Blanka Brzozowska

Institute of Contemporary Culture, University of Lodz

Crowdfunding and Crowdsourcing: New Challenges for the Visual Documentation of City Cultures[1]

Abstract: The aim of the article is to present the challenges posed to the visual documentation of city cultures by the new social phenomena of crowdsourcing and crowdfunding, which create new forms of participation in shaping urban culture and the urban community. In order to discuss the new phenomena some examples will be shown. A fake subway map, a crowdmap or an amateur science project data visualization show how visual tools can be used in the crowdsourcing and crowdfunding models of action as a collaborative project.

Key words: crowdsourcing, crowdfunding, crowdmapping

Introduction

The space of the modern city has become a territory where new community phenomena occur, which, in turn, affect its form and development. Urban communities, which simultaneously function in both the media and non-media space, demand a more significant share in the designing, shaping and managing of urban space. On one hand, this refers to the consumer aspects of the space created within the framework determined by the new marketing paradigm, which is based on opening up towards consumers, who co-create the value.[2] This means that members of urban communities become co-creators of urban space as a consumer space. However, on the other hand, not all such activities can be explained from this perspective, and the co-creation of value within the community, with the use of new communication techniques, goes beyond the promotion and consumption of a particular fragment of space. Moreover, the community can take the role of an investor in the urban space changes. At the same time it extends beyond the territorial borders. Such a situation occurs in a social model of financing – crowdfunding, which is an extension of the community activities of crowdsourcing. Not only does it allow for grassroots activities aimed at a specific

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[1]   The project was funded by the Polish National Science Centre (NCN) on the basis of decision number DEC--2011/03/D/HS4/03408.

[2]   See, e.g. S.L. Vargo, R.F. Lusch, *Evolving to a New Dominant Logic for Marketing*, "Journal of Marketing" 2004, vol. 68 (January).

point in the transformation of urban space, but also, through the use of visual tools, it contributes to the integration of the community and the creation of new forms of social action.

This article presents the challenges that the above-mentioned social phenomena of crowdsourcing and crowdfunding pose to the process of recording the visual culture of the city. The forms of engagement created by these phenomena allow for a complete grassroots participation in the process of the creation of urban space and in the debate about its shape. At the same time, the decisive organs and municipal authorities attempt to adapt these forms of activity or to create hybrid forms as an alternative to the traditional public consultation.

It is particularly interesting that new models of participation employ well-known forms of visualization, such as the map of the underground or infographic visualization of scientific data in order to integrate the urban community and to increase the effectiveness of their activities in the co-creation of urban space. This may lead to the transformation of a particular fragment of space or at least to initiate the debate about its functioning. Such activity obviously requires a full engagement and will to cooperate from the members of the community. The basic principle here lays in their expression of support and participation in informal discussions. It is equally important to offer free labour and financial support. Such activities often result in the completion of particular urban projects, sometimes in cooperation with the municipal authorities and developers. These activities are widespread, therefore definitions such as *crowdfunded urbanism* or *kickstarter urbanism* can be regarded as already belonging to the dictionary of urban studies.

Basic definitions

Before discussing particular examples, it is necessary to present basic definitions used to describe new social phenomena. Crowdsourcing can be defined as follows:

(...) actions taken by large numbers of individuals (hence a "crowd") not employed in an organization, but performing some tasks for it, e.g. proofreading online texts.[3]

Thomas Erickson defines it as:

the use of the perceptual and cognitive abilities of a large group of individuals to solve a problem.[4]

Crowdfunding is a further development of the concept based on financial input rather than labour. It can be defined as:

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[3]   J. Howe, *The Rise of Crowdsourcing*, 14.06.2006, http://www.wired.com/wired/archive/14.06/crowds.html (access: 2.09.2013); *idem, Crowdsourcing: Why the Power of the Crowd Is Driving the Future of Business*, Crown Business, New York 2009.

[4]   T. Erickson, *Geocentric Crowdsourcing and Smarter Cities: Enabling Urban Intelligence in Cities and Regions*, A position paper for the 1st International workshop on ubiquitous crowdsourcing, UbiComp'10, September 26–29, 2010, Copenhagen, Denmark.

an open call, mostly through the Internet, for the provision of financial resources either in [the] form of donations, or in exchange for some form of reward and/or voting rights.[5]

or:

an initiative undertaken to raise money for a new project proposed by someone, by collecting small to medium-size investments from several other people.[6]

Gałuszka and Bystrov refer to Hemer[7] to explain the criteria of the crowdfunding classification as commercial background or project objectives and original organizational embeddedness:

According to the first criterion, crowdfunding projects can be classified as not-for-profit, for profit, and intermediate. According to the second criterion, crowdfunding projects can be classified as independent (no institutional background, started by individuals), embedded (started by already existing private or public organizations and run as their parts), and start-ups (started independently with the intention of remaining on the market in any organizational form).[8]

According to crowdsourcing.org there are three models of crowdfunding that is defined as:

Financial contributions from online investors, sponsors or donors to fund for-profit or non-profit initiatives or enterprises. Crowdfunding is an approach to raising capital for new projects and businesses by soliciting contributions from a large number of stakeholders following three types of crowdfunding models: (1) Donations, Philanthropy and Sponsorship where there is no expected financial return, (2) Lending and (3) Investment in exchange for equity, profit or revenue sharing.[9]

Having taken all the above definitions into account, we assume that crowdsourcing and crowdfunding create new forms of participation in the shaping of urban culture and of the urban community. At the same time, they create new forms of documentation of these phenomena.

A new model of community activity: advantages and limitations

While defining crowdfunding as a new model of activity within the urban environment, it is also important to present its limitations. These are the result of a number of factors,

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5   P. Belleflamme, T. Lambert, A. Schwienbacher, *Crowdfunding: Tapping the Right Crowd*, International Conference of the French Finance Association (AFFI), May 11–13, 2011, http://ssrn.com/abstract=1836873 (access: 12.08.2013).

6   A. Ordanini, L. Miceli, M. Pizzetti, A. Parasuraman, *Crowd-funding: Transforming Customers into Investors through Innovative Service Platforms*, "Journal of Service Management" 2011, no. 22 (4), pp. 443–470.

7   J. Hemer, *A Snapshot on Crowdfunding*, Working Papers Firms and Region, R2/2011, Frauhofer ISI, 2011.

8   P. Gałuszka, V. Bystrov, *Development of Crowdfunding in Poland from the Perspectives of Law and Economics*, [in:] J. Beldowski, K. Szaniawska-Metelska, L. Visscher (eds.), *Third Polish Yearbook in Law and Economics*, Beck Publishing, pp. 145–166 (in press), http://dx.doi.org/10.2139/ssrn.2088169 (access: 2.09.2013).

9   http://www.crowdsourcing.org/community/crowdfunding/7 (access: 15.08.2013).

among which the institutional limitations prevail. On the one hand crowdfunding platforms are particularly efficient in the case of small, local urban projects, especially within a particular neighbourhood. On the other hand, such activities sometimes cross the borders of local interest and become a certain curiosity for Internet surfers outside a given environment. Paradoxically, crowdfunding and crowdsourcing, in principle, are addressed to large groups dispersed on the Internet, who operate on the rule of complementary competencies[10] or the joint investment of minor amounts of money into projects which are not expected to bring profit, but other benefits (fun, integration). Such an attitude addresses the needs of the urban community, which combines the virtual and traditional neighbourhood.

Thomas Erickson refers to this aspect in his research. He introduces the definition of "geocentric crowdsourcing", which reflects a completely different character of urban crowd-sourcing, responding to the needs of the local community. The city becomes a perfect territory for such activities, because it consists of a large concentration of people, who possess the knowledge about local conditions and practical aspects of the functioning of the city. At the same time they are emotionally engaged due to existing social networks. Erickson points out that: "[the] pre-existing social structure is a valuable asset that non-localized systems like Wikipedia must develop from scratch".[11] It is a new dimension of crowdsourcing, which is based on local knowledge and motivation. Erickson shows these differences through the example of the Cyclopath project on Google Maps, created especially for cyclists. The first is based on the activity of the local community and a strong bond to a particular place, whereas the Google tool is universal, yet anonymous. It results in a different social dimension for both tools.[12] "Smarter city" then is a city co-created by the citizens with the application of tools provided by crowdsourcing. In such a configuration, people are not treated as passive subjects, but as active, and actively benefiting from the new possibilities of group online activity and those taking place within the urban space, thus combining the two types of neighbourhood.

According to Erickson, crowdfunding can be analysed in a similar manner. We may point out its unique character in terms of urban activities. *Kickstarter urbanism* is based on local knowledge and engagement, but also already existing social networks, which sometimes require strengthening, development and renewal.

It is essential to notice that the crowdfunding model has its limitations in the case of major projects. The main problem is posed by institutional limitations – Kickstarter and other platforms in such situations are often incapable of dealing with strong bureaucracy. The advantage in the case of minor projects becomes a limitation in this situation. Major projects require following the procedures which determine the development and the nature of changes, when the foundation of social activities lies within the systems of reputation and the model of informal communication. It seems that crossing the boundary of the "neigh-

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[10]   See, e.g., H. Jenkins, *Convergence Culture: Where Old and New Media Collide*, New York University Press, New York 2006.

[11]   http://www.crowdsourcing.org/document/geocentric-crowdsourcing-and-smarter-cities/5678 (access: 15.08.2013).

[12]   *Ibidem.*

bourhood" results in a destabilization of the current model of activity or creates its new, hybrid forms, which require establishing new organizational procedures.[13]

The above mentioned doubts might be related to the engagement effect, which is based either on common interest, in the social sense (not financial), or sheer fun in its broad meaning. In this context, being in "the crowd" means being in "the neighbourhood". It explains why crowdfunding is difficult to apply in major projects. Informal communication is an important issue, as it allows for the consolidation of such a community of "the informed", which acts in a spontaneous and grass-roots manner.[14] Therefore, it is essential to ask how to create interaction between the "crowd" and the city authorities. According to Erickson, "one approach is to involve cities in the development of the applications, so that the input of the crowd is compatible with their systems. Another is to promote data standards for describing and reporting various sorts of urban problems".[15] The problem of the application of crowdsourcing and crowdfunding thus requires a consideration of ways to visualize urban problems, so that they become the subject of debate among "the crowd".

Local municipal application of new models of activity and financing

The local application of new models of activity and financing is realized in various problem areas, which might be described as: efficiency of the use of a city space (tourism, traffic etc.), ecology and healthy lifestyle (food and "green" projects), urban design/planning and social problems (crime, revitalisation, poverty), and entertainment and fun (games, community integration).

In order to make these issues more familiar, I will address more complex examples than the co-funding of the transformation of a particular fragment of space. The main focus here is on the cases in which maps and the visual representation of data have been applied in order to transform a particular fragment of urban space, to start a debate and eventually to integrate a community in the form of a "neighbourhood" community. I will also concentrate on the cooperation of crowdfunding and crowdsourcing. Not only does this cooperation cross the boundaries of co-funding, which is less engaging and often has the element of competition (the key element being investment and the potential refund of financial means), but it also stimulates more durable relations and projects more extended in time, which bring various benefits, not only financial, but mainly social.

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[13] http://www.theatlanticcities.com/neighborhoods/2013/04/could-kickstarter-work-tool-local-economic-development/5238/ (access: 17.08.2013).

[14] See more: B. Brzozowska, *Plotka, pogłoska, legenda miejska – wykorzystanie przestrzeni miejskiej w nowych strategiach reklamowych*, „Kultura Miasta" 2011, no. 2.

[15] http://www.crowdsourcing.org/editorial/geocentric-crowdsourcing-or-how-to-put-the-hands-on-the-city/5839 (access: 19.08.2013).

Towards "green" cities – crowdmapping

Collaborative mapping on its own is a new manner of the visualisation and solution of urban problems.[16] It combines activities within all the abovementioned problem areas – from the mapping of violence, corruption and poverty, to modern forms of "chalk chase", namely, geocatching. Such visualizations are particularly useful for addressing issues concerning food supplies and ecology. The creators of crowdsourcing urban maps have observed the detachment of city dwellers from the sources of healthy, ecological food (so-called "food deserts") and the vanishing of green areas. Both issues are strongly connected with the existence of an urban community built on sharing (space, but also food). Nature and "edible" spaces, in this context, become an important point of reference in the debate on the status of modern public spaces.

Project Urban Edibles serves as an example. It is described as follows:

> Urban Edibles is a crowdsourced map that helps you find wild food sources in Portland, Oregon. They provide resources for those interested in wild edible, medicinal and otherwise notable plants. Urban Edibles creates awareness about what is available in neighborhoods and serve as a tool to make more available natural food sources throughout the city that go undiscovered each year.[17]

Urban Food Maps is another source of useful tools, which enable searching for wild edible plants, planting requisition for edible crops (accessible for citizens) and, above all, finding suppliers of fresh fruit and vegetables. Urban crowdsourcing becomes an essential tool supporting the development of the urban gardening movement. In the case of edible plants, doubts often occur as to the actual health value of fruit and vegetables cultivated within the urban area; however, crowdmapping can be also useful in this case, because it provides tools for an assessment of the level of the contamination in a particular part of a town.

The context of these tools recalls the questions of the cooperation between authorities, developers, planners and the urban "crowd". Project Urban Forest Map is a "collaboration of government, nonprofits, businesses and you to build an inventory of San Francisco's urban forest".[18] Its purpose can be shortly described as managing the trees within the city area and it basically monitors and shares information about their condition, numbers, etc. The project has its roots in the movement of urban gardeners-activists, who realised that merely planting new vegetation – trees in this case – in urban space is not sufficient, because it requires further maintenance as well as thorough research, which enables efficient and effective caretaking. The problem of the maintenance of vegetation planted in an unauthorised way is particularly important, which is evident in the case of the unsuccessful attempts already in Polish cities. Spontaneity and enthusiasm have to be supported by urban communities, which will guarantee the continuity of the project and shared responsibility – this differentiates urban gardening from other activities of the flash mob type. The application

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[16] See: A. Nacher, *Images of the City in the Making: Participatory Mapping, Dynamic Data Processing and Collective Knowledge*, "Przegląd Kulturoznawczy" 2013, no. 4 (18).

[17] http://urbanedibles.org/ (access: 2.09.2013).

[18] http://urbanforestmap.org/ (access: 4.09.2013).

of new communication tools enables not only the consolidation of these communal bonds, but also the launch of an information flow and the collecting of larger amounts of data, which can be used in cooperation between the community and the city authorities. Owing to crowdmapping, this activity resembles a game, during which anyone can locate a tree, add it to the map and edit information. The data collected and shared in this manner can be widely used in urban space planning as well as in solving problems concerning ecology and the health of city dwellers. The same model lays at the foundation of the PhillyTreeMap, which is "a wiki-inspired web application that enables the public to collaborate with the project partners – City of Philadelphia Parks & Recreation, the Pennsylvania Horticultural Society (PHS), and the Delaware Valley Regional Planning Commission – to map, inventory, and preserve the Philadelphia urban forest".[19] The main purpose here is also motivating and activating the urban community, who by means of crowdsourcing collect important information about urban afforestation and manage the data accordingly. The software enables the virtual exploration of existing maps and their editing by addition of one's own locations – the trees. In both projects the involvement of the appropriate institution is a key factor. It shows the possibility of cooperation with "the crowd" on a local level.

Similar projects – not only concerning green areas and food – are becoming increasingly popular. The majority address the issue of the effectiveness of urban space as a living space. The ideas such as New York StreetSeats[20] are based on a crowdsourcing diagnosis of problems and their visualisation by means of mapping. Their character allows for both cooperation with municipal authorities on various levels, or totally independent, almost partisan activities. In each case the manner of the visualization accompanies the informal character of the relation and communication, which determines the functioning of the community.

Maps and the visualization of scientific data lay at the foundation of two projects, which will be discussed in detail/s. They are respectively: a fictitious map of the underground and an amateur research project into the numbers of squirrels.

Albuquerque, a fictitious map of underground

The project[21] began when a local designer and developer, Ben Byrne, created his own vision of a potential underground system in Albuquerque. He completed a diagram of a metro system consisting of six lines. The map resembled a real one, it contained all the necessary elements, colours, connecting stations, etc. It also addressed the diversity of travellers' needs – for instance, commuters or tourists. This shows the sole purpose of the project. It proves that the underground system – either fictitious or "real" – is impossible to complete in Albuquerque. Therefore, the map created by Ben Byrne is by design just a project existing on paper only. It is supposed to initiate a debate about the public transport system and the

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[19]   http://phillytreemap.org/ (access: 5.09.2013).
[20]   http://www.shareable.net/blog/street-seats-collaboratively-mapping-places-to-sit (access: 5.09.2013).
[21]   http://www.byrnecreative.com/blog/2013/03/albuquerque-subway-map/ (access: 5.09.2013).

needs of the citizens. It is merely a visualisation of certain problems by means of a familiar form of a map of an underground system.

The map was published on social networks in order to provoke discussion and it quickly became very popular. The citizens could express their support and also ask questions, highlighting the problems and difficulties they would have to overcome. The debate continues (and develops along with other projects, which will be discussed further in the article) somehow detached from the primary project; however, the citizens are prone to accept the effect of visualisation – that is, the map itself. The next stage of the event is a campaign carried out on the crowdfunding platform Kickstarter, which is expected to result in the publishing of posters of a fictitious map of the underground system.[22] Such a token becomes a symbol of a certain provocation designed to initiate public debate on the problems of the city, but also, or above all, it is a representation of the integration within the urban community, who want an active participation in the creation of urban space. The fictitious map as a source of integration carried out in the social media, and then in the crowdfunding campaign, becomes a manner of talking and thinking about the future of the city.

The project lived a second life due to its integration with other social initiatives in the city – *via* the A/WAY platform.[23] Its creators wanted to apply Byrne's idea to solve particular problems in the city. The next stage of the project, then, will focus on the debate about particular "metro stations". The virtual stations visualised in the posters of the map are supposed to be starting points for community activities leading to a complete solution of problems in other areas of the city. The creators of the idea claim that: "These points will become virtual social network stations where visitors can share their concerns about public transportation in our city".[24] Ben Byrne's project eventually goes beyond a sole provocation and becomes a germ of community urban activity. On the one hand, it is a tool used by a local community to improve their activities within the framework of the co-creation of urban space, on the other hand, it is a visual documentation of problems in the city and of the activity of the citizen community.

Inman Park Squirrel Census

The "Inman Park Squirrel Census" is yet another project which combines the elements of gameplay and integration of the local community with the transformation of an image of a particular fragment in urban space. The project[25] launched by a local writer, Jamie Allen, exploits the elements of artistic activities and academic research in order to attract attention

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[22] http://www.kickstarter.com/projects/drywall/albuquerque-subway-poster?ref=search (access: 5.09.2013).

[23] http://thisisaway.org/ (access: 5.09.2013).

[24] http://www.good.is/posts/how-albuquerque-s-fake-subway-map-starts-new-public-transit-conversations (access: 5.09.2013).

[25] http://squirrelcensus.com and http://www.kickstarter.com/projects/jamiewashere/inman-park-squirrel-census (access: 5.09.2013).

to the coexistence of people and nature in one of the districts in Atlanta.[26] Being an old Victorian settlement, the district is characterized by a rich historical background and a vast number of green areas, which, however, are gradually submitted to the threat of developing the transport and industry in the area. The local community in the area have a history of joint action to support the preservation of the "quiet" character of the place and to fight for the recognition of its uniqueness – which effort resulted in putting Inman Park on the list of the National Register of Historic Places and the launch of the revitalization programme. Allen's project, however, has nothing to do with this. It is, rather, a grass-roots activity, which does not involve any authorities. It was introduced for fun and was inspired by the writer's own curiosity. Allen wanted to write a short story and thus he was looking for particular information to support his work. He was particularly interested in the number of squirrels, *Sciurus carolinensis*, that inhabit the area of Inman Park. The project he started though was local. The participants were amateur researchers (among them writers, designers, a programmer, academics not specialized in the subject and volunteers) and they had to live in Inman or the nearest vicinity. In its initial stage the project focused on combining collected scientific data and stories about squirrels as told by the locals. Therefore, the success of the project relied on a positive response from the local community. The stories and scientific research provoked a reflection on the character of the area and its local community in general. The collected data allowed for the assessment of the numbers and spatial activity of the squirrels. The stories and anecdotes gathered during interviews created a fresh image of the area, in which people and animals exist next to each other. The stories and data were then presented during an event called the "Squirrel Census Data & Spectacle" organised for the citizens. Due to its immense success, such events became regular. The participants of the project started cooperation with Emory University in order to grant its continuity and the introduction of new "academic" stories to the anthology.

The second stage of the project focused on a crowdfunding campaign. In order to collect funds for the publishing of the outcome of the project, the "Inman Park Squirrel Census" was advertised on the Kickstarter platform. It resulted in financing the printing of posters depicting a graphic record of the collected data. Similarly to the map in Albuquerque, they are supposed to be treated as a local curiosity, a memento of the joint activity and also a reflection of certain problems concerning the community. As in the previous project, there is a continuation, in this case on Facebook. It offers an extension of the current activity and it is open for new content, which is uploaded by users, who are not necessarily linked to the previous project. We can find regularly updated further stories and records of meetings with squirrels and the information about upcoming themed local events. A squirrel has become Inman Park's trademark and the symbol of the local community, which, in this case, does not unite in order to solve a problem (however the number of rodents can cause health and hygiene problems), but rather to socialize and have fun. In the course of play there appears to have been created a new consciousness of place and community, which actively creates an "image" of their share of the urban space.

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26   See: B. Brzozowska, *Kapitał miasta – kapitał konwersacyjny. Wpływ wspólnot konsumenckich na kształt przestrzeni miejskiej*, [in:] M. Madurowicz (ed.), *Kształtowanie współczesnej przestrzeni miejskiej*, Wydawnictwo Uniwersytetu Warszawskiego, Warszawa 2014.

Conclusion

The above examples show a new trend in urban activities. It requires careful consideration also from the perspective of the visual documentation of the urban culture. Tools such as maps of infographics aquire new unexpected features in new crowdsourcing and crowdfunding environments. In the past, these tools were only accessible for scientists and cartographers, now they are widely used by the urban "crowd", conscious of the continuity of their actions, which cross the borders of spontaneous, temporary provocations, such as those usually represented by the flash mob. The use of these tools provides for a wide range of opportunities at the level of establishing cooperation with the local authorities. The great will to share visually acquired and recorded data shows that the urban crowd is ready to abandon amateurish activities and that they can offer ready-made models of action. The possibility of their use depends on the flexibility of the other parts, as they have to learn to read maps of the new urban communities.

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