Learning about ICT-based Collaborative Practices in Urban Regeneration

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Abstract
This paper starts from a research topic approached within an internal fellowship in Babeş-Bolyai University, Cluj-Napoca, Romania. The project, Smart Collaborative Practices in Urban Regeneration in Cluj-Napoca, assessed the necessity that the local university provides innovative services using ICT, in cooperation with local NGOs, which would support the development of the local community. As part of the project, we present the stages of an online research on urban regeneration collaborative practices, which use the ICT, through which local communities are activated to take part at the decision-making process concerning their development. Therefore, our aim was to identify, present and analyse the web-based resources (i.e. good practice examples) available for smart collaborative practices, considering the results of the fellowship project and their use in further activities involving the ICT and implemented by various stakeholders in local development (i.e. the academia, the local NGOs, and the citizens). In addition, we focused on the advantages of the online research on the topic, from the perspective of what university geography students could learn, when in service learning, field trips, and field research were not possible. This was the case of the fellowship project implemented in March-April 2020, which overlapped over the lockdown period in Romania, caused by the COVID-19 health and societal crises.

Keywords: Digital civics, Web sources, Urban development, COVID-19

1. Introduction
A research topic approached within an internal fellowship in Babeş-Bolyai University, Cluj-Napoca, Romania, is at the basis of this paper. The project, titled *Smart Collaborative Practices in Urban Regeneration in Cluj-Napoca*, assessed the necessity that the local university provides innovative services using ICT, in cooperation with local NGOs, which support the development of the local community.

In this paper, we present the first part of the project results, which consists of the stages of an online research on urban regeneration collaborative practices using the ICT, through which local communities are activated to take part at the decision-making process concerning their development.

Thus, our research aimed at identifying, presenting, and analysing those web-based resources (i.e. good practice examples) available for such smart collaborative practices (i.e. including ICT). In this process, we considered two perspectives: that of urban regeneration and the educational one. Therefore, first, we present the results of the fellowship project and their possible use in further activities involving the ICT and implemented by various stakeholders in local development (i.e. the academia, the local NGOs, and the citizens). Secondly, we present several considerations from the perspective of what university geography students could learn, when in service learning, field trips, and field research were not possible. This was the case of the fellowship project that was implemented in March and April 2020, which overlapped over the lockdown period in Romania, caused by the COVID-19 health and societal crises.

2. Material and Method
2.1. Data Collecting, Procedure and Research Material
We collected the necessary data on the topic of ICT-based collaborative practices in urban regeneration through bibliographic research on the Internet. The research material consisted of the research process performed by the authors within the online environment and the results of this documentation (i.e. the reported good practice examples from the selected articles). Then, we analysed the content of the sources.

2.2. Participants
The fellowship project defined its target group:
(1) outside the university (i.e. of the provided services will benefit two non-governmental associations: Colectiv A Association, with the project La Terenuri – spațiu comun Mănăștur [At the Playgrounds – Common Space in Mănăștur] and miniMASS Association, with the project Someș Delivery, together with the local communities), and (2) within Babeș-Bolyai University (i.e. the members of the Centre for Research on Settlements and Urbanism, as well as the academic community of the whole university who would freely use the research results).

Dr. Oana-Ramona Ilovan, the fellowship holder and scientific coordinator, implemented the activities of this research in March and April 2020.

3. Results and Discussions
This section is divided into two main parts, presenting and discussing (1) the usefulness and challenges of web-based resources available for smart collaborative practices in the urban area and (2) the educational advantages of web-based research for university geography students on the topic, during a period when only this form of research was possible, namely the COVID-19 lockdown period in Romania.

3.1. Web-based resources available for smart collaborative practices in cities
In this part, we present and analyse the web-based resources (including good practice examples) available for smart collaborative practices in the urban area, involving regular citizens in participating at the development of their communities. Web-based research for identifying solutions to activating citizens through ICT, and thus enabling them to participate at the development of their community, focused on the following (as identified in the studies published so far):
(1) mobilizing the community through mobile apps;

(2) awareness raising actions about community issues, using mobile apps (including social media: Facebook, Instagram, Twitter, etc.);

(3) challenges/problems/limitations concerning the first two points above;

(4) the actors involved in realizing research (typology, training, necessary funds);

(5) availability (who, when, how, why) concerning the implementation of certain mobile apps that enable the realization of the first two points above;

(6) solutions and synthesis of good practice examples.

In scientific specialty literature, authors discuss how communities can contribute to their own development, through *Local Community Initiatives,* which, besides previously established objectives (solving certain dysfunctions, helping disadvantaged classes/communities, developing local economy), target also at strengthening the relationships among community members (Ferreira and Pantidi, 2018).

There are numerous ways in which the community can be determined to use digital technologies. They noticed that an aspect that was restricting access of the communities to digital technologies was the lack of project initiators who had programming knowledge in order to realise more specialised mobile apps. However, there were programmers who created platforms that enabled the creation of apps in an easier manner.

Sensr is a platform that helped creating mobile apps used by citizens to monitor air quality, drillings for extracting natural gases, identifying invasive plants with students' help (Kim et al., 2013). App Movement (Olivier and Wright, 2015; Garbett et al., 2016) is an online platform that helps communities propose and promote apps according to their needs, so that later to create designs that can be personalised. Thus, it is proven that technologies are not created with a singular, fixed, and predetermined aim, but they may be used in the manner that the community needs them (Garbett et al., 2016). Fischer and Scharff (2000) are among the first to argue that users of apps should be free to come up with ideas in what the design of an app is concerned.

Under these circumstances, when technology becomes more and more accessible, it starts to be used to encourage the mobilization of the community (Ferreira and Pantidi, 2018). However, the role of technology in studying local communities is not enough studied (Asad and Dantec, 2017; Ferreira and Pantidi, 2018), because up to the present, it was used only in the case of natural disasters (Starbird and Palen, 2011; De Visser et al., 2015) and of political conflicts, such as the protest movement titled the Arab Spring (Howard et al., 2011). Another type of projects where community can be mobilized is represented by musical videos. Fans of certain music bands would film live concerts and later those videos were integrated into official videos (Schonfield et al., 2015).

In order to announce the community concerning projects that are to be implemented, some researchers or associations consider classical means, accessible to the larger public: flyers posted within the neighbourhood or the central area, announcements in the local newspaper, e-mails addressed to communitarian organisations and news spread from person to person (DiSalvo et al., 2008).

Social media may be used to establish networks of activists in a field and to mobilize the community to act (Tayebi, 2013). The mobile technologies enable communities to access information and encourage participation at various projects (Han et al., 2016). Digital technologies may be used successfully for age groups that use smartphones frequently (Ferreira and Pantidi, 2018).

The technologies used in projects addressed to communities should consider their values, improving cohesion among their members, improving trust, and offering the possibility to realise connections with entities outside those communities (Ferreira and Pantidi, 2018).

The challenges that may appear in projects using digital technologies are diverse. Thus, the safety of technology was considered in the study realised by Ferreira and Pantidi (2018), in the

sense that certain apps need users' personal data (cf. The European Parliament and the Council of the European Union, 2016), and, in the situation in which these data are not safe to cyber security attacks, users would avoid using technology. On the other hand, certain apps require variants of the operation systems that are up to date, thus encouraging buying new telephones and ceasing to use the old ones. This practice is against the principle of sustainability, considered implicitly in those projects (Ferreira and Pantidi, 2018). It was demonstrated, through case studies, that technologies can contribute to strengthening relationships among community members, but face-to-face ones should not be restricted or replaced (Ferreira and Pantidi, 2018).

3.2. Good practice examples
3.2.1. Case study 1. Interactive digital panels
Although this first case study was from the rural area, it can be successfully replicated in towns and cities and their neighbourhoods, that is why we took it into account as a good practice example. For announcing certain events in the community, *digital interactive panels* were used and Taylor and Cheverst (2012) show how these panels influence the life of the community over a four years period. The placement of the panels is crucial as they are more used in places where people spend more time than in the ones people just pass by. Thus, the interactions with the panels are dependent on the placement of the social and spatial context (Bil et al., 2020).

The first digital panel within the project was placed at the mayor's office of a rural settlement in the north-west of England, named Wray, and which had a population of about 500 inhabitants (Taylor and Cheverst, 2012, p. 28). There, it was placed a touchscreen, connected to a hidden computer that displayed photographs from local events. Interested viewers could roll down those photographs and upload new ones or download them using Bluetooth. To get the community's feedback, a notebook was placed near the screen. The notebook collected many positive comments, people were happy to be able to see again photographs from the events they missed. People also suggested that older photographs and videos of the village should be displayed. A problem that users underlined concerned the transfer of photographs, as they considered that a web app would have been more appropriate than the classic Bluetooth (Taylor and Cheverst, 2012, p. 28).

After a trial period at the mayor's office, the screen was moved to the local store, due to the fact that this was acknowledged as the preferred meeting place of the community members in order to socialise (Taylor and Cheverst, 2012, p. 28). Due to the change of location, the people's interaction with the screen was five times higher than in the case of the mayor's office. All this time, researchers analysed which were the most frequently accessed content, the number of logins, thus appearing a behavioural profile of the community members concerning the use of the respective screen (Taylor and Cheverst, 2012, p. 28). The residents were also interviewed, and they were asked to explain how they used the screen and what kind of improvement should be brought (Taylor and Cheverst, 2012, p. 28). A second screen was placed, and it attracted more and more users. Following discussions, the interface was improved, and new functions were added: comments could be posted, and photographs could be sent on e-mail in the form of digital postcards (Taylor and Cheverst, 2012, p. 29).

New photographs of the village were added to the old ones and the first no longer had only yearly events, but also certain news, meteorological phenomena, weddings, etc. The inhabitants noticed that the screen could display local advertisements, news about future events and could also play the role of a newsletter. So that certain events were not forgotten, a Reminder was constantly displayed on the screen. Thus, the screen ended up in being used for various news (charity events, public meetings, objects on sale, or services provided by the locals) (Taylor and Cheverst, 2012, p. 29).

One should consider that such screens are useful not only for the locals, but also for tourists who want to find information about the respective community. For tourists especially, maps and guided tours were displayed. The ones interested to move in the village used the screens to have their first contact with the community (Taylor and Cheverst, 2012, p. 31).

The screens had the role of enabling relationships among community members, because they would gather around them and discuss based on the photographs of the events that had already taken place. After the project ended, the screens continued to be used, but they needed specialists to monitor their functioning. That is why, for future actions, simpler apps could me more appropriate, the ones that could be managed by the community (Taylor and Cheverst, 2012, p. 32).

Other studies which considered the use of digital screens for informing the communities were realised by Redhead and Brereton (2009) and Maunder et al. (2011).

3.2.2. Case Study 2. Social Media Supporting Community Causes

Another paper, written by Crivellaro et al. (2014), underlines *the role of social networks in supporting a community cause*. In the town of Tynemouth (UK), there was a swimming pool dating back to 1925 (Crivellaro et al., 2014, p. 3575). In time, it was no longer maintained, and it was rearranged as a natural site for preserving the flora and fauna, but also this initiative failed. In 2010, a Facebook page was created by a group of locals that supported the return to its initial function, of swimming pool, but only a few community members accepted this idea (Crivellaro et al., 2014, p. 3575).

In 2012, the public authorities realised a plan through which they proposed that the swimming pool to be transformed into a volley field, with an open-air amphitheatre. This information was posted on the Facebook page and this triggered the opposition of the community, proven by their many comments. Only then the community mobilised and manifested their interest for restoring the swimming pool. Protests were organised and a campaign was promoted through the Facebook network. Inhabitants posted old photographs and videos from the time when the swimming pool functioned. Their objections were sent to the authorities and the plan was not implemented. A group of volunteers and professionals was set up and they developed a plan for restoring the swimming pool, followed by campaigns for collecting funds to implement the project (Crivellaro et al., 2014, p. 3576).

The data were collected from the Facebook page of the project, where there were 620 posts and 3,987 comments, posted between August 2012 and January 2013, and the methods used for interpreting them was discourse analysis (Crivellaro et al., 2014, p. 3576). One of the problems was the censorship of negative answers by the administrators of the page, who considered that once the aim of the movement was established (restoring the swimming pool), non-constructive comments were useless (Crivellaro et al., 2014, p. 3580).

The fact that inhabitants posted photographs and shared their memories related to the swimming pool could be considered an act of political protest and of solidarity (Crivellaro et al., 2014, p. 3580). The authors of the respective study concluded that Facebook is the network where people could express "their cultural voice" (Crivellaro et al., 2014, p. 3581).

3.2.3. Case Study 3. Social Media Raising Awareness

Social media can be used to spread in the community various political ideas that would finally create the necessary fund to install a political regime (Howard et al., 2011). This is the case of the Arab Spring when militants for democracy filmed protests and then posted them on Facebook, Twitter and YouTube, co-opting others that would share their ideas (Howard et al., 2011, p. 1). The implications of the social media were studied in Tunisia and Egypt (Howard et al., 2011, p. 1). Researchers used the following methods: they created a database with information collected from

media networks and analysed users' comments (Howard et al., 2011, p. 24). The conclusion of the study was that social media had the main role in political debates (Howard et al., 2011, p. 22).

The group that took care of the posts on the socializing networks was made of young persons, from the urban area, with university studies, most of them women. They pressured the government both before and during revolutions, using Facebook, Twitter and YouTube (Howard et al., 2011, p. 1). Moreover, the information and the causes supported by protesters were broadcasted by the television and then further on by BBC and CNN (Howard et al., 2011, p. 2). Results showed that, using digital technologies, the supporters of democracy managed to spread ideas about freedom and the revolution among a significant number of persons (Howard et al., 2011, p. 2).

It is not known whether street protests started because of the online conversations or if the large crowds of people in the streets caused the online comments. However, it is a fact that online conversations had a decisive role in stimulating public opinion. Discussions about freedom, democracy and revolution on the blogs and Twitter were almost immediately followed by mass protests. Noticing the power of the socialising networks in mobilising masses, officials tried to block Facebook and the other websites, they arrested bloggers and other persons that shared political information. At that moment, the bloggers in Tunisia asked for the hackers' help to block the online services of the governments. The supporters of democracy in Egypt had their servers in London, therefore the officials were not able to block them (Howard et al., 2011, p. 2).

Another result of using social media was sharing information with people from other states who made public the respective situation and attracted the attention of the global community. Thus, protests in Tunisia and Egypt served as examples for other states where later revolts broke out (Howard et al., 2011, pp. 2-3).

3.3. Educational advantages of web-based research for university geography students
Geography university students can use web sources to form their literature background on a certain subject. They have to recognize which sources are credible and worth to be mentioned in a scientific paper. They learn how to search for articles, how to "scan" them and how to quote correctly. However, in addition to this classical use of Internet resources for research (cf. Vlada and Adăscăliței, 2014; Vlada and Jugureanu, 2007), the approached topic in this research required that students use the online environment for collecting information, due to the fact that the subject focused on ICT in urban regeneration, which are quite recent practices and more likely to be reported online. In addition, the articles posted on blogs or official pages of the urban regeneration projects can be read by multiple Internet users and they can comment upon a certain topic. The students have the possibility to see different opinions and reactions, even if these are not enabled through face-to-face interaction, as in the case of field research.

Moreover, asking students to look for good practice examples reported online, starting from several points they should pay attention to, is a powerful strategy of offering feedforward in university education (Dulamă and Ilovan, 2016). In the reported case studies, one idea attracting students' attentions was the installation of interactive digital panels (Taylor and Cheverst, 2012), which had multiple functions and could be used both by the locals and the tourists. Using local photos, the community sense was enhanced, the people felt more belonging to the place and proved that territorial identity is relevant for development (cf. Ilovan et al., 2016b). As a result, implementing rehabilitation projects of the built heritage (Fantazi, Hecham, and Petrișor, 2019; Tache et al., 2018) and ensuring resilience (Petrișor, Meita, and Petre, 2016), in the context of creating smart cities (cf. ISO/IEC JTC 1, Information Technology, 2014), are more easily achieved.

Also, previous studies showed that university students in Geography make use of Internet sources for their specialty training (Dulamă et al., 2015; Ilovan et al., 2016a; Osaci-Costache et al., 2015) and are interested in connecting ICT with traditional research methods for studying the territory (Ilovan et

al., 2019). Therefore, such a research project, especially during a period when access to field research was not possible, was an opportunity for students' exercising their online research skills and increasing their competence level on the subject. An extra advantage is that the students are constrained to read studies written in English or in other languages, so they are constantly improving their language skills and they have the chance to get used to the scientific vocabulary.

4. Conclusions

The literature so far has not focused on how communities are announced concerning events and projects. This aspect is mentioned in passing in some sources and does not appear at all in others. This could be a reminiscent of a practice that does not involve citizens in decision making or of the socialist past when the state and some external actors decided the fate of communities without asking their opinion.

Nowadays, there are a lot of resources that can be used to bring news to people's attention. The society encourages the use of the online resources rather than the classic ones (paper posters, flyers), but not all the members of a community have the means to access the online environment. Therefore, the organising team of projects have to come with something available for any user type.

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