includes distributed human intelligence tasking e.g. Amazon Mechanical Turk, also peer-vetted creative production might be based on financial reward system e.g. Threadless.com), the ethical implications of such methods are worth considering. Non-profit crowdsourcing can be considered as a new mode of meaningful participation and collaboration (a kind of volunteer activity) also in cultural heritage. Trevor Owens suggests that “we think of crowdsourcing not as extracting labour from a crowd, but as a way for us to invite the participation of amateurs (in the non-derogatory sense of the word) – in the creation, development and further refinement of public good.” (Owens 2013: 270).

Secondly, the idea of “crowds” suggests massive-scale online collaboration which is a rather unusual case in non-profit crowdsourcing. There are basically exceptions related to the idea of citizen science where projects attract thousands of volunteers (e.g. Galaxy Zoo). In fact, the “crowds” notion serves as useful shorthand. It is an abstract term that accentuates the anonymity of an indented group of external contributors/web users/volunteers. There are other crowdsourcing-related terms in the literature including ‘community-sourcing’, ‘targeted crowdsourcing’, ‘microvolunteering’ (Ridge, 2014, p. 4), social tagging (Trant, Wyman), citizen scientists (e.g. Zooniverse.org) acknowledging that the crowd is neither large nor truly anonymous. “These terms additionally reflect

the fact that while some cultural heritage crowdsourcing projects are inspired by a desire for greater public engagement, the more specialised the skills, knowledge or equipment required, the more strongly a ‘crowd-sifting’ effect operates as individuals unable to acquire the necessary attributes fall out from the pool of potential participants” (Ridge, 2014, p. 4). Anyone is invited to take part in crowdsourcing, however, a dedicated community usually contributes to improve the resources for others to use. The misleading conception of the “crowds” might be intentional to catch the attention of anyone (Scholz, 2008).

Do we know much about “the crowd” in the case of *Open Monuments*?

Obligatory signing-up makes it possible to figure out the quantity of crowdworkers involved in co-creating the website. Presently there have been more than 8.750 website users (August 2014). This number shows only an approximate quantity of contributors (some users might have registered twice or more). The online registration system does not gather any details about the users which would be a base to build user profiles. The group of crowdworkers contributing to the website is not homogeneous. Crowdworkers demonstrate diverse activity levels with about 20 very active individuals who are passionate about historical monuments and devote their time to upgrading the catalogue of monuments (up to 8 hours a day) and about 100 relatively active individuals who contribute on an irregular basis. Not only does the number of updated information about monuments indicate user activity, but also the quality and complexity of entries is the evidence for user activity. By now users have succeeded to add about 4.600 photos (their own photos or photos from other sources published on CC license), and to include updated description of more than 1.100 monuments (there are 76.809 registered monuments, and only 9.500 were refined since 2012). To foster relationships among web users offline events including hackathons, design thinking workshops and guided tours to heritage sites are organised. They play an important role in giving the best possible start in creating a social network linking the group of participants of the *Open Monuments* project.

The statistics are too poor to draw any serious conclusions, however, some tendencies can be seen here. First of all, there are about 150 active crowdworkers in total out of the group of 8.750. It means that *Open Monuments* is not a massive-scale online collaboration project. It is addressed

to a wide audience (a tool of promotion), but only a scarce part of it engages in the project (actively or from time to time). It is far more a kind of ‘targeted-volunteering’ with a dedicated community in mind.

The project is particularly popular among local communities – libraries, local authorities and schools. Individuals who possess their own archives including photos and other documents about local history show the greatest interest in sharing their resources. In future, there are plans to appoint local leaders to stimulate and motivate web users to participate in the project.

A weak point of the *Open Monuments* platform is its system of gathering information about contributors which needs to be developed. In fact, the structure of the group is not assessed yet, motives to take up some tasks online here are also not known yet. The system allows gathering information about the quantity of contributors what is, however, not sufficient to draw any general conclusions.

The social importance (the project is undertaken for the common good) and educational value of the project (history education, web literacy, civic engagement, legal aspects including the use of CC licences) should encourage web users to get involved in the *Open Monuments* project. Not only do platform builders pay attention to the educational value of the website, but also they attempt to innovatively teach about historical sites. The website provides incentives for users which additionally make it more attractive to external users. Among them are: mobile applications (for Android), cut-out models of monuments (to download), lesson plans for teachers, incentives for seniors (includes a demo movie, banners for www, information brochures), graphics to download (posters, banners, logo), blog with publications, news on offline events etc., widgets (map widget, ‘add a monument’ widget). What is more, the platform builders intend to develop further incentives based on gamification strategies to engage users in content creating.

FINANCIAL IMPLICATIONS OF CROWDSOURCING IN THE NONPROFIT ENVIRONMENT

Open Monuments is run by the Digital Centre Project: Poland that as a non-profit organisation does not have permanent funds guaranteed from public subsidies. Because of it the project team regularly applies for

external grants to support the project. By now, the majority of the founders of *Open Monuments* include state agencies that develop grant schemes (*Open Monuments*, [www](http://www.openmonuments.org)), that is, Polish Ministries of Culture and National Heritage, Foreign Affairs, and Labour and Social Policy. This initiative was also supported by the charities including CEE Trust, Orange Foundation, and Foundation for Polish-German Cooperation.

The dominance of public funding is a very characteristic feature of the Polish system of financing non-profit organisations. Polish NGOs rely mostly on public funding. However, in a time of austerity, national and local government tends to cut funding for culture which also comes at a time when private sector funding and individual philanthropy decreases, although in Poland this kind of funding has always played a marginal role in the budgets of NGOs (Przewłocka, Adamiak, Herbst, 2013, pp. 103–106). Non-profit organisations operate in Poland in the resource-scarce environment, they often draw their resources from similar sources (national and local public grants). The analysis of the entire third sector income in Poland shows that nearly half of it consists of public money (Przewłocka, Adamiak, Herbst, 2013, p. 106).

Another reason is the structure of costs ineligible to be covered from public funding. The *Open Monuments* example shows that funds from public grant programmes usually do not cover the costs of project management (e.g. administrative costs, staff costs and equipment purchase). It obviously forms a barrier to develop a project. The logic of this approach is to secure basic costs of project management from other than public sources (a non-profit organisation's own budget, private sponsors etc.). In the case of *Open Monuments* the most critical budget category includes technical items including external developer, programmer support, usability, hosting, web service administration and maintenance, graphic design (applications and promotion materials), and project management. The public grant policy assumes that e.g. staff costs are not given the priority to be covered. In fact, donations from corporate sponsors constitute a marginal part of budgets of non-profit organisations in Poland. So far the *Open Monuments* project has not been financed by any corporate sponsor, however, the project team intends to ask business entities to support the project.

The findings suggest that crowdsourcing might be than adopted by non-profit organisations to solve problems in two basic situations: first, when public grants belong to a dominant part of financing their operation and second, when the policy of public grantmakers excludes the possibility to cover staff costs.

Crowdsourcing does give an opportunity to outsource some project tasks to a crowd. An organisational motivation to launch a crowdsourcing-based project usually depends on other than financial aspects, however, this way of managing a project shows – at least in Poland – great potential to tackle financial challenges facing the non-profit sector. It is worth to consider the situation, when a part of work (e.g. data collection, simple analysis) would be done by an external worker (a crowdworker) expecting no financial incentive. This model allows seeing crowdsourcing as an effective tool to be used by cultural non-profit organisations to solve the problem of financing staff costs while conducting a project.

CONCLUSIONS

The organisational environment of cultural heritage has evolved significantly in recent years. Cultural heritage organisations are greatly involved in the changes initiated by new Internet-based services and digitization. The Internet has also affected the structure of participation in cultural services. The Internet's impact (both technological impact as well as participatory culture) has been the most influential factor putting into question old participation practices. So, the web lays the foundation for active participation (e.g. content creation) in cultural heritage. In this situation, the Internet enables not only access to, but also the modification and dissemination of many reproductions of cultural heritage products (*crowdsourcing*).

The paper provides a window of understanding into the practice of crowdsourcing in cultural heritage organisations. It comprehensively reviews the *Open Monuments* project to explore the mechanisms of digital participation. The project is built on a basic frame, that is, on the public data from the Polish National Inventory of Historical Monuments which are refined by the amateurs online. *Open Monuments* is an open project with a focus on refining description about historical sites in Poland and

Polish historical sites abroad. It is a tool serving to a wide group of audience anytime and anywhere. Crowdsourcing can be seen as a kind of long-standing tradition of inviting the public to contribute on a volunteer basis. Crowdsourcing is in general based on active involvement of the so called *crowd*. In cultural heritage it means to empower a group of web users to improve the data and develop ways of making use of them. This form of online engagement is also a promising tool to enhance the sense of civic responsibility for heritage.

In thinking further about crowdsourcing in cultural heritage it is important to face additional challenges. Firstly, the web and technology are changing with an extreme rapidity and it is significant to reflect not only on how they are presently being used, but how they might be used in future. Secondly, the main objective of crowdsourcing in cultural heritage is to create novel ways of engagement with an emphasis on empowering the audience. It is vital to ask the question whether the audience might be overwhelmed by possible impacts of crowdsourcing including the dominance of online entertainment in everyday life, information overload and illusory sense of belonging to a social network.

Thirdly, are there any examples showing regional particularities of crowdsourcing? Is it the same phenomenon worldwide? Are web users apparently so similar in their virtual behaviours that there is no need to explore this topic in relation to any geographic criteria? These questions need to be explored as future research directions.

References

- About Heritage Board of Poland*. Available online at: <http://www.nid.pl/en/About_heritage_board_of_Poland/>. Accessed on 23.09.2015.
- About the Licenses*. Available online at: <<http://creativecommons.org/licenses/?lang=en>>. Accessed on 23.09.2015.
- Acar, O. and Ende, J. (2011). *Motivation, Reward Size and Contribution in Idea Crowdsourcing*. Paper presented at the Dime-Druid Academy Winter Conference 2011 on Comwell Rebild Bakker. Aalborg, Denmark.
- Aigrain, P. (2012). *Sharing. Culture and the Economy in the Internet Age*. Amsterdam: University Press, Amsterdam.

- Aitamurto, T. et al. (2011). *The Promise of Idea Crowdsourcing – Benefits, Contexts, Limitations*. White paper, June 2011. Available online at: <<http://www.crowdsourcing.org/document/the-promise-of-idea-crowdsourcing--benefits-contexts-limitations/5218>>. Accessed on 23.09.2015.
- Amazon Mechanical Turk*. Available online at: <<https://www.mturk.com/mturk/welcome>>. Accessed on 23.09.2015.
- Bednarek, J. (2013). *Nowe wyzwania mediów cyfrowych w społeczeństwie wiedzy*. In: A. Andrzejewska et al., *Człowiek w świecie rzeczywistym i wirtualnym*. Wydawnictwo Wyższej Szkoły Gospodarki Euroregionalnej im. Alcide De Gasperi, Józefów, (University of Euroregional Economy in Józefów-Warsaw).
- Brabham, D.C. (2013). *Crowdsourcing*, MIT Press Essential Knowledge, Cambridge.
- Brown, S. and Eisenhardt, K. (1994). *The Art of Continuous Change: Linking Complexity Theory and Time-Paced Evolution in Relentlessly Shifting Organizations*. "Administrative Science Quarterly" 42, 1, pp. 1–34.
- Causser, T. and Terras, M. (2014). *Many hands make light work. Many hands together make merry work: Transcribe Bentham and crowdsourcing manuscript collections*. In: M. Ridgem (ed.), *Crowdsourcing our Cultural Heritage*. Ashgate.
- Chesbrough, H. (2003). *Open Innovation: The New Imperative for Creating and Profiting from Technology*. Harvard Business School Press, Boston.
- Eccles, K. and Greg, A. (2014). *Your Paintings Tagger: Crowdsourcing descriptive metadata for a national virtual collection*. In: M. Ridge (ed.), *Crowdsourcing our Cultural Heritage*. Ashgate.
- Estellés-Arolas, E. and González-Ladrón-de-Guevara, F. (2012). *Towards an Integrated Crowdsourcing Definition*. "Journal of Information Science", 38 (2), pp. 189–200.
- Exhibitions: Click! A Crowd-Curated Exhibition*. Available online at: <<http://www.brooklynmuseum.org/exhibitions/click/>>. Accessed on 23.09.2015.
- Gura, T. (2013). *Citizen Science: Amateur experts*. "Nature", pp. 496, 259–261.
- Haythornthwaite, C. (2009). *Online Knowledge Crowds and Communities*. Paper presented February 2009 at the International Conference on Knowledge Communities, University of Nevada, Reno. Available online at: <https://www.ideals.illinois.edu/bitstream/handle/2142/14198/Online%20Knowledge%20Crowds%20and%20Communities_Reno_2009.pdf?sequence=2>. Accessed on 23.09.2015.
- Hippel, E. (2006). *The Sources of Innovation*, Oxford University Press, New York/Oxford.
- Innocentive*. Available online at: <<https://www.innocentive.com/>>. Assessed on 23.09.2015.

- INSPIRE, Infrastructure for Spatial Information in the European Community. Available online at: <<http://inspire.ec.europa.eu/>>. Accessed on 23.09.2015.
- JISC Digital Media. Available online at: <<http://www.jiscdigitalmedia.ac.uk/guide/Crowdsourcing/>>. Accessed on 23.09.2015.
- Kittur, A. et al. (2013). *The Future of Crowd Work. CSCW'13 Proceedings of the 2013 Conference on Computer Supported Cooperative Work*. New York, ACM, pp. 1301–1318. Available online at: <<http://hci.stanford.edu/publications/2013/CrowdWork/futureofcrowdwork-cscw2013.pdf>>. Accessed on 23.09.2015.
- Kleemann, F. et al. (2008). *Un(der)paid Innovators: The Commercial Utilization of Consumer Work through Crowdsourcing*. "Science, Technology & Innovation Studies", North America, 4 (1), pp. 5–28.
- Lascarides, M. and Vershbow, B. (2014). *What's on the menu? Crowdsourcing at the New York Public Library*. In: M. Ridge, *Crowdsourcing our Cultural Heritage*. Ashgate.
- McKinley, D. (2015). *Heuristics to support the design and evaluation of websites for crowdsourcing the processing of cultural heritage assets*. Ph.D. findings report. Available online at: <<http://nonprofitcrowd.org/wp-content/uploads/2015/04/McKinley-crowdsourcing-heuristics-March20151.pdf>>. Accessed on 23.09.2015.
- McKinley, D. (2012). *Practical management strategies for crowdsourcing in libraries, archives and museums*. Available online at: <<http://nonprofitcrowd.org/wp-content/uploads/2014/11/McKinley-2012-Crowdsourcing-management-strategies.pdf>>. Accessed on 23.09.2015.
- Miles, M. and Huberman, M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook*, SAGE Publications.
- Oomen, J. and Aroyo, L. (2011). Crowdsourcing in the cultural heritage domain: opportunities and challenges. *C&T '11 Proceedings of the 5th International Conference on Communities and Technologies*, pp. 138–149. New York, ACM.
- Open Monuments*. Available online at: <<http://otwartzabytki.pl/>> and <<http://centrumcyfrowe.pl/projekty/otwarte-zabytki/>>. Accessed on 23.09.2015.
- Owens, T. (2013). Digital Cultural Heritage and the Crowd. *Curator: The Museum Journal*. 56 (1).
- Owens, T. (2014). *Making Crowdsourcing Compatible with the Missions and Values of Cultural Heritage Organisations*. In: M. Ridge (ed.) *Crowdsourcing our Cultural Heritage*, Ashgate.
- Prahalad, C.K. and Ramaswamy, V. (2004). *Co-Creation Experiences: The Next Practice Invalue Creation*. "Journal of Interactive Marketing", 18 (3), pp. 5–14.

- Prokurat, S. (2013). *Work 2.0: nowhere to hide*. North Charleston, Wydawnictwo Wyższej Szkoły Gospodarki Euroregionalnej im. Alcide De Gasperi, Józefów (University of Euroregional Economy in Józefów-Warsaw).
- Przewłocka, J. et al. (2013). *Podstawowe Fakty o Organizacjach Pozarządowych. Raport z badania 2012*. Warszawa, Stowarzyszenie Klon/Jawor.
- Raddick, J. et al. (2010), *Galaxy zoo: Exploring the motivations of citizen science volunteers*. "Astronomy Education Review", 9 (1).
- Ridge, M. (2014). *Crowdsourcing our Cultural Heritage*. Ashgate.
- Scholz, T. (2008). *Market Ideology and the Myths of Web 2.0*. "First Monday", 13 (3). Available online at: <<http://firstmonday.org/article/view/2138/1945>>. Accessed on 23.09.2015.
- Siggelkow, N. (2007). *Persuasion with Case Studies*. "Academy of Management Journal", 50 (1), pp. 20–24.
- TheSheepMarket*. Available online at: <<http://www.aaronkoblin.com/work/thesheep-market/>>. Accessed on 23.09.2015.
- Trant, J. and Wyman, B. *Investigating social tagging and folksonomy in art museums with steve.museum*. Available online at: <<http://www.ambuehler.ethz.ch/CDstore/www2006/www.rawsugar.com/www2006/4.pdf>>. Accessed on 23.09.2015.
- Wayne, C. (2013). *Best of Both Worlds. Museums, Libraries, and Archives in a Digital Age*. Smithsonian Institution, Washington. Available at: <http://www.si.edu/content/gwc/BestofBothWorldsSmithsonian.pdf>>. Accessed on 23.09.2015.
- Wir waren so frei...* Available online at: <https://www.wir-waren-so-frei.de/index.php/Splash/Index/lang/de_DE/lang/en_US>. Accessed on 23.09.2015.
- Yin, R. (1994). *Case study research: Design and methods*. Sage Publications, Newbury Park.
- Yin, R. (1981). *The Case Study Crisis: Some Answers*. "Administrative Science Quarterly" 26 (1), pp. 58–65.
- Zooniverse.org. Available online at: <<https://www.zooniverse.org/?lang=en>>. Accessed on 23.09.2015.

