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Place-Based Tools For Participatory Urban Planning: The Potentialities Of Soft GIS

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abstract

Since several decades public participation and participatory urban planning are considered important issues to be taken into account in public decision-making. At the same time, research methods have developed new tools aimed to support and stimulate citizens' participation in planning activity. Within this wide repertoire, the technological development allowed the creation of several participatory GIS practices, able to integrate geo-referenced spatial information together with citizens' knowledge and voices. Participatory GIS tools allow an investigation on residents' insight of their living environment that can be utilized along the planning process. As a tool of place-based experience, participatory GIS are nowadays object of updates. The paper presents the potentialities of SoftGIS, investigating on its further utilization in the welfare field of studies, pointing out – at the same time – some questions about their capacity to affect public decision-making and place-based research approaches.

keywords GIS, Soft-GIS, Participation, Collaborative Planning, Social Inclusion

Introduction

This paper presents some considerations relating to a lecture held by Marketta Kytä¹ at Milan Polytechnic during the final seminar of the cycle on Open Space(s) Design². The topic is that of participatory GIS (PPGIS and SoftGIS) practices to stimulate “human knowledge” in the urban planning field. In particular, the lecture covered three main topics: (i) a place-based approach to the study of urban experiences and participatory planning, (ii), an argument about whether and how a place-based knowledge can be useful in the urban planning and development fields, and (iii) a focus with few case studies in Helsinki metropolitan area, with an eye to the development and usefulness of Participatory GIS practices, with an eye to the latest SoftGIS tools, based upon web-based application that lead to reach a wider number of people into planning activity through a process of participatory mapping that has been strengthened over the last two decades.

Based on this preliminary topic and without deepen how to use the software, the paper stresses the potentialities of SoftGIS utilization following the large literature provided in the academic debate and taking into account also the latest market-led practices that can strongly improve the diffusion of the tool. Furthermore, the essay tries to point out some further debates that can be synthetized in the following questions: whether and how SoftGIS affects the public policy-making? Is it just a tool for surveying or it can concretely exploit place-based research approaches and their relations with public choices? Moreover, is it possible to add a new theme of SoftGIS use, looking for a further development for its utilization for welfare issues? To answer, a description of the history and development of SoftGIS is provided, introduced by the theoretical framework, and followed by a discussion on the further perspectives to increase and strengthen the place-based knowledge with SoftGIS, also in other field of studies.

GIS software is the foundation of softer practices. GIS is a system designed to store, capture, analyse and manage geographic data for graphical outcomes in a large number of disciplines. In the academic field, it is used a geo-information system, providing spatial information relying on specific databases. However, the paper does not ground its reflection on the shifting and differences between GIS and SoftGIS rationales. Rather, it describes participatory GIS as a challenging topic, as well as practice, per se, regardless of its foundational basis, which must be seen as the scenario that lie behind participatory mapping.

1. Setting the framework: SoftGIS as a tool for participatory urban planning

A place-based approach is here identified as a way of introducing citizens' experiences and knowledge about their living place into the planning activities aimed to improve the physical environment. Thus, the contents of this essay grounds their reflection into the current pathways in participatory planning approach, enhancing the capacity of SoftGIS and PPGIS – seen as place-based tools – to link together users' knowledge (i.e. citizens' knowledge) and planning solutions.

Participatory urban planning has a long historical tradition, characterized by several contributions, at least over the last four decades, which defined different models to cope with participation in urban planning. During the 1970s', Paul Davidoff (1973) advanced a debate about "advocacy and pluralism in planning", and some years before, Charles E. Lindblom purposed the idea of "the science of muddling through" (Lindblom, 1959) with further development around the model of "partisan mutual adjustment" for decision-making in public planning. More recently, some other scholars dedicated several importance to the issue of participatory practices for an inclusive and more democratic urban planning. In this sense, Emanuela Saporito (2016) summed up three main models of participative planning: the first one is the "conflictual" model, based on Neo-Marxist and Foucauldian perspectives (Flyvbjerg, 2002), where important contributions are those of Susan Fainstein and the concept of "Just City" (2009; 2010), and also that of Chantal Mouffe (2000a, 2000b), with the concept of "agonistic democracy". The second model is the "consensual", also identified as a communicative (or collaborative) model of planning theory (see also Backlund & Mantysalo, 2010). The main thinkers of this model are Forester (1999, 2008, 2009) with the concept of "deliberative planning", Healey (1997, 2007) and Hillier (1993) with the idea of collaborative planning, as well as the consensus-building model proposed by Susskind et. al. (1999) until a third, recent way of looking at the participatory urban and spatial planning: the "trading zone" model (Galison, 1997, 2010), quite recently developed in the field of urban planning (Balducci & Mäntysalo, 2013). Regardless of this clear and useful breakdown into three models, public participation is nowadays considered as a key element of urban planning practices in Western democracies (Friedmann, 1992; Healey, 1992), able to arise the plurality of voices that form the "social fabric" of urban contexts. Horelli (2002) defines the participatory planning as a social, ethical, and political practice in which individuals or group, assisted by set of tools, take part in varying degrees at the overlapping phases of the planning and decision making cycle that may bring forth outcomes congruent with the participants' needs and interests (Horelli, 2002).

Looking into this field of studies, the use of SoftGIS in research, seen as the latest development of Participatory GIS practices, can be seen as an innovative tool (given that it is a digital software) for participatory planning practices, adaptable to a wide variety of fields (such as sustainability, ecosystem services and green infrastructures, mobility perceived safety, everyday service networks, etc.) and at various scales, from the local neighbourhood-scale to cities and regional ones. Basically, SoftGIS is designed for the analysis of "soft" geographical information, provided by citizens' experiences and knowledge, together with the "hard" GIS knowledge, that is very consolidated in urban planning and urban sociology fields. SoftGIS has been developed to get over some inadequate and inconvenient participation methods, such as public hearings and written statements (Healey, 1997; Innes & Booher, 2004; Kahila-Tani, 2015; Kingston, 2007), with the aim to affect and improve the quality and the effectiveness of participation in planning processes. In other words, SoftGIS is the response to the demand of a more systematic evaluation process for participatory planning practices on one hand, and to the need of reaching the voice of citizens on the other hand. Participation also means involving persons or groups that do not routinely take decisions (Newig & Kvarda, 2012) and in this sense, can be seen as a device able to enhance the "capability for voice" (Bifulco, 2015; Bifulco & Mozzana, 2011; Bonvin & Farvaque, 2006; Sen, 1992, 2010) of inhabitants through a participatory tools aimed to involve them in specific projects related to their urban living place.

2. Setting the topic: PPGIS and SoftGIS development

2.1 Some preliminary distinctions about participatory GIS

To describe SoftGIS and its utilization, an overview on the entire pathway of participatory mapping development is necessary. Participatory GIS embrace the field of participatory urban planning acting as a place-based participatory tool. Over the last two decades, literature on PPGIS practices has constantly increased and at the same time PPGIS methods have been spread thanks to dozens of regional and environmental and urban-based studies (Brown & Kyttä, 2014). In the European framework, PPGIS found one of the most significant fields of studies and application in the Finnish context, where the latest web-based developments allowed its application on several territorial contexts in ten Finnish cities of medium dimension, until the recent survey related to the building of Helsinki 2050 Masterplan (Kahila-Tani, 2015b; Kahila-Tani, Broberg, Kyttä, & Tyger, 2016)³. Generally speaking, participatory GIS can be identified as "enabling tools" (Horelli, 2002) that provide geo-referenced statistical spatial data.

The term "public participation geographic information system" (PPGIS) was conceived for the first time in 1996 at the meeting of the National Center for Geographic Information and Analysis (NCGIA) in the United State to describe

how GIS technology could support public participation for a variety of applications with the goal of inclusion and empowerment of marginalized populations (Brown, 2012). Despite its increase both in the academic and public debate, the definition of PPGIS is still nebulous, or rather, different methods and variety of applications, brought to a partition of participatory GIS. Many labels have been used over the years to describe them: participatory GIS (PGIS), public participation GIS (PPGIS), community-integrated GIS (CIGIS), bottom-up GIS (BUGIS) (Talen, 2000) or, considering one of the most recent labels, SoftGIS (Kahila & Kyttä, 2009), much closer to the recent developed web-based software. Anyway, over the last decades different backgrounds and contexts have brought diverse vocabularies to the field of PPGIS (Tulloch, 2008), and some other labels have been used such as “volunteered geographic informations” (VGI), which are different from PPGIS. VGI are described as tools that can be harnessed to collect a large variety of geographical information, from base maps (e.g. Open Street maps) to information regarding community engagement, focusing of some sort of local needs that could not otherwise be addressed via geographical information (Kahila-Tani, 2015). To make a clearer distinction, it can be stated that whereas the PPGIS studies mainly target to collect data to some research question, as these are mostly used in research projects, the VGI tools are developed to create, assemble and disseminate voluntarily produced geographic data on any topic public finds relevant (Goodchild, 2007; Hall, Chipeniuk, Feick, Leahy, & Deparday, 2010; Kahila-Tani et al., 2016).

Differently from VGI, Participatory GIS (PGIS) and Public Participation GIS (PPGIS) (Brown, 2012; Brown & Kyttä, 2014) comes from the need to collect objective data regarding some specific topic for research purposes, or rather to pursue a more inclusive decision-making process. Both PPGIS and PGIS promote «the inclusion and empowerment of marginalized or under-represented populations in the development and use of spatial information» (Brown & Kyttä, 2014, p. 125).

Table 1. Characteristics of PPGIS, PGIS and VGI. Source: (Brown & Kyttä, 2014)

	PPGIS	PGIS	VGI
Process emphasis	Enhance public involvement to inform land use planning and management	Community empowerment, Foster social identity, Build social capital	Expand spatial information using citizens as sensor
Sponsors	Government planning agencies	NGOs	NGOs, ad hoc groups/individuals
Global context	<i>Developed</i> countries	<i>Developing</i> countries	Variable
Place context	Urban and regional	Rural	Variable
Importance of mapped data quality	Primary	Secondary	Primary
Sampling approach	Active: probability	Active: purposive	Passive: voluntary
Data collection	Individual, e.g. household sampling	Collective, e.g. community workshops	Individual
Data ownership	Sponsors of the process	People and communities that created data	Shared, e.g. data commons license
Dominant mapping technology	Digital	Non-digital	Digital

1 / Professor at Aalto University, in Open Space(s) Design sixth seminar, she presented the lecture Human aspects and urban open spaces, 27th February 2017.

2 / Open Space(s) Design cycle of seminars, organized at Milan Polytechnic by Professors Andrea Arcidiacono and Eugenio Morello with the contribution of PhD candidates from 32th cycle in Urban Planning, Design and Policy. More info: <http://www.openspacesdesign.polimi.it/>

3 / In Finland participation plays a key role in public policy-making since at least three decades, when in 1980 it has been legally acknowledged in various parliamentary Acts. Land use and planning began around the first 1990s' to informing local people of decision-making and land use planning. The Land Use and building Act (1999) emphasizes participation, collaboration and transparency in planning practices, aimed to ensure the involvement of all relevant participants in planning activity. The Act has been overhauled in 2013 (Kahila-Tani, 2015b).

Tulloch (2008) described public participation GIS (PPGIS) as a «field within geographic information science that focuses on ways the public uses various forms of geospatial technologies to participate in public processes, such as mapping and decision making». Whereas PGIS is used as a development tool to encourage community identity, empowerment, creation of social capital, and also to promote social justice and equity (Brown & Kyttä, 2014), PPGIS appears less related to socio-economic marginalization (although this may be present), but is more related to the enhancement of participation processes that can improve the quality of land use decision.

In the light of this aspect, social capital building and community identity may result from the PPGIS process itself, albeit as secondary element compared to the quality and representativeness of the data (ibidem). A more detailed overview of the main differences among PPGIS, PGIS and VGI is provided in Table 1.

In general, participatory mapping practices may include four main objectives: (1) the description of current or rather historical connection of place(s), (2) the identification of place qualities, values and conditions, (3) the identification of current behaviour patterns or everyday practices in specific settings or topics, and (4) the investigation on inhabitants' preferences for future land use and management.

Knowledge of residents' perceived quality and use of their living places is considered here as particularly useful though this sort of information is still not normally given credit by professional planners (Kahila-Tani, 2015b). To the opposite, some institutional barriers affected the self-serving assertion around public participation, which is still sometimes used to confirm political legitimacy or as a need to be taken care just during the end of planning processes (Kahila-Tani, 2015b; Vicari, 2005). Traditional public participation processes may still favour interest groups and active minorities, especially development interests, while under-representing the "silent majority" of public stakeholders (Brown & Kyttä, 2014). One of the latest methods in the field of participatory GIS is based on PPGIS experiences, with the aim to move forward on the inclusive pathway, as a way to allow residents' to characterise their local environment in a bottom-up manner (Talen, 2000). This implies a process of knowledge creation that relies on localised and experience-based information provided by the individuals, improving the already well-developed PPGIS. These recent tools are labelled as "SoftGIS" (Kahila & Kyttä, 2009).

2.2 SoftGIS: a bridge-builder method for participatory planning

Several PPGIS methods have been used in Aalto University, where the development of the SoftGIS methodology has been ongoing since 2005 in close cooperation with planners. The development of the softGIS method emerged in Finland as a distinctive, urban-focused internet tool for participatory mapping with the goal of identifying the relationship between environmental factors, and local experiences and everyday behaviour (Brown & Kyttä, 2014; Kahila & Kyttä, 2009; Rantanen & Kahila, 2009). Its methodology is an example of an Internet-based PPGIS methodology that allows residents to communicate localized experiential knowledge (Kahila & Kyttä, 2009; Kyttä, Kahila & Broberg, 2011). SoftGIS leads planners and researchers to investigate on citizens' everyday lives: how they are organized in their living place, what are their perceptions about the quality of life, what can be improved where they live. This is made possible through a collecting process of place-based both positive and negative experiences (Manzo, 2003) residents have about their physical environment. The main potentiality of SoftGIS is its internet-based application that can facilitate the use and diffusion of the tools, although some parts of population could be still under-represented, i.e. the elderly people who are less familiar with the use digital instruments.

Table 2. Key principles of SoftGIS methods. Source: Kahila & Kyttä, 2009

1	Operationalization of perceived knowledge is grounded in the theories of humanistic geography and environmental psychology.
2	The perceived knowledge is gathered through scientifically valid, reliable and ethical methods.
3	SoftGIS methods are developed in cooperation with urban planners, who can use this novel knowledge in their planning practices.
4	The database makes systematic GIS and statistical analyses possible.
5	The methods provide a user-friendly internet platform for residents to evaluate their everyday living environment.

However, the web-based feature allows a more user-friendly research method, because IT and software knowledge are not needed, whereas an internet connection is basically the only mandatory request. SoftGIS methods are built on the principles summarized in Table 2 (Kahila & Kyttä, 2009), based upon the purposes typical of the whole PPGISs. Finnish scholars and researchers (Kahila & Kyttä, 2009; Kahila-Tani, 2015; Kyttä, Broberg, Tzoulas,

& Snabb, 2013; Kyttä et al., 2011) identifies SoftGIS as a “bridge-builder” that thanks to web-based GIS application creates connections and field of participation between residents, researchers and urban planners.

These methods promote the sharing of residents’ experiences and behaviour concerning their living environments. The first softGIS prototype was launched in 2004 in Järvenpää, Finland. By fall 2007 five different softGIS methods had commenced in six different Finnish municipalities (Kahila & Kyttä, 2009).

The history of SoftGIS development can be synthesized into four main steps (Figure 1), which have conducted until the latest upgraded versions of web-based softGIS (i.e. Maptionnaire, by Mapita Ltd.; see Chapter 3). The qualifying term “soft” refers to the subjective and qualitative nature of the mapped attributes as a contrast to the “hard”, spatial data layers usually associated with GIS tool. Although the participatory mapping method appears similar to other PPGIS internet applications, an important point of distinction is that softGIS methods have been used in the town of Lahti to map children’s experiences and behaviour (Kyttä, Broberg, & Kahila, 2012). Today softGIS tools include administrative pages that allow the creation of a new PPGIS survey easily and include online data visualization tools (Brown & Kyttä, 2014).

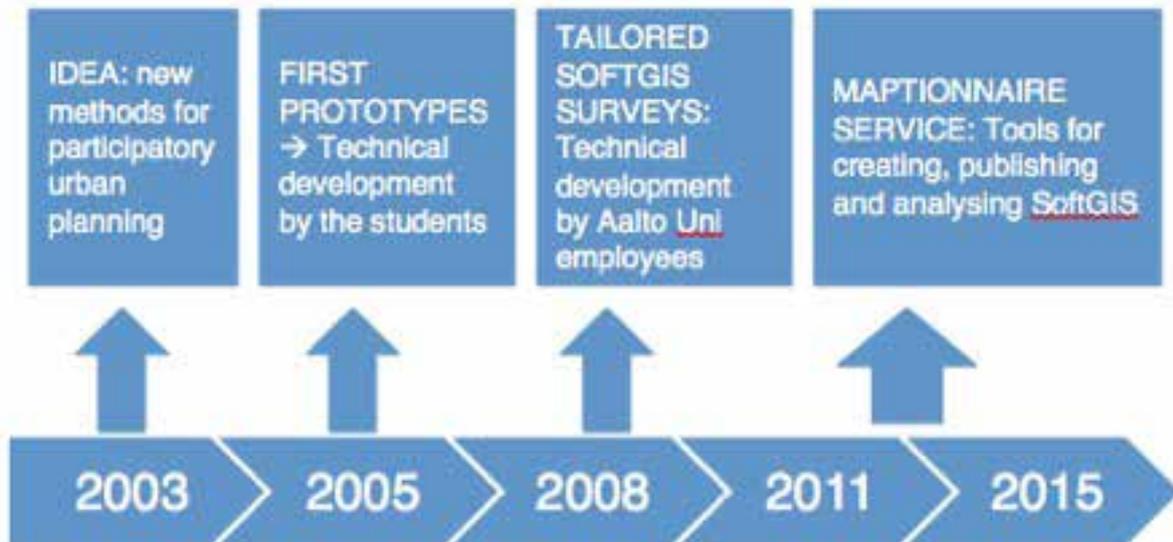


Figure 1. Timeline of SoftGIS development. Source: author’s construction based on slide provided by Marketta Kyttä at Open Space(s) Design Seminar n. 6, 27th February 2017

The development of SoftGIS was aimed to cope with some unsolved issues related to participation in urban planning, even after the Land Use and Planning Act (1999). These unsolved knots, also noticed by PPGIS researchers, were the following: (1) handful of people participating in PPGIS practices; (2) a timing of participation affected by delay; (3) the weak influence of participation in planning processes; (4) the concentration of resisting changes; (5) invisibility of data collected, and (6) an increasing demanding of citizens participation. SoftGIS development has been identified as a solution to these issues, finding its focal point in the web-based approach, but not only. In addition, “soft” methods can be today exploited to study a wide range of topics, such as perceived safety, urban mobility, quality of life, or experiences concerning the green environment. In each case, relevant research literature and expert researchers should be consulted before to produce valid, reliable, theoretically and practically well-operationalized methods (Kahila-Tani et al., 2016).

With the help of SoftGIS techniques, the perceptions of the residents are combined and analysed along with the information concerning the physical structure of the city, for example, the density, the type of land use, the amount and quality of the green areas, the connectivity of urban structures etc. (Kahila & Kyttä, 2009).

The potentiality of SoftGIS can be found in their ability to provide tangible means to help planners, policy makers and citizens of varying backgrounds build consensus about the design and development of a place (Kingston, 2007). In this sense, a twofold meaning of SoftGIS utilization can be identified: on one hand, it can lead to increase citizens’ participation designing pathways of active citizenship that enable people to achieve a multitude of benefits by becoming more actively engaged in their communities (ibidem). On the other hand, it leads planners and researchers to ask how the everyday lives of the residents are organized, what kind of place-based positive and negative experiences (Manzo, 2003) residents have and how they behave in their physical environment. This knowledge is collected through user-friendly internet-based applications (Kyttä and Kahila, 2006; Rantanen and Kahila, 2008). Furthermore, it remains crucial the hard, spatial dimension of SoftGIS methods. Figure 2 describes through four different layers the experienced, lived and physical environment that characterize the application of SoftGIS programme. The active role of all the participants to a SoftGIS project, has significantly changed over the last years, when web-based practices to improve the active role of citizens’ have been designed.

2.3 Further development of SoftGIS: Maptionnaire

Recently, SoftGIS practices found a significant field of development in the already mentioned web-based mapping tools, in order to reach the widest possible crowd to be engaged and included in participatory planning practices. In this way, participative mapping looked a growing of its qualitative feature, indeed, compared with the traditional 'hard' GIS data, all SoftGIS data are qualitative by nature because they are based on the residents' experiences and behaviour.

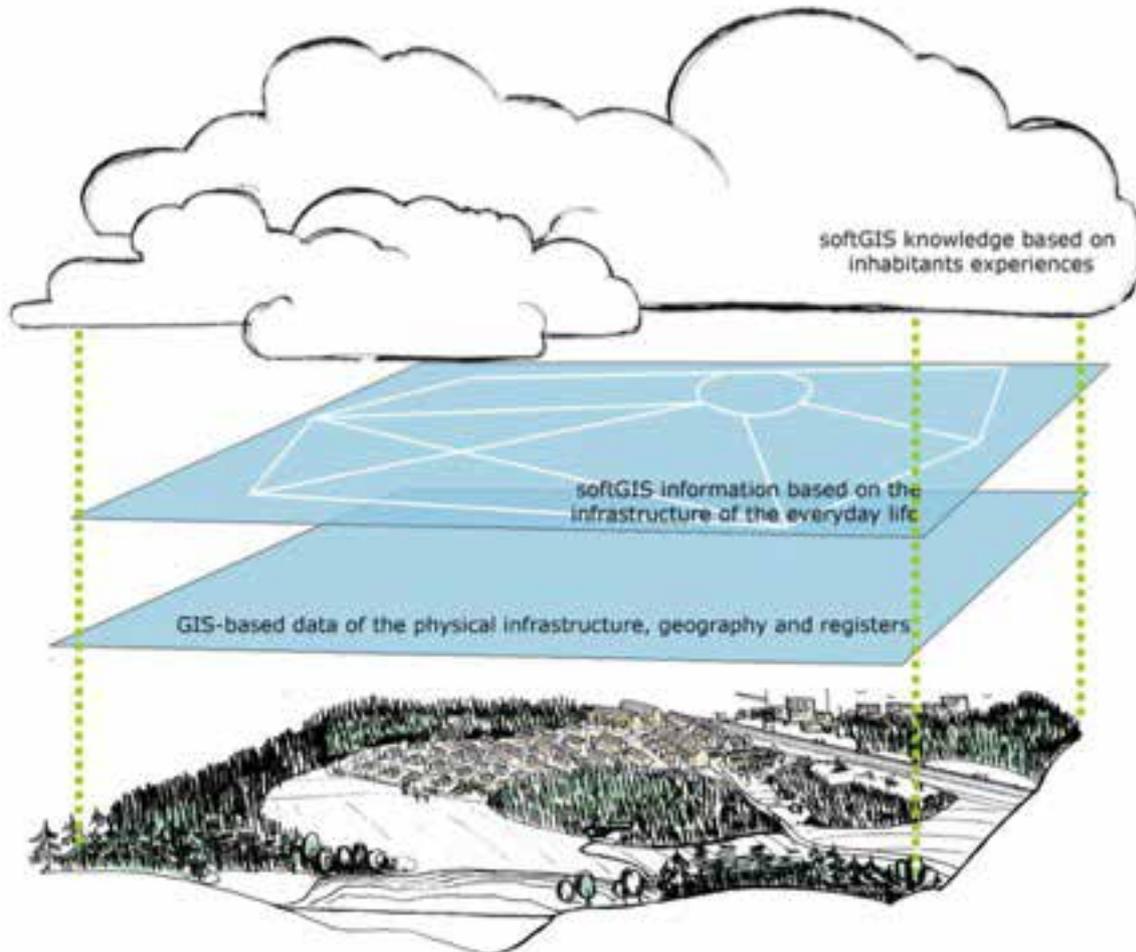


Figure 2. Sequence of layers. From everyday life and individual experiences to physical environment. Source: Kahila, Kyttä (2009)

Only later, they can be analysed into quantitatively (with the classified, closed questions), even maintaining a qualitative part (with the mapping of "stories" or experiences that the residences attach to their meaningful places). Web-based SoftGIS are aimed to increase the role of citizens' knowledge and perceptions in further planning activities based upon the mapping activity. In other words, the individual knowledge that we all have can turn to public understanding through crowdsourcing. As such, this knowledge that can accumulate in the wisdom of crowds through formal or informal procedures – making participation more effective – can be better reached through the knowledge-informed, by connecting the instrumental and deliberative action planning approaches. Web-based SoftGIS enables to cope with the issue of citizens' participation providing a solution to a constantly thorny key issue. As current participation methods inadequately support democratic participation possibilities (Healey, 1997; Kingston, 2007), web-based methods can make participation more democratic, because they free participation from the limits of time and place and they can potentially reach large numbers of inhabitants anonymously. Face-to-face meetings and conversations are certainly needed, but internet-based methods have an increasingly important role in the communicative planning processes (Kahila & Kyttä, 2009).

A more systematic development took shape with the web-based process, that continued at Mapita Ltd, a company established because the researchers wanted to allow cities to use SoftGIS in their urban planning practices more frequently (Kahila-Tani, 2015b). This development process in respect of the editor tools for SoftGIS and PPGIS tools was put in place and subsequently named "Maptionnaire"⁴, and its headquarters is based in the city centre of Helsinki. Maptionnaire could be used as a research tool but also as a participatory tool (PPGIS). It is much more user-friendly and technologically advanced compared to the preliminary experimentations. In a way, Maptionnaire

creates an interactional trading zone (Balducci & Mäntysalo, 2013; Galison, 2010; Gorman, 2010; Kahila-Tani, 2015b; Saporito, 2016) where urban planners, researchers and citizens' interact in a dynamic dimension and find a sort of interlanguage, a shared way of communication where SoftGIS is a material medium.

On this basis, The development work at Mapita Ltd has taken the form of an interlanguage trading zone because of the more stable and ongoing relationship between developers and the customers that has enabled the co-evolution of a new technology (Gorman, 2010; Kahila-Tani, 2015b). On the website, Maptionnaire presents the activity as a four-steps pathway (see Figure 3). Maptionnaire has been utilised in several studies in the whole Finland, but right now the most significant investigation is that for support Helsinki Masterplan 2050 (Kahila-Tani, 2015b; Kahila-Tani et al., 2016), where with Maptionnaire, residents' insight on their living place can be reached along the planning process. Over the last five years, Maptionnaire has been used to design and create surveys for different aims in eleven Finnish cities, after a prototype trial version used in Vaasa. A first experimentation has been carried out in the town of Lahti, to evaluate whether it is a "child-friendly" city.

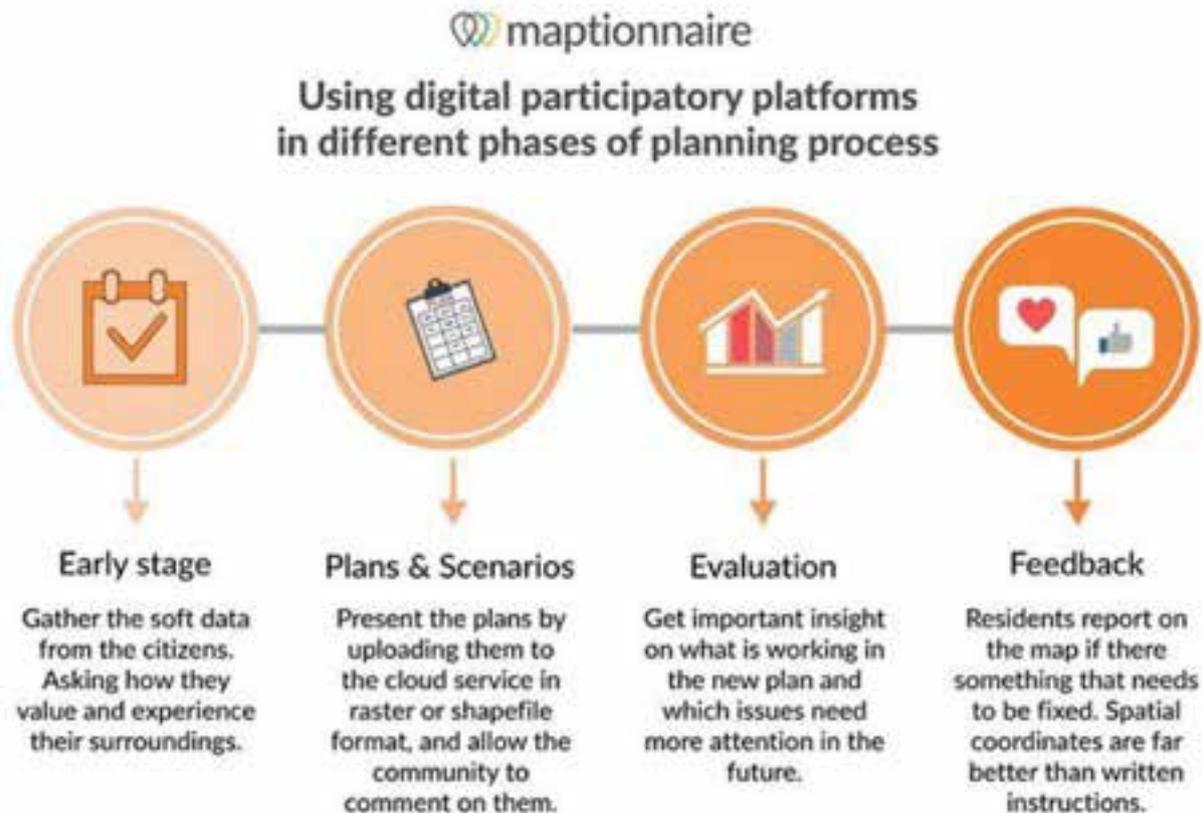


Figure 3. Maptionnaire, phases of planning process in SoftGIS. Source: maptionnaire.com

Subsequently, four more surveys have been developed in Lahti. Kouvola, Riihimäki and Kirkkonummi are the other three cities where more than a single mapping project has been advanced. In Turku and Porvoo, Maptionnaire has been used for objectives related to the Masterplan, whereas in Joensuu, the mapping was aimed to catch the ideas for a park planning. Without any doubt, Finland represent the best field of experimentation of SoftGIS in Europe, and other Nordic countries, Sweden in particular, are going to be involved in Maptionnaire use. Overseas, the American city of Denver represent a virtuous case.

Maptionnaire set out a pricing list for the utilization of their services, and to have a first sight on how it works, a trial version is provided on the website. This market-led attitude is due to the need to sustain their research and planning activity, but it transformed SoftGIS as a reachable tool for both researchers and public administrations.

3. Further questions

In order to encourage local knowledge, participative mapping tools address specific urban situations, as introduced in the brief overview of Finnish experimentations. Nevertheless, the investigations about specific plans (such as in Helsinki, for the the 2050 Masterplan) or cities' promotions (such as Lahti as "child-friendly" town) do not tackle

particular urban situations, but rather they are encapsulated in specific wider debates. On the contrary, SoftGIS utilization is applicable to concrete urban settings and conditions, in order to achieve a better understanding of the societal needs within specific urban areas. Based on what argued by Corburn (2003), for instance, the encouragement of local knowledge through participative mappings can be helpful in improving urban planning for communities facing environmental and health risks, pursuing an interplay with the professional knowledge. Along with this, SoftGIS tools are suitable for the collaborative mapping of local resources within traditionally vulnerable urban areas. For example, the research group "Napoli Monitor" carried out "MappiNA", a participative mapping project in the traditional fragile areas of the historical city center of Naples. I argue that this effort would receive benefits from an integration with SoftGIS practices, to bridge the local-expert knowledge interplay. The identification of places for "sociality" in fragile and poor city neighbourhoods would respond to a twofold objective: enhance citizens' inclusion and cohesion in a socially vulnerable area on the one hand, identify the local resources for the inhabitants, on the other hand. In a time where social cohesion and citizens' inclusions are fashionable promoted issues, collaboration should be fostered and encouraged in manifold ways.

By tackling environmental risks, collaborative mappings could address specific problems, particularly in densely inhabited urban areas. In Northern Milan area, for instance, the underground river Seveso frequently floods when storms occur, causing damages and diseases to the whole area. An effort to identify the most critical areas, i.e. the "core places" of floods, noticed by inhabitants, could bring to tangible outcomes if carried out through specific participative mappings, where citizens would pin down the most critical areas.

In this respect, before to conclude, a discussion is needed in order to look at the further development of Maptionnaire, together pointing out fields of utilization. In August 2017, I had the opportunity to meet in Helsinki Festa Isufi, sales & marketing officer of Mapita Ltd, to discover something more on Maptionnaire, and to find an answer to the following questions: can Maptionnaire be used for a mapping project related not only to strictly urban issues, but also for welfare aspects? To what extent is difficult the inhabitants engagement? Would you be interested to support a SoftGIS utilization in an Italian context? The reactions have been positive, and can be synthesized in the following points:

1. There are no limits for Maptionnaire utilization. Welfare issues are strongly related to the urban environment therefore it is definitely possible to cover more topics in a mapping project. The main issue here, is to build a very clear questionnaire and to specify what "welfare" means, maybe focusing on a single topic with a survey, and later collecting other surveys.
2. Inhabitants' engagement is always at stake. For Helsinki Masterplan 2050, just around 1% of inhabitants participated to the survey, but the most important thing is not quantity, but rather the quality of data, that with SoftGIS is very innovative.
3. SoftGIS is growing, and each country is welcome to interact with Maptionnaire researchers. There is an indicative pricing list, that is actually aimed to make it clear to the local administrators that is not a free-service or an open source, but rather a web-based and open-to-all investigation tool.

As regard to the first point, an entering in the local welfare field of study can be helpful for SoftGIS development, also in order to strengthen the improvement pathway, that must therefore be trans-disciplinary, and the practical knowledge of different actors of urban planning must be applied therein (Kahila & Kytta, 2009).

At this stage, some other unsolved questions, also on the theoretical side, are still outstanding issues. On the final pages of his doctoral thesis, Kahila-Tani (2015) points out that additional empirical evidence is required to clarify whether these tools make participation process more transparent, effective, support learning and produce innovative solutions and, in the end, effectively enable the creation of high quality living environments. It is important to understand whether and how SoftGIS tools, considering their place-based feature, can influence the public policy-making on the local scale (i.e. the urban scale coincident with a Municipality). Their usefulness is unquestionable, albeit it is still not enough clear whether they can be seen as concrete tool of planning, or rather as a survey tool that can be helpful for public administrations. I argue this is an unsolved issue, and experimentation outside of the well-structured Finnish context could give us some suggestions in this regard. Within a framework like the Italian one, where public administration is affected by a lack of resources due to the economic crisis, and citizens' participation is seen as a mere keyword not always adopted as a fundamental element, developing a mapping project to foster active participation could be helpful, also because our environment is still not very familiar with these kind of tools, still preferring the traditional web-based surveys.

Can SoftGIS concretely exploit place-based research approach? Here, the central question is not who organizes participation but instead how the different participation practices can be linked together, and the information produced adapted more specifically to the planning process. SoftGIS can design a pathway, even in Italy, for proper partnership where residents and urban practitioners can jointly engage in real innovative process of collaboration (Kahila-Tani, 2015b). In this sense, the explorers of new public participation methods should put more emphasis

on the evaluation of the success and effectiveness of the process and outcomes to validate the use of these new participation methods (Kahila-Tani et al., 2016). SoftGIS can be seen as somehow a way to support a kind of “agonistic planning”, striving to hear the plural voices of society entails the emergence of divergent and conflicting views as well (Backlund & Mantysalo, 2010). The place-based nature of SoftGIS can also enrich, in a way, the current debate in the field of participatory planning research, which is highly critical of a top-down model of planning system that does not leave space for genuine participation (Kahila-Tani, 2015b). With a place-based approach, a more detailed attachment to the local needs can be possible, reaching the voice of residents by emphasizing different opinion and making them interact with the institutions. The very place-based nature of urban planning encourages the adaptation of GIS techniques also to communicate with the public and decision-makers (Nedovic-Budic, 2010). According to the Finnish experiences, including those from Maptionnaire, urban planners seem to be keen to have place-based experiential knowledge integrated into their systems (Kahila & Kyttä, 2009).

Conclusion

This contribution presented a brief description of PPGIS instruments, focusing its attention on the most recent SoftGIS practices and strengthening their potentialities on the investigation processes on citizens’ need and residents’ knowledge on their living place. More important, Participatory GIS enriched the debate about participatory urban planning, providing an additional tool to increase citizens’ participation. Participatory GIS are supposed to improve the extent of active participation and citizens’ inclusion within the urban planning field, and considering the most recent web-based improvement, they can reach a broader number of people, although elderly people risk being excluded from their utilization due to their low knowledge of IT systems. In this sense, the use on Internet can perhaps facilitate the use of SoftGIS by people non-expert in technology. Web-based GIS services have a lot of potential to become established information frameworks for city authorities, urban planners and lay people in the future (Kahila & Kyttä, 2009). The main issue, as described in the previous chapter, is on the possibility of SoftGIS to be concretely part of planning process, and not only a tool of investigation. As regard of this, the discourse can be shifted on the issue of participation and inclusion, leaving in the background, the geographic configuration of Participatory GIS data.

Nevertheless, further utilization of these methods has to be encouraged through scholars, bridging different gaps: the diffusion of Soft techniques beyond the expertise “enclaves”, such as Finland, on the one hand, and the different IT knowledge in GIS software beyond scholars with different research profiles. In this respect, the field of planning can act as a “bridge”, as it can boost the long-standing debate on the participatory planning process (cf. Forester, 1999). Furthermore, in more practical hand, advancement of mapping techniques able to provide direct information from inhabitants and non-experts, is an important step toward a closer relationship between research and practice, or rather, between policy-analysts and policy-makers.

The future challenge for the development of PPGIS tools and methods will be to provide opportunities to achieve discourse and collaboration, rather than simple collection of spatial data. For example, if web-based PPGIS tools collect spatial data from a regional population, that spatial data can provide the foundation for smaller-scale, interpersonal engagement and discourse in the planning process (Brown & Kyttä, 2014). As stated in the first part of the paper, PPGIS can be identified as a way to enhance the “capability for voice” (Sen, 1992, 2010) of residents about their place of living. This theoretical concept can justify the possibility to adapt SoftGIS tools to a mapping research on welfare issues. It could be a great field of development for Participatory GIS to legitimize their already discussed usefulness.

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