Małgorzata Kowalska
Institute of Information Science and Book Studies
Nicolaus Copernicus University
e-mail: koma@umk.pl

Crowdsourcing in Libraries

Abstract: Crowdsourcing is the latest trend in innovation. The term means separation of one organization area and putting it into the hands of the crowd (an organized community) in the form of an open call. The community can be formed both by high class professionals and amateurs who, having the tools to communicate and exchange views, join in the clearly defined tasks. Currently, crowdsourcing is implemented primarily in companies and NGOs. Since the implementation of solutions based on crowdsourcing is quite straightforward, it is also used in public and social activities, including ventures initiated by archives, museums and libraries. This article presents the idea of crowdsourcing as well as some examples its application in libraries.

Keywords: collective intelligence, crowdsourcing, libraries, wisdom of the crowd

Introduction

With the development of Web 2.0 concepts, promoting the idea of openness, knowledge sharing and global cooperation, the perception of the Web user has changed considerably. The customer perceived as a receiver of information and a consumer in the era of the First Generation Internet, has begun to be seen as a partner, entrusted with the role of the wizard of the content of websites, engaged in co-promoting products and favorite brands, called a prosumer. The exchange of goods (often referred to as *the gift economy*) or the value of co-creation with customers, both in the form of individualized exchange of values with the organization and the activities aimed at other clients, have since then not only been a significant feature of the economic activity in the real world but have also set new forms of cooperation in cyberspace. The growth of the Internet and the popularization of information and communication technology have been successfully used by some companies and enterprises that introduced electronic document exchange services, e-payment platforms and deployed solutions based on telework. While initially the main method to support internal activities of the organization was primarily a network resource exploration, the pressure to improve competitiveness and increase the effectiveness of this approach has forced a change. Therefore, the entrepreneurs began to look at possibilities of using the intellectual potential of online communities. Gaining knowledge from blogs and social networks led to tangible results in the form of strengthening relationships with customers in relation to such indicators

as: knowledge of the company's offer, taking into account the offer made by customers choice, conversion, satisfaction and loyalty[1]. Economic benefits, including the reduced costs (marketing and those related to the employment of highly qualified specialists), resulting from the use of knowledge and skills of the Internet users, meant that online communities began to delegate tasks that until now were performed by personnel of the respective companies or organizations. At the same time, *wikinomics*, *wisdom of the crowds*, *collective intelligence*, *peer production*, *commons based peer production* or *crowdsourcing* started to be used as terms relating to the exploitation of the potential of Internet users. In the last six years, crowdsourcing has become very popular, and all the initiatives engaging the community in the activities of an organization[2] have become a mechanism commonly used as a foundation of trust between the customer and the supplier. Cultural institutions, including libraries, museums and archives have started to adapt this form of cooperation with Web users' needs.

The idea of crowdsourcing

It was in 2006 when the term *crowdsourcing* was used for the first time by Jeff Howe in his article *The Rise of Crowdsourcing* published in the "Wired" magazine. J. Howe described the use of community engagement, its talent, knowledge and skills to solve problems and to optimize the operating costs of companies[3]. On the basis of numerous examples from the business sector, Howe showed that the phenomenon of using crowd wisdom does not delegate a task to an internal team or employees of the company, but to an undefined group of people in the form of an open call. More and more often, this undefined group is an online community consisting of amateurs and enthusiasts, equipped with the right tools for communication and exchange of ideas, which generates a number of solutions, reviews them and selects the best of options. Then a company which delegated the task, awards solutions (financially or in goods), implements them and generates profit[4].

Although the determinant of the development of crowdsourcing (especially Internet crowdsourcing) were changes that have occurred and continue to occur on the Internet – especially the development of the concept of Web 2.0 and the flourishing movement in the

[1] T. Doligalski, *Współtworzenie wartości z klientami zorientowane na innych klientów*, "E-mentor" 2011, no. 1 (38), p. 72–73.
[2] In Poland, for instance: "Puma Create" of Procter & Gamble, "Zaprojektuj własną puszkę Redds" ("Design Your own Redds Can") of Kampania Piwowarska, "Odkapsluj Wyobraźnię" ("Open Your Imagination") of Tymbark, "Wymyśl nowy smak!" ("Create a New Taste") of Frito-Lay Poland, "Podaj dalej" ("Pass on") of Bank BPH S.A., "Bank Pomysłów" ("Ideas Bank") of Bank Zachodni Wielkopolskiego Banku Kredytowego.
[3] J. Howe, *The Rise of Crowdsourcing*, "Wired" 2006, vol. 15, no. 6, at http://www.wired.com/wired/archive/14.06/crowds.html, accessed 30 September 2012.
[4] Ibid.

area of open software inventions[5] – the phenomenon of crowdsourcing should not be identified with any community existing in the Web. In social movement the public can communicate with each other and express their opinions on the content of information resources, in addition to the already existing content, tagging it or creating entirely new content. This, however, has an individual dimension and does not lead to achieving a purpose common with the other users (apart from just sharing the knowledge). Crowdsourcing involves collective interaction and requires more involvement, a different level of effort, time and intellectual contribution[6].

Crowdsourcing should not be seen as a synonym for open source and wiki software. The latter refers to software and develops spontaneously, usually without overriding organizational control. The developed solutions are good for the whole community, but primarily bring prestige to individual authors' programs. Crowdsourcing, although refers to principles of the open source, is used in areas other than software development. It is rather a concept of innovation management, combining creativity with traditional management strategies based on the use of collective intelligence of Web users for a particular purpose. It is, therefore, focused on activities of the organization, the way to solve a problem announced on- or offline, serving the company defining the problem and supervised by it[7].

Typology of crowdsourcing

The first to point out various possibilities of using the intellectual potential of the community was the creator of the term crowdsourcing – J. Howe. In his article *Crowdsourcing. Why the Power of the Crowd is Driving the Future of Business* he identified the following types of crowdsourcing:

[5] Ł. Gajewski, *Wykorzystanie koncepcji mądrości tłumu do przyspieszenia tempa rozwoju technologicznego*, "E-mentor" 2010, no. 5 (37), p. 61.
[6] R. Holley, *Crowdsourcing: How and Why Should Libraries Do It?*, "D-Lib Magazine" 2010, vol. 16, no. 3/4, at http://www.dlib.org/dlib/march10/holley/03holley.print.html, accessed 30 September 2012.
[7] D. C. Brabham, *Crowdsourcing: A Model for Leveraging Online Communities*, Daren C. Brahbam Ph. D. (Weblog, 18 March 2011), at http://dbrabham.files.wordpress.com/2011/03/brabham_handbook_crowd sourcing.pdf, accessed 30 September 2012.

- collective intelligence (wisdom of the crowd) – solving problems through the crowd (e.g. 99designs.com, YourEncore.com, NineSigma.com),
- crowdcreation (or user-generated content) – the use of the creative potential of users (e.g. Stockphoto.com, Youtube, Wikipedia),
- crowdvoting – asking Internet users to choose best outsourcing solutions, gathering opinions and judgments on the subject (e.g. Threadless.com, Digg.com, Coolsw.intel.com),
- crowdfunding – Community fundraising (e.g. KickStarter.com, MyFootballClub.co.uk, Sellaband.com)[8].

On the basis of the typology proposed by Howe, a number of other approaches to crowdsourcing have developed. Among the taxonomical criteria taken into account by the researchers are, among others, the type of communities taking part in it[9], the nature of collaboration and the method of evaluating the results[10], the requirements for such ventures[11], the types of processes and capabilities of isolated platforms[12], and finally the point of view of considered problems[13]. Created classifications and specifics of network projects involving Web users in new areas resulted in expanding the directory of crowdsourcing types:

- microwork – performing small tasks for a small gratification to conduct larger projects (e.g. clickworker.com, Taskcn.com, Amazon Mechanical Turk),
- inducement prize contests – Web-based idea competitions, or inducement prize contests often consist of generic ideas, cash prizes, and an Internet-based platform to

[8] J. Howe, *Crowdsourcing. Why the Power of the Crowd is Driving the Future of Business*, The International Achievement Institute, at http://www.bizbriefings.com/Samples/IntInst --- Crowdsourcing.PDF, accessed 30 September 2012.
[9] M. Vukovic, C. Bartolini, *Towards a Research Agenda for Enterprise crowdsourcing*. In: *Leveraging Applications of Formal Methods, Verification, and Validation*, ed. by T. Margaria, B. Steffen, Berlin/Heidelberg 2010, pp. 425–434 (Lecture Notes in Computer Science; 6415).
[10] A. Doan, R. Ramakrishnan, A. Y. Halevy, *Crowdsourcing systems on the World-Wide Web*, "Communications of the ACM" 2011, vol. 54, no. 4, pp. 86–96, also available on World Wide Web, at http://cacm.acm.org/magazines/2011/4/106563-crowdsourcing-systems-on-the-world-wide-web/fulltext, accessed 30 September 2012.
[11] M. Vukovic, *Crowdsourcing for enterprises*. In: *Services 2009: 2009 IEEE Congress on Services: Los Angeles, CA, 6–10 July 2009: proceedings, Part 1*, ed. L.-J. Zhang, Piscataway, cop. 2009, s. 686–692; also available for purchase on World Wide Web, at http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=5190710, accessed 30 September 2012.
[12] D. Geiger, S. Seedorf, M. Schader, *Managing the Crowd: Towards a Taxonomy of Crowdsourcing Processes*. In: *Proceedings of the Seventeenth Americas Conference on Information Systems, Detroit, Michigan, August 4th–7th 2011*, Detroit/Michigan 2011, p. 1–11; also available on World Wide Web, at http://schader.bwl.uni-mannheim.de/fileadmin/files/publikationen/Geiger_et_al._-_2011_-_Managing_the_Crowd_Towards_a_Taxonomy_of_Crowdsourcing_Processes.pdf, accessed 30 September 2012.
[13] D. C. Brabham, op. cit.

facilitate easy idea generation and discussion (e.g. Local Motors.com, IdeaConnection.com, IBM Jam Events)[14].

Since in recent years the value of customer co-creation has become a very fashionable trend, the Internet began to form neologisms trying to name different aspects of the use of the crowd (as *crowdslapping*, *crowddumping*, *crowdblanking*, *crowdsharing*, *crowdism*, *crowdslang*, *crowdstorming*, *crowdcontrol*, *crowdtesting*)[15], and also terms semantically similar to crowdsourcing (already mentioned in this article: *peer production*, *commons based peer production*, *person-to-person lending*, *open innovation*)[16].

Areas of crowdourcing application

Crowdsourcing is a phenomenon so flexible that it can be used in different areas of activity, both in commercial initiatives and social activities. The confirmation of this thesis is a long list (though incomplete) of crowdsourcing projects carried out today across the globe, regularly updated on the pages of the English "Wikipedia"[17] – which is after all the most recognizable service created by the crowd. Even a brief overview confirms the multiplicity and diversity of initiatives: from astronomy (e.g. Galaxy Zoo), medicine (e.g. AED4), law (e.g. LawPivot), business (e.g. Cisco), computer science (e.g. ComCrowd) through e-commerce (e.g. Wishabi), catering (e.g. Bar Database) and advertising (e.g. Zooppa), to the typical Web 2.0 (Wikipedia, Facebook). Among these projects, there are also initiatives pursuing various forms of crowdsourcing, such as Lanzanos (crowdfunding), Local To Us (crowdvoting), Innovation Exchange (collective intelligence), Mindpixel (crowdcreation) and involving different categories of Web users, including owners of companies and enterprises (e.g. Squadhelp), researchers (e.g., InnoCentive), software developers (e.g. Starbytes), consumers (e.g. HuMuch), designers (e.g. Choose), fans (e.g. Tribevine), students (e.g. Students of Fortune), mobile users (e.g. Mob4Hire), people looking for missing family members (e.g. Katrina PeopleFinder Project), etc. Although in the vast minority, projects launched by non-profit institutions, including libraries (e.g. Civil War Diaries & Letters Transcription Project), museums (e.g. FromThePage) and archives (e.g. Citizen Archivist Dashboard) are also present on the list.

[14] *Crowdsourcing*. In: *Wikipedia, the free encyclopedia*, at http://en.wikipedia.org/wiki/Crowdsourcing, accessed 30 September 2012.
[15] More: J. Howe, *Neo Neologism*, Crowdsourcing: Why the Power of the Crowd Is Driving the Future of Business (Weblog, 16 June 2006), at http://www.crowdsourcing.com/cs/2006/06/neo_neologisms.html, accessed 30 September 2012.
[16] T. Doligalski, op. cit., p. 72.
[17] *List of crowdsourcing projects*. In: *Wikipedia, the free encyclopedia*, at http://en.wikipedia.org/wiki/List_ of_crowdsourcing_projects, accessed 30 September 2012.

Implementation of crowdsourcing in libraries – some examples

Libraries seem to be naturally predisposed to use crowdsourcing methods. Modest budgets, as well as a small number of employees are a common obstacle in launching projects, especially those related to digitization. On the other hand, they are widely trusted and granted public support, and thus have experience of engaging volunteers.

The topic of crowdsourcing in librarianship is a kind of novelty. While still its major displays can be traced to various social and promotional campaigns carried out by libraries in the traditional way (competitions, meetings with readers, book collection and book adoptions), advanced projects, engaging the community to solve specific problems in libraries or using ideas generated by community on a larger scale can be found only in the development phase.

The "Distributed Proofreaders" platform launched in 2002 by the Distributed Proofreaders is considered to be the first crowdsourcing project connected with librarianship and especially with libraries collections. The main task of the company created in 2000 was to support the digitization of books in the public domain for resources intended for "Project Gutenberg"[18]. With time, however, its activities took such proportions that it has become a major supplier of content for the project (although in 2006, it became a separate legal entity). Distributed Proofreaders platform makes it possible to convert digitized texts into e-books. Each scanned book is separated into individual pages, which facilitates simultaneous access of many users to make corrections. The scanned text is then processed using the OCR technology. After that, both the scanned pages and the resulting text are presented to the volunteers on one screen. In this way it is possible to compare texts easily and correct them "leaving" them on the Web in the same place (to send and access on the same website). Another user sees the results of work of its predecessor and can correct them if necessary. The book undergoes the process of formatting twice, but with the use of the same interface. After the correction procedure, using the post-processor (a special type of software), all pages are converted to e-books, which are then sent to the "Project Gutenberg" archive or are available in a way that users can make comments when they notice errors (smooth reading)[19]. The project generates interest of the Internet users, as prove the following results: 30,794 – Projects Created, 27,273 – Projects Proofread, 24,133 – Projects Post-Processed, 23,782 –

[18] *DP: Welcome*, Distributed Proofreaders, at http://www.pgdp.net/c/, accessed 30 September 2012.
[19] Ibid.

Projects Posted to Project Gutenberg. In just one week the activity statistics indicate about one thousand volunteers who make corrections for almost 40 books[20].

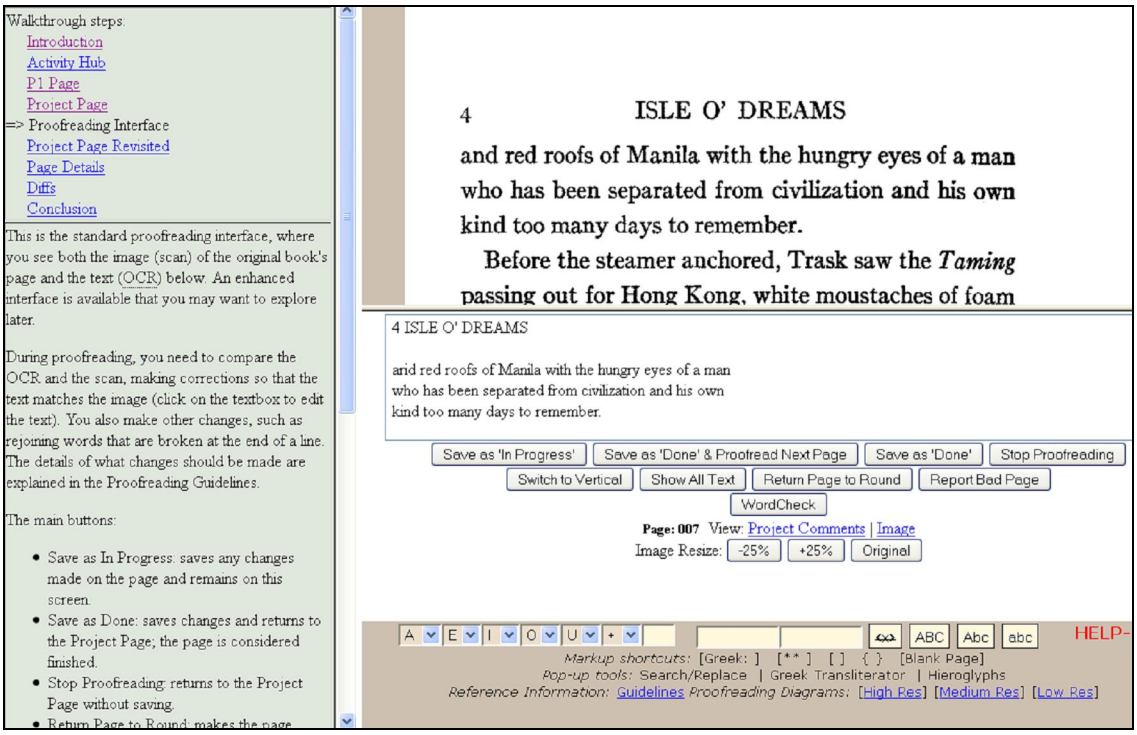


Figure 1. *Distributed Proofreaders* – The standard proofreading interface

Source: *Distributed Proofreaders*, at http://www.pgdp.net/d/walkthrough/04_Proof.htm, accessed 30 September 2012.

Precursors in initiating strictly library crowdsourcing projects are Australian libraries. In 2006–2008, the National Library of Australia launched two large-scale projects: "Picture Australia" and "Australian Historic Newspapers". In the first project Web users were invited to submit photos on the theme of Australia. Initially, the pictures could be sent to the Flickr platform where two topical categories had been created: "Australia Day" and "People, Places and Events". Then the object metadata and thumbnails were transferred each week to a separate collection, bringing together photos from more than 50 cultural institutions both in Australia and abroad (www.pictureaustralia.org). In June 2008, the entire resource, with over 55 thousand objects was transferred to the site Trove[21]. Users can still add photos via Flickr

[20] *Statistics Central*, Distributed Proofreaders, at http://www.pgdp.net/c/stats/stats_central.php, accessed 30 September 2012.
[21] R. Holley, op. cit.

platform, in which – to distinguish it from the basic design – a special group "Trove: Australia in Pictures" was singled out[22].

The other project involves asking Australian users to identify and proofread old newspapers (from years 1803 to 1954) scanned with OCR technology. The project was launched in 2008, and two years later had more than 12 million lines of text corrected by thousands of users[23]. Statistics published on the project website show its unwavering popularity – per month, there are around 800 different types of work undertaken by users[24]. At the end of 2011, the number of fully searchable articles available similarly to the previous project, also from the Trove, was almost 40 million[25].

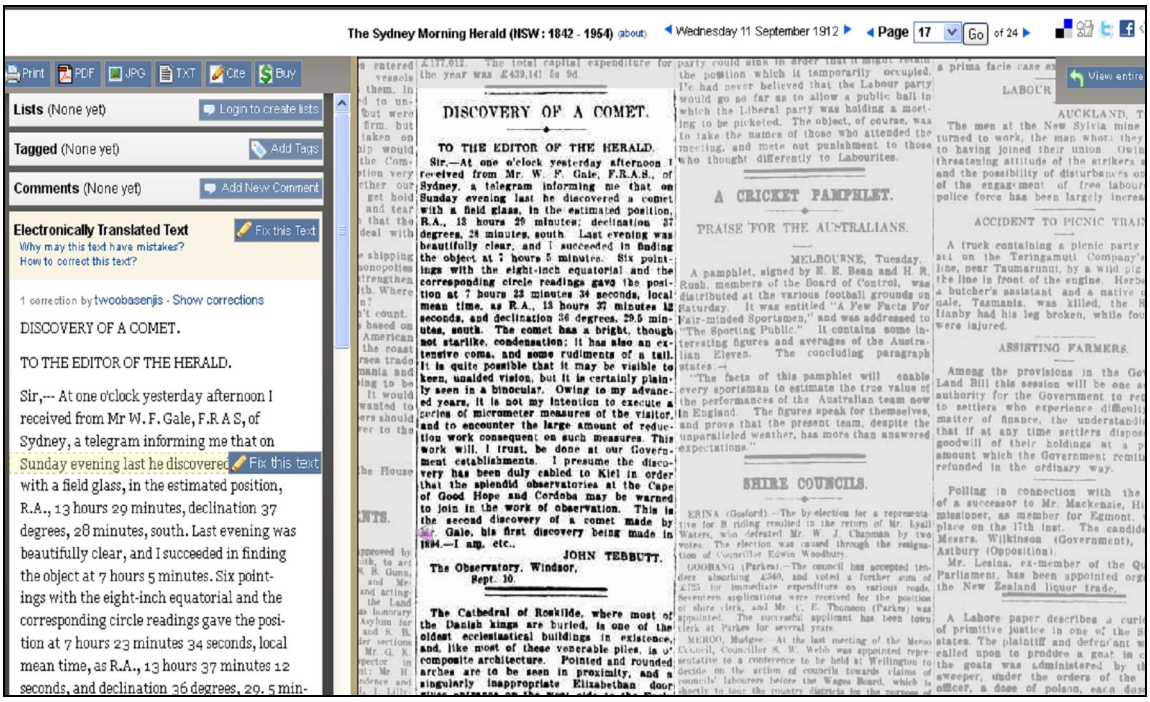


Figure 2a. *Australian Historic Newspapers* – example of text before correction

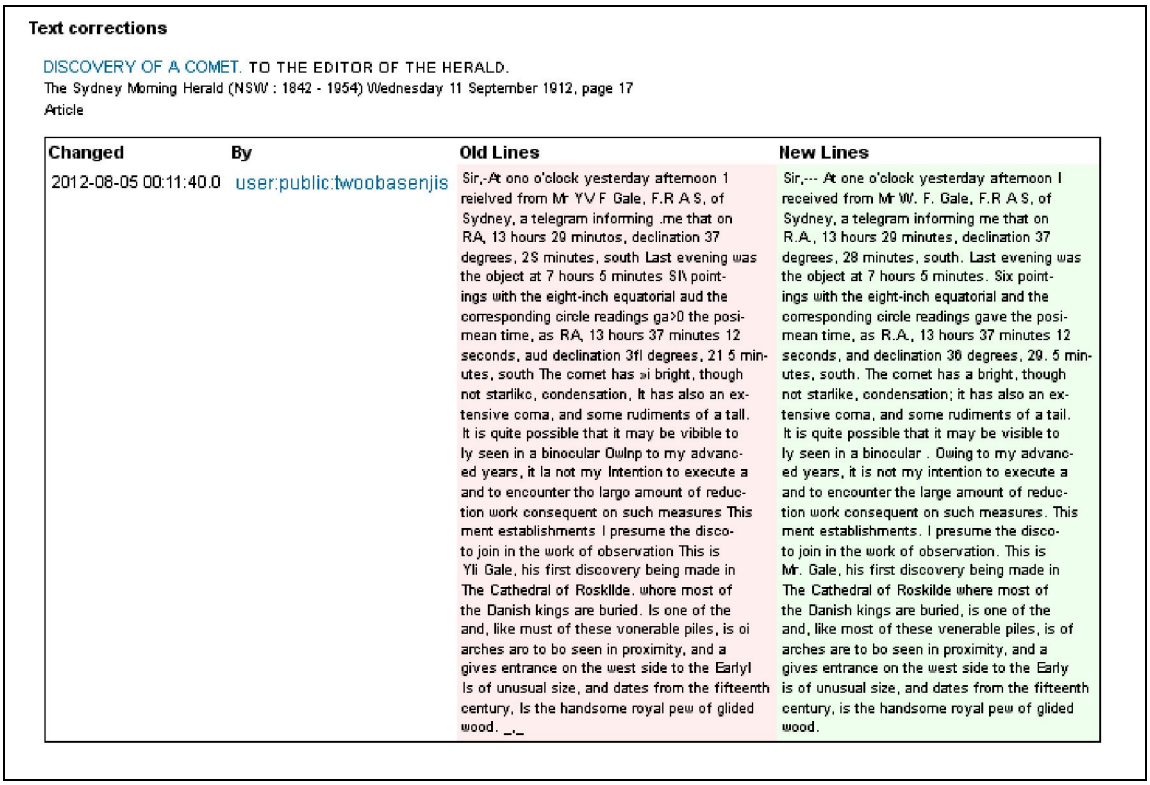
Source: *Trove*, at http://trove.nla.gov.au/ndp/del/article/15331352, accessed 30 September 2012.

[22] F. Hooton, *PictureAustralia and the flickr Effect*, "Gateways" April 2006, no. 80, at http://pandora.nla.gov.au/pan/11779/20060524-0000/www.nla.gov.au/pub/gateways/issues/80/story01.html, accessed 30 September 2012; *Australian pictures in Trove*, Trove, at http://trove.nla.gov.au/general/australian-pictures-in-trove, accessed 30 September 2012.

[23] More: R. Holley, *Many Hands Make Light Work: Public Collaborative OCR Text Correction in Australian Historic Newspapers*, [Canberra] 2009, also available on World Wide Web, at http://eprints.rclis.org/bitstream/10760/12907/1/ANDP_Many_Hands.pdf, accessed 30 September 2012; Ead., *How Good Can It Get? Analysing and Improving OCR Accuracy in Large Scale Historic Newspaper Digitisation Programs*, "D-Lib Magazine" 2009, vol. 15, no. 3/4, at http://www.dlib.org/dlib/march09/holley/03holley.html, accessed 30 September 2012.

[24] For example, 98 thousand corrections were made (lines) to various texts on 2 Aug 2012. *Contribute*, Trove, at http://trove.nla.gov.au/, accessed 30 September 2012. More: R. Holley, *Many Hands Make Light Work*...

[25] *Australian Newspaper Digitisation Program*, National Library of Australia, at http://www.nla.gov.au/ndp/, accessed 30 September 2012.



Text corrections

DISCOVERY OF A COMET. TO THE EDITOR OF THE HERALD.
The Sydney Morning Herald (NSW : 1842 - 1954) Wednesday 11 September 1912, page 17
Article

Changed	By	Old Lines	New Lines
2012-08-05 00:11:40.0	user:public:twoobasenjis	Sir,-At ono o'clock yesterday afternoon 1 reielved from Mr YV F Gale, F.R A S, of Sydney, a telegram informing .me that on RA, 13 hours 29 minutos, declination 37 degrees, 2S minutes, south Last evening was the object at 7 hours 5 minutes SIV point-ings with the eight-inch equatorial aud the corresponding circle readings ga>0 the posi-mean time, as RA, 13 hours 37 minutes 12 seconds, aud declination 3fl degrees, 21 5 min-utes, south The comet has >i bright, though not starliko, condensation, It has also an ex-tensive coma, and some rudiments of a tall. It is quite possible that it may be vibible to ly seen in a binocular Owlnp to my advanc-ed years, it la not my Intention to execute a and to encounter tho largo amount of reduc-tion work consequent on such measures This ment establishments I presume the disco-to join in the work of observation This is Yli Gale, his first discovery being made in The Cathedral of Roskllde. whore most of the Danish kings are buried. Is one of the and, like must of these vonerable piles, is oi arches aro to bo seen in proximity, and a gives entrance on the west side to the Earlyl Is of unusual size, and dates from the fifteenth century, Is the handsome royal pew of glided wood. _-_	Sir,--- At one o'clock yesterday afternoon I received from Mr W. F. Gale, F.R A S, of Sydney, a telegram informing me that on R.A., 13 hours 29 minutes, declination 37 degrees, 28 minutes, south. Last evening was the object at 7 hours 5 minutes. Six point-ings with the eight-inch equatorial and the corresponding circle readings gave the posi-mean time, as R.A., 13 hours 37 minutes 12 seconds, and declination 36 degrees, 29. 5 min-utes, south. The comet has a bright, though not starlike, condensation; it has also an ex-tensive coma, and some rudiments of a tail. It is quite possible that it may be visible to ly seen in a binocular . Owing to my advanc-ed years, it is not my intention to execute a and to encounter the large amount of reduc-tion work consequent on such measures. This ment establishments. I presume the disco-to join in the work of observation. This is Mr. Gale, his first discovery being made in The Cathedral of Roskilde where most of the Danish kings are buried, is one of the and, like most of these venerable piles, is of arches are to bo seen in proximity, and a gives entrance on the west side to the Early is of unusual size, and dates from the fifteenth century, is the handsome royal pew of glided wood.

Figure 2b. *Australian Historic Newspapers* – the same text after correction
Source: *Trove*, at http://trove.nla.gov.au/ndp/del/correction/15331352, accessed 30 September 2012.

Similar projects are successfully implemented by the libraries in the United States. In January 2008, the creator of Flickr together with the Library of Congress started a project called "Flickr: The Commons" by providing on Flickr photo images of their collections and allowing users to identify places, people and situations presented in the images. In a series of such initiatives, there is also a project entitled "Civil War Faces" used to identify 886 images of soldiers and their families from the Civil War period, launched in March of 2012. Most of the faces shown in the photographs are unidentified and Flickr users are asked to help identify the persons shown. As evidenced by the data published on the website of the project (140 thousand views), in many cases, such identification does take place[26].

[26] *Civil War Faces*, at http://www.flickr.com/photos/library_of_congress/sets/72157625520211184/, accessed 30 September 2012.

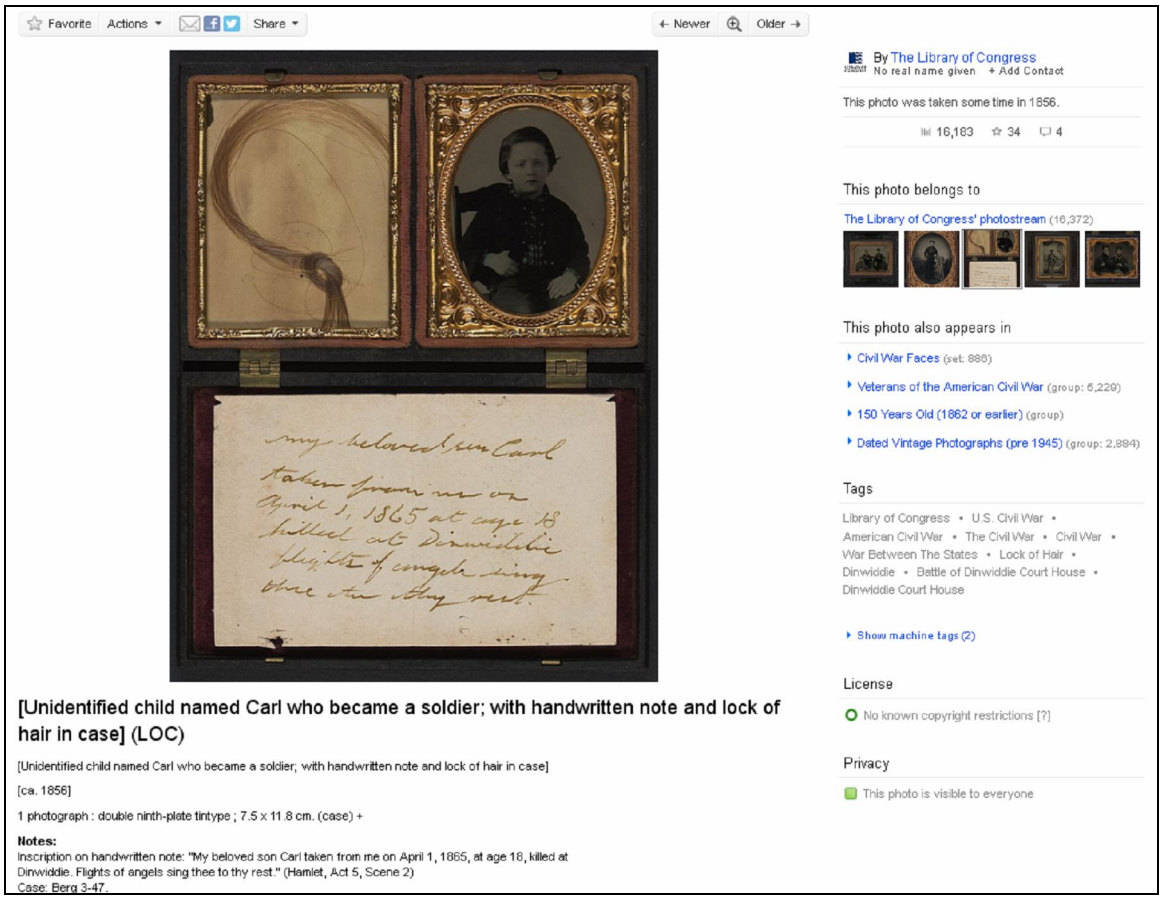


Figure 3. *Civil War Faces* – the example of unidentified photo

Source: *Civil War Faces*, Flickr, at http://www.flickr.com/photos/library_of_congress/5228553337/, accessed 30 September 2012.

Since April 2011, the New York Public Library benefits from the help of Internet users who assist the "What's on the menu" project. The aim of the project was to read the collection of 9 thousand OCR scans of the historical New York restaurant menus, before they enter the Library Digital Gallery. OCR scans of the menus were made available on the website, and then users were asked to rewrite the dishes. Because the task was completed within 3 months, the next documents could be digitized. By September 2012, the project included the transcription of 1,083,509 dishes from 15,630 menus[27].

[27] *What's on the menu*, New York Public Library, at http://menus.nypl.org/, accessed 30 September 2012.

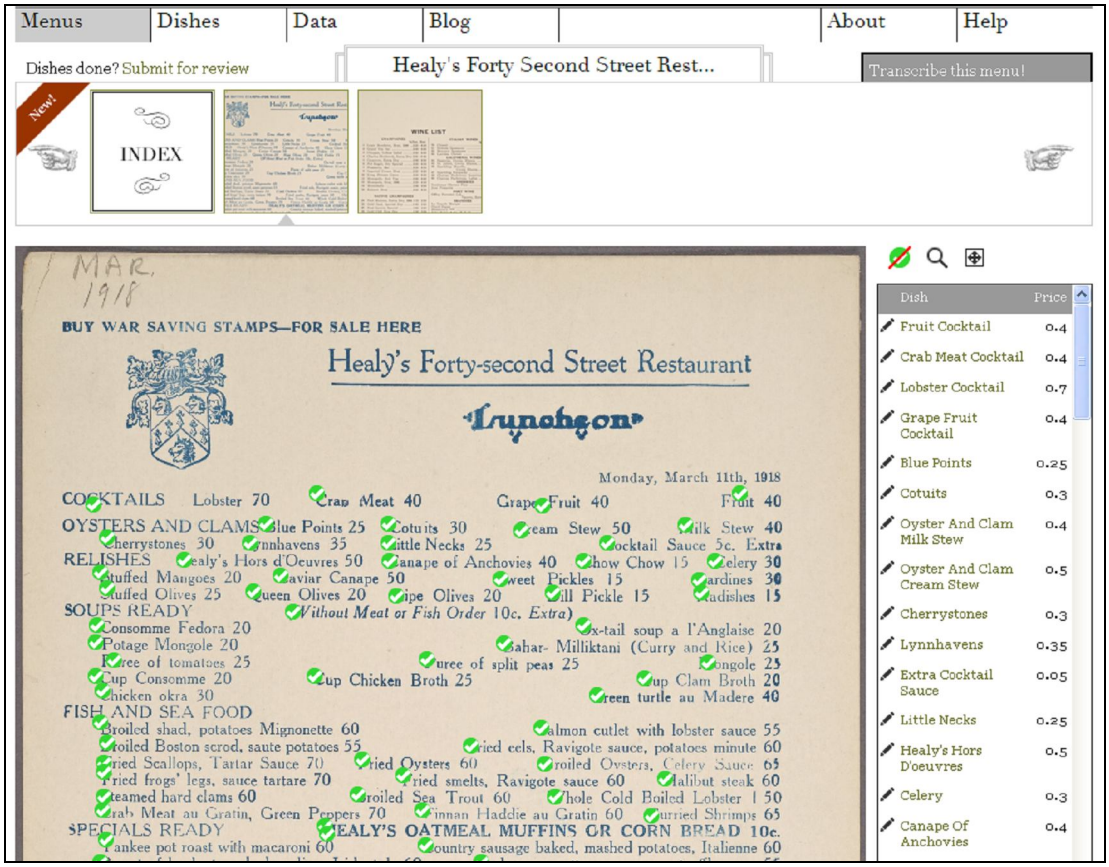


Figure 4. *What's on the menu* – Interface for text correction

Source: *What's on the menu*, New York Public Library, at http://menus.nypl.org/menu_pages/67526, accessed 30 September 2012.

Also the activity of British, German, Finnish and French libraries can be described as examples of similar projects[28].

As for the Polish libraries, this kind of cooperation with Internet communities is a new phenomenon for them (despite the presence of library profiles on social networking sites and using Web 2.0 mechanism on their home pages), and because of the existing legislation (for example the "Act on public collections" or the "Copyright Act") and technological barriers (still limited access to broadband and the speed of the links) – it is also troublesome.

An example of using the wisdom of the general public is a contest for inventing a name for the Children's Section of the Małopolska Public Library in Cracow. The contest was announced in connection with the tenth anniversary of the library. It lasted between December 2011 and April 2012 and was aimed at playschool and primary school children. In addition to the creation of a new name, the contest served the development of children's creativity,

[28] The issue of using crowdsourcing in foreign and Polish libraries will be analyzed in the author's dissertation paper.

fostering their interest in reading and library promotion[29]. An example of another crowdsourcing idea is a project by the Jarocin "Pod Ratuszem" Library which in July 2012 asked its members to send postcards from holidays. The postcards are to be presented in exhibitions organized by the library during the school year[30]. A similar initiative entitled "W rodzinie najlepiej" ("Preferably in the family") was announced by the Town Public Library in Piekary Śląskie (July – September 2012) which invited its users to send in photos taken at home, in garden, parks, meadows, taken not only in Piekary Śląskie and its area but also during travels around Poland and the world[31].

Some social digitization projects should also be considered as examples of crowdsourcing. There are two social digitization centers in Poland. They are run by Śląska Library in Katowice (project launched in 2007) and the Town Public Library in Słupsk (project launched in 2009). Both of them employ volunteers (senior citizens, students, other institutions' employees) who are responsible for scanning resources which enlarge and enrich databases of Polish digital libraries. They also scan important documents from private collections and institutions that do not have enough technological equipment to digitize their papers themselves. Throughout the first year of the project running the digital database of the library in Katowice gained 2,345 positions (101,705 scans)[32].

The creators of dLibra (software developed for Polish digital libraries) are hoping for the involvement of Web users. In January 2008, the 4.0 version of the program was introduced. It enables the users to create, share and evaluate (+/-) their favorite database items, tagging them both privately (visible only to the user) and for the general public (to become a part of public metadata). Since the launch of 5.0 version (2010), these functions have been even more exposed. As research shows, the use of social functions in dLibra libraries, described by Marcin Werla on the basis of data provided by the operators of the 10 largest digital libraries, is still scant. Unfortunately, community features available in Polish

[29] *Regulamin konkursu na nazwę Oddziału dla Dzieci Wojewódzkiej Biblioteki Publicznej w Krakowie*, Wojewódzka Biblioteka Publiczna w Krakowie, at http://www.rajska.info/do-pobrania/func-startdown/389/, accessed 30 September 2012.

[30] *Biblioteka czeka na pocztówki*, "Gazeta Jarocińska", 12 July 2012, at http://www.jarocinska.pl/index.php?option=com_content&view=article&id=4360%3Abiblioteka-czeka-na-pocztowki&catid=12%3Aprzeczytaj&Itemid=13, accessed 30 September 2012.

[31] *W rodzinie najlepiej*, Miejska Biblioteka Publiczna w Piekarach Śląskich, at http://www.biblioteka.piekary.pl/news.php?nid=1402, accessed 30 September 2012.

[32] *Społeczna Pracownia Digitalizacji ŚBC po roku działalności*, Biblioteka 2.0 (Weblog, 4 October 2008), at http://blog.biblioteka20.pl/?p=77, accessed 30 September 2012.

digital libraries are not used sufficiently to trigger the effect of collective intelligence of readers and therefore enjoying the benefits[33].

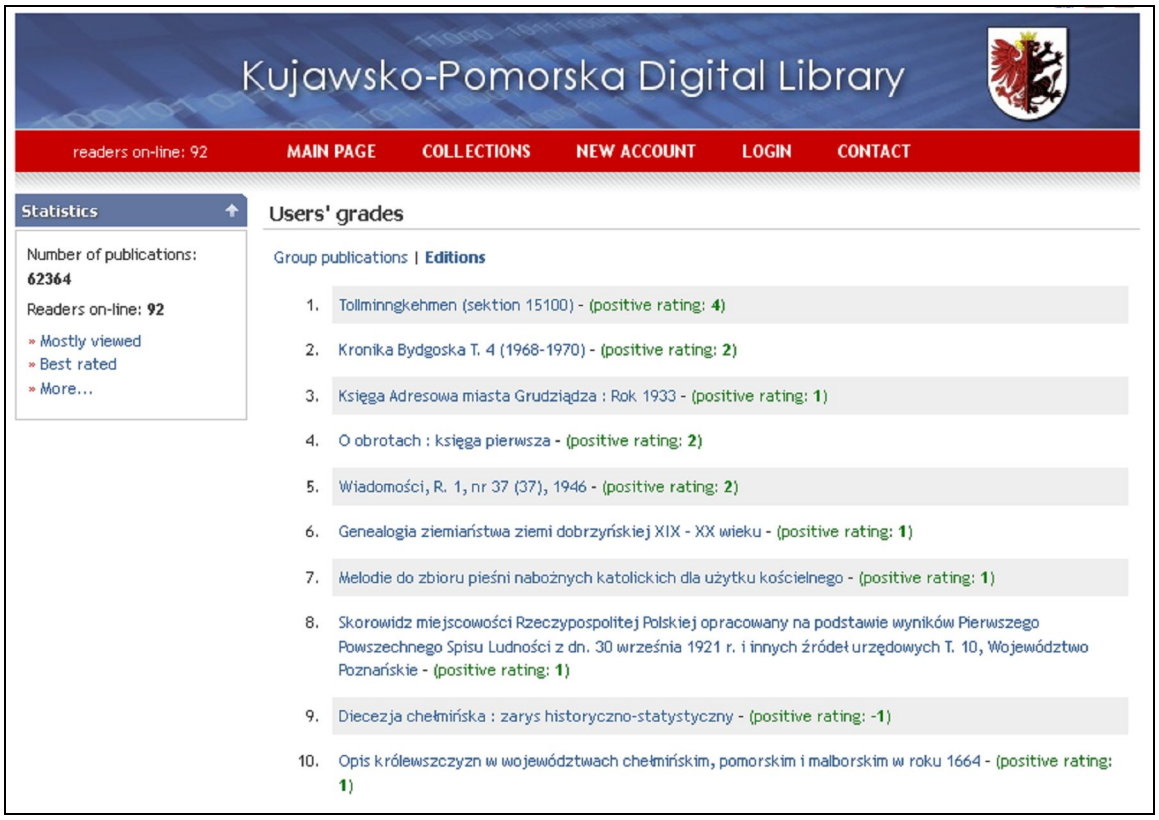


Figure 5. *Kujawsko-Pomorska Digital Library* – Best rated publications

Source: *Kujawsko-Pomorska Digital Library*, at http://kpbc.umk.pl/dlibra/pubvotes, accessed 30 September 2012.

Conclusions

Crowdsourcing is a flexible tool that can be used in the development of new products and services, the process of searching for new innovative solutions and co-creating marketing campaigns[34].

The first library experiences of crowdsourcing prove that libraries use it to inform the public about their new initiatives, for example about existing digital resources, and for enriching and correcting data collections. Foreign libraries use crowdsourcing projects such as collective intelligence (e.g. Teen Library Council in Upper Dublin Public Library),

[33] M. Werla, *Web 2.0 i (polskie) biblioteki cyfrowe*, "Biuletyn EBIB" 2012, no. 2 (129), at http://www.nowyebib.info/images/stories/numery/129/129_werla_.pdf, accessed 30 September 2012.

[34] J. Fazlagić, W. Nowak, *Crowdsourcing czerpanie innowacji z tłumu*, Studenckie Centrum Innowacji i Transferu Technologii Poznańskiego Akademickiego Inkubatora Przedsiębiorczości, at http://scitt.paip.pl/okiem-eksperta/crowdsourcing.html, accessed 30 September 2012.

crowdfunding (e.g. book adoption in Bavarian State Library in Munich) or crowdcreation (for instance, KanWiki in Kankakee Public Library).

As pointed out by Rose Holley – the "Historic Australian Newspapers" Project Manager, and a propagator of crowdsourcing in libraries – crowdsourcing can bring many tangible benefits to libraries, including:

- "Achieving goals the library would never have the time, financial or staff resource to achieve on its own.
- Achieving goals in a much faster timeframe than the library may be able to achieve if it worked on its own.
- Building new virtual communities and user groups.
- Actively involving and engaging the community with the library and its other users and collections.
- Utilizing the knowledge, expertise and interest of the community.
- Improving the quality of data/resource (e.g. by text, or catalogue corrections), resulting in more accurate searching.
- Adding value to data (e.g. by addition of comments, tags, ratings, reviews).
- Making data discoverable in different ways for a more diverse audience (e.g. by tagging).
- Gaining first-hand insight on user desires and the answers to difficult questions by asking and then listening to the crowd.
- Demonstrating the value and relevance of the library in the community by the high level of public involvement.
- Strengthening and building trust and loyalty of the users to the library. Users do not feel taken advantage of because libraries are non-profit making.
- Encouraging a sense of public ownership and responsibility towards cultural heritage collections, through user's contributions and collaborations"[35].

Michael Stephens – the Assistant Professor in the School of Library and Information Science at San Jose State University – considers that "crowdsourcing in libraries will be another milestone in the long chain of disruptions the library has witnessed since the birth of the World Wide Web. Although social networking and technological literacy have improved the library's capacity for social engagement, the continuing maturity of said social networks, along with increased activity and risk-taking in crowdsourcing activities, will separate the

[35] R. Holley, *Crowdsourcing: How and Why...*

libraries who are trying to work with their communities from the libraries that are throwing work at the community. Harnessing the power of crowdsourcing will bring the library into Library 2.0 and then, much further"[36]. In this context it is worth asking libraries and their employees some questions. Should the phenomenon of crowdsourcing arise anxiety or enthusiasm? Are there any aspects of librarianship that should not be trusted into the hands of their users? Is it possible to foresee whether involving the general public in a project will grant the measurable effects? Is it better to launch small or big-scale projects? Where is it possible to find supporters for library initiatives? Should all projects make use of the same pattern of partnership? Certainly, the immediate future will bring answers. Let us hope that the Polish libraries will also play their part in it.

Bibliography

1. *Australian Newspaper Digitisation Program*, National Library of Australia, at http://www.nla.gov.au/ndp/, accessed 30 September 2012.
2. *Australian pictures in Trove*, Trove, at http://trove.nla.gov.au/general/australian-pictures-in-trove, accessed 30 September 2012.
3. *Biblioteka czeka na pocztówki*, "Gazeta Jarocińska", 12 July 2012, at http://www.jarocinska.pl/index.php?option=com_content&view=article&id=4360%3Abiblioteka-czeka-na-pocztowki&catid=12%3Aprzeczytaj&Itemid=13, accessed 30 September 2012.
4. Brabham D. C., *Crowdsourcing: A Model for Leveraging Online Communities*, Daren C. Brahbam Ph. D. (Weblog, 18 March 2011), at http://dbrabham.files.wordpress.com/2011/03/brabham_handbook_crowdsourcing.pdf, accessed 30 September 2012.
5. *Civil War Faces*, at http://www.flickr.com/photos/library_of_congress/sets/72157625520211184/, accessed 30 September 2012.
6. *Contribute*, Trove, at http://trove.nla.gov.au/, accessed 30 September 2012.
7. *Crowdsourcing*. In: *Wikipedia, the free encyclopedia*, at http://en.wikipedia.org/wiki/Crowdsourcing, accessed 30 September 2012.
8. *Distributed Proofreaders*, at http://www.pgdp.net/c/, accessed 30 September 2012.
9. Doan A., Ramakrishnan R., Halevy A. Y., *Crowdsourcing systems on the World-Wide Web*, "Communications of the ACM" 2011, vol. 54, no. 4, pp. 86–96, also available on World Wide Web, at http://cacm.acm.org/magazines/2011/4/106563-crowdsourcing-systems-on-the-world-wide-web/fulltext, accessed 30 September 2012.
10. Doligalski T., *Współtworzenie wartości z klientami zorientowane na innych klientów*, "E-mentor" 2011, no. 1 (38), p. 72–79.
11. Fazlagić J., Nowak W., *Crowdsourcing czerpanie innowacji z tłumu*, Studenckie Centrum Innowacji i Transferu Technologii Poznańskiego Akademickiego Inkubatora Przedsiębiorczości, at http://scitt.paip.pl/okiem-eksperta/crowdsourcing.html, accessed 30 September 2012.
12. Gajewski Ł., *Wykorzystanie koncepcji mądrości tłumu do przyspieszenia tempa rozwoju technologicznego*, "E-mentor" 2010, no. 5 (37), p. 60–67.
13. Geiger D., Seedorf S., Schader M., *Managing the Crowd: Towards a Taxonomy of Crowdsourcing Processes*. In: *Proceedings of the Seventeenth Americas Conference on Information Systems, Detroit, Michigan, August 4th–7th 2011*, Detroit/Michigan 2011, p. 1–11; also available on World Wide Web, at http://schader.bwl.uni-mannheim.de/fileadmin/files/publikationen/Geiger_et_al._-_2011_-_Managing_the_Crowd_Towards_a_ Taxonomy_of_Crowdsourcing_Processes.pdf, accessed 30 September 2012.

[36] M. Stephens, *Crowdsourcing and Library 2.0*, at http://www.crowdsourcing.org/document/crowdsourcing-and-library-20/14785, accessed 30 September 2012.

14. Holley R., *Crowdsourcing: How and Why Should Libraries Do It?*, "D-Lib Magazine" 2010, vol. 16, no. 3/4, at http://www.dlib.org/dlib/march10/holley/03holley.print.html, accessed 30 September 2012.
15. Holley R., *How Good Can It Get? Analysing and Improving OCR Accuracy in Large Scale Historic Newspaper Digitisation Programs*, "D-Lib Magazine" 2009, vol. 15, no. 3/4, at http://www.dlib.org/dlib/march09/holley/03holley.html**,** accessed 30 September 2012.
16. Holley R., *Many Hands Make Light Work: Public Collaborative OCR Text Correction in Australian Historic Newspapers*, [Canberra] 2009, also available on World Wide Web, at http://eprints.rclis.org/bitstream/10760/12907/1/ANDP_Many_Hands.pdf, accessed 2 August 2012.
17. Hooton F., *PictureAustralia and the flickr Effect*, "Gateways" April 2006, no. 80, at http://pandora.nla.gov.au/pan/11779/20060524-0000/www.nla.gov.au/pub/gateways/issues/80/story01.html, accessed 30 September 2012.
18. Howe J., *Crowdsourcing. Why the Power of the Crowd is Driving the Future of Business*, The International Achievement Institute, at http://www.bizbriefings.com/Samples/IntInst --- Crowdsourcing.PDF, accessed 30 September 2012.
19. Howe J., *Neo Neologism*, Crowdsourcing: Why the Power of the Crowd Is Driving the Future of Business (Weblog, 16 June 2006), at http://www.crowdsourcing.com/cs/2006/06/neo_neologisms.html, accessed 30 September 2012.
20. Howe J., *The Rise of Crowdsourcing*, "Wired" 2006, vol. 15, no 6, at http://www.wired.com/wired/archive/14.06/crowds.html, accessed 30 September 2012.
21. *List of crowdsourcing projects*. In: *Wikipedia, the free encyclopedia*, at http://en.wikipedia.org/wiki/List_of_crowdsourcing_projects, accessed 30 September 2012.
22. *Regulamin konkursu na nazwę Oddziału dla Dzieci Wojewódzkiej Biblioteki Publicznej w Krakowie*, Wojewódzka Biblioteka Publiczna w Krakowie, at http://www.rajska.info/do-pobrania/func-startdown/389/, accessed 30 September 2012.
23. *Społeczna Pracownia Digitalizacji ŚBC po roku działalności*, Biblioteka 2.0 (Weblog, 4 October 2008), at http://blog.biblioteka20.pl/?p=77, accessed 30 September 2012.
24. *Statistics Central*, Distributed Proofreaders, at http://www.pgdp.net/c/stats/stats_central.php, accessed 30 September 2012.
25. Stephens M., *Crowdsourcing and Library 2.0*, at http://www.crowdsourcing.org/document/crowdsourcing-and-library-20/14785, accessed 30 September 2012.
26. Vukovic M., Bartolini C., *Towards a Research Agenda for Enterprise crowdsourcing*. In: *Leveraging Applications of Formal Methods, Verification, and Validation*, ed. by T. Margaria, B. Steffen, Berlin/Heidelberg 2010, pp. 425–434 (Lecture Notes in Computer Science; 6415).
27. Vukovic M., *Crowdsourcing for enterprises*. In: In: *Services 2009: 2009 IEEE Congress on Services: Los Angeles, CA, 6–10 July 2009: proceedings, Part 1*, ed. L.-J. Zhang, Piscataway, cop. 2009, s. 686–692; also available for purchase on World Wide Web, at http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=5190710, accessed 30 September 2012.
28. *W rodzinie najlepiej*, Miejska Biblioteka Publiczna w Piekarach Śląskich, at http://www.biblioteka.piekary.pl/news.php?nid=1402, accessed 30 September 2012.
29. Werla M., *Web 2.0 i (polskie) biblioteki cyfrowe*, "Biuletyn EBIB" 2012, no. 2 (129), at http://www.nowyebib.info/images/stories/numery/129/129_werla_.pdf, accessed 30 September 2012.
30. *What's on the menu*, New York Public Library, at http://menus.nypl.org/, accessed 30 September 2012.

Crowdsourcing w działalności bibliotek

Streszczenie: Crowdsourcing jest najnowszym trendem w tworzeniu innowacji. Terminem tym określa się wydzielenie z organizacji pewnego obszaru działalności i oddanie go w ręce tłumu – zorganizowanej społeczności internetowej w formie otwartego zaproszenia. Społeczność tę mogą tworzyć zarówno wysokiej klasy specjaliści, jak i amatorzy, którzy dysponując określonymi narzędziami do komunikowania się i wymiany poglądów, przystępują do realizacji ściśle określonych zadań. Obecnie crowdsourcing wdrażany jest przede wszystkim w przedsiębiorstwach i organizacjach pozarządowych. Ponieważ wprowadzanie rozwiązań na nim opartych jest proste, coraz częściej towarzyszy także działaniom obywatelskim i społecznym, w tym przedsięwzięciom inicjowanym przez archiwa, muzea i biblioteki. Artykuł przybliża istotę crowdsourcingu oraz przykłady wykorzystywania jego mechanizmów przez biblioteki.

Słowa kluczowe: biblioteki, crowdsourcing, inteligencja zbiorowa, mądrość tłumu