Living Environment Information Services – Enhancing the Collaboration between Authorities and the Citizens

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1 ABSTRACT

The environmental planning is shifting towards a more open and collaborative direction. Nowadays it is widely recognized that citizens ought to have not only the right but also genuine possibilities to influence the planning and the decision making concerning their living environment (e.g. Puustinen 2004; Healey 1997, Fischer 2000). In Finland, the renewed Land Use and Building Act came into force in 2000, announcing that in a planning process it is obligatory to offer opportunities for the citizens to take part in. However, despite the change in law and attitudes, there have been difficulties in integrating the citizens' knowledge and views into the planning processes (Bäcklund 2007, Leino 2006, Puustinen 2006). Hence, the knowledge should be incorporated into the planning more efficiently, so that the citizens' views can have a genuine impact on the decisions made. (Bäcklund 2007, Staffans 2004).

Electronic services, such as public participation GIS applications, are suggested to help bridge the gap between authorities and the citizens. It is said that gathering citizens' knowledge attached to its geographical whereabouts enhances the integration of the knowledge into decision-making practices (Kahila & Kyttä 2009). Fagerholm (2012) also stresses the importance of locating knowledge when gathering citizens' opinions. By developing new tools for planning, the Living Environment Information Services, participation will be made easier for the citizens and the authorities to utilize. But how will these three internet applications enhance openness and collaboration between authorities and citizens?

Firstly, with the help of Alert service Tarkkailija (Observer), citizens will be integrated more efficiently into the decision making at the very early stage of the planning process. As the Finnish name of the service suggests, it serves as an observer, alerting the citizens on the planning concerning their environment. Secondly, with Enquiry Service Harava (Rake), citizens will be able to express their opinions and views on a map so that the planning can be directed to the geographical whereabouts. The name of the service stems from the metaphor that information can be gathered widely and efficiently as if raking leaves. What is more, this experiental knowledge gathered with Harava can be taken to Liiteri, the Information service, where it can be analyzed and examined freely. The name of Liiteri (Shed) represents its role as an information storage or a shed, where a wide range of data can be collected and stored. By opening the data used in the planning process, the decisions made will be better justified. These three services are part of SADe, the Action Programme on eServices and eDemocracy which aims at making public administration more efficient and customer friendly.

2 LIVING ENVIRONMENT ESERVICES AS A PART OF THE SADE PROGRAMME

The national development project Action Programme on eServices and eDemocracy (SADe) is currently underway in Finland. SADe programme runs until the end of 2015 and it is among the Government's key projects. SADe is coordinated by the Ministry of Finance in Finland, and Living Environment Information Services are a part of the programme. The objective of the programme is to create eService packages that enhance the cost-efficiency and quality of the public sector and are used by citizens, companies and the authorities alike. The services in the SADe programme are created to provide citizens, companies and organisations with smooth and efficient eServices (The Ministry of Finance 2013). The premise is also to make services more readily available, regardless of time or place. These new services will enable the creation of new means of participation and interaction, of which the services presented in this article are only one example.

According to Steinmann, Krek & Blaschke (2004) there are only few truly interactive GIS-based applications for web based public participation. They say that web based Public Participatory Geographical Information Systems (PPGIS) applications have developed at the same pace as the theoretical analysis concerning the theme. Also Hawthorne (2004) points out that participation in web based systems is difficult to maintain over an extended period of time. Academics, who in many instances develop and uphold these systems are often

overworked and they lack funding and time. Now ten years have passed and we see clearly that the situation has changed. Development around PPGIS applications and services has been progressive and in Finland the Environmental Administration is taking the consciousness into national level.

Harava, Tarkkailija and Liiteri are a part of the Ministry of the Environment's eServices for Housing and Building package. It provides electronic services related to housing and the built environment. They can be used when applying for various permits and subsidies, and for information and analysis purposes. The goal with electronic services is to improve citizens' participation opportunities and to improve the information flow between citizens, the authorities and companies. Another goal is to make it easier to collect and utilize the information required for land use planning.

Both national and international examples of the services selected for the SADe programme were sought during the initial investigation phase in 2010. There are various kinds of map-based query services in Finland, while the UK is home to such services as Mappiness. There are local planning observation services similar to Tarkkailija in Australia, under the name Planning Alerts, and in the UK, under the name TwitterPlan, among other places. Services resembling the Liiteri information service include Helsinki Region Infoshare in Finland and Mapumental in the UK.

The Harava, Tarkkailija and Liiteri services are produced in co-operation with IT providers. Bidding contests have been held to determine the parties implementing the Harava and Tarkkailija services. Dimenteq Oy and its partners will implement Harava, while Solita Oy with its subcontractors are responsible for implementing Tarkkailija. The bidding contest for Liiteri will be held in the autumn of 2013. The implementation projects were preceded by a preliminary investigation in 2010 and requirement specifications in 2011.

2.1 Alert service Tarkkailija

Most of us are likely to have encountered a situation in which we have had to search numerous sources and services for information regarding issues related to planning and building in our immediate environment, a recreational environment located in a neighbouring municipality, or the municipality in which our summer house is located. We may not have been able to resolve this issue online, having to call a municipal official. Next summer, the Tarkkailija service will be adopted in Finland. This service is developed to assist for example in situations mentioned above, providing access to online information content regarding the built environment that the user finds interesting. The service will be available throughout Finland, free of charge for all citizens.

Tarkkailija keeps citizens, companies and authorities informed on the changes happening in their environment. The service understands the meaning of information content by comparing it to an extensive concept model. It also determines the location based on the information content. Users may determine the topics, areas and projects they wish to monitor, or, alternatively, locate their area in the service and search for events related to their local surroundings.

Information content related to the built environment serves as the basis for Tarkkailija. Tarkkailija has been set to process the information content on more than 400 websites. The service "scrapes" websites for content related to the relevant subject matter on a regular basis. Screen scraping means that the service reads the content on pages, comparing it to an extensive concept model, an ontology. In the first phase, websites subjected to screen scraping and analysis will include the websites of all Finnish municipalities and other public-administration operators and public-sector projects related to the built environment. The search may also be extended to cover such things as news websites, online magazines and social media services.

Therefore, the contents of Tarkkailija exist before the service is available. This information will simply be further processed through analyses and GIS. Attempts will be made to determine locations for website content significant to the service, using coordinates, addresses and other local names. This will enable the provision of information on the basis of location and regional limits.

The service will provide end users with an alert service that will keep them abreast of news in the areas that interest them. Users must select which topics they are interested in and which areas they wish to monitor. When the alert service detects new information in the user-determined area that may interest the user, the service will send prompts to the user by email, for instance. Tarkkailija enables its users to gain a comprehensive understanding of their surrounding area, along with its services and changes. Tarkkailija is

primarily aimed at citizens, but other actors such as companies may also use it to monitor changes impacting company operations, while the authorities may use it as a communications channel.

2.2 Enquiry service Harava

It is widely known that public participation has an important role in community planning process especially at the local level. According to Graig, Harris, Weiner (2002) and Milovanovic (2003) participation is commonly considered to be positive and the new applications and technologies are welcome.

Enquiry service Harava represents one form of a PPGIS application: a map-based feedback system for collecting citizens' experiences. With Harava, organizations are able to conduct structured surveys to gain a wider perspective in decision-making. In addition to data captures, Harava can be used for nature inventories. It also functions as a question & answer platform, allowing inhabitants to ask questions from the authorities. Through the SADe programme Harava is planned to be a valuable application particularly for authorities and municipalities. The service will be easy to adopt in different kinds of organizations, for example associations and companies.

Harava enquiries' basic idea is to draw points, lines and areas on a map and specify for example why the object is a meaningful place for the respondent. A single line or a marked area informs the cityplanner very quickly where the place is and what the existing structures of the area are. Moreover, when there are more marked places, routesand interesting points, the gathered objects can be called spatial data. Every single object has coordinates and attributes and together the objects can be analysed further with the GIS software. Harava is not an analysis tool, but it enables data collection explicitly to the right formula. The information collected with Harava can easily be processed into thematic maps or other visual representations. As "a picture is worth a thousand words", the citizens' views, opinions or observations can be displayed so that the findings of the enquiries are easy to grasp for everyone. Visualisation of the GIS data is a different field of science, but one can assume that it generates more discussion than plain tables and figures. Bamberg and Lehtonen (2011) argue that visualisation of information is the key factor in creating interaction between the planners and the public.

In the Harava case, the user's point of view is two-sided. The first group of users of Harava, or other PPGIS applications, is the general public. It is often a very heterogeneous group of users who have a diverse range of world views, cultural backgrounds and knowledge. These aspects require that the systems are accessible and easy to use. For normal users Harava appears in the form of enquiries and a question & answer platform, and the user interface for the respondent is quite simple.

On the other hand, the administration aspect of the PPGIS applications is used by professionals from the different municipal sectors and organisations. All of them are not GIS experts and the level of computer knowledge is variable. Administration interface enables the construction of enquiries, maintaining online forum or nature inventories. The most important purpose is to create enquiries and it includes dozens of functionalities. To name a few: selection of backround maps, determining the scale, maintaining the user access inside the organization, writing the questions and determining the response options. What is more, the service contains former enquiries, which the admin can use as they are or develop further. The user interface also enables downloading data from the database while the enquiry is still on, so that the results can be evaluated in the middle of the process and not only after the enquiry has been turned off. Harava gives statistics easily on the number of respondents relative to time. Harava application has been tested and evaluated also from the administration perspective so that enquiries are easy to construct and maintaining the system is adoptable.

Pilot organizations have a very important role in building the contents of Harava. The group of pilots consists of 35 different organizations: municipalities, regional councils, companies, universities etc. Each organization creates an enquiry for an existing project, simultaneously creating question series available for further use. The focus of the existing enquiries is on land use planning, but there are also different themes like findings of invasive species, noise abatement, resident survey and many more. The service aims to transform citizens' location-based knowledge, opinions and ideas into an environmental planning tool for the authorities. When working together with a large scale of organizations, the goal is achievable.

2.3 Information service Liiteri

The information service Liiteri is an information and analysis service, where one can not only search for information on the built environment, but also analyze and make visualisations of it. In Finland, the GIS-based information on the built environment has been dispersed in various different registers. As the information is gathered to the Liiteri service, the information can be found and utilized more easily. Liiteri consists of a map section and a statistical section, which are dynamically interactive. Therefore, a lot is expected of the new service: usability, combining different kinds of information and new information contents.

The information content consists of data concerning urban structure, population, buildings and housing, jobs and commuting, mobility and transport, services, recreation, natural resources, cultural environment and land use, for example. The information is mainly produced by Finland's environmental administration, Statistics Finland and Population Register Centre.

Liiteri is mainly targeted at authorities in municipalities for implementing their regulatory assignments. Until now, a major part of the information has mainly been easily available only for the authorities. However, with the help of Liiteri, also inhabitants will be able to obtain information on their living environment. The interesting contents for the citizens are related to the quality and planning of their surroundings. The service provides users with ready-made thematic maps and statistics on for example accessibility of services, which also helps the inexperienced user to make use of the data. Furthermore, the service serves for both companies and research and study purposes. Using the service is free for everyone concerning the data owned by the Finnish environmental administration and ready calculated statistics.

One new and important theme for the information content of Liiteri is the perceived quality of the environment. Therefore the citizens have a significant role as producers of the data as well. As Harava offers a way of gathering uniform data all over the country, Liiteri brings the information all together providing an analysis platform. Hence, with similar enqueries made in municipal level the observation can be expanded to nationwide scale. The development of Liiteri has commenced and the service will be completed by the end of 2014.

3 CONCLUSIONS

The main purpose of developing Living Environment Information services is to bring planners' desktop closer to the citizens and on the other hand the services give numerous possibilities for planners to gather information, ask opinions and get perspectives from the inhabitants. The aim is also to construct applications that are quickly adobtable in any demographic range. The idea is that these services will support one another (see figure 1).

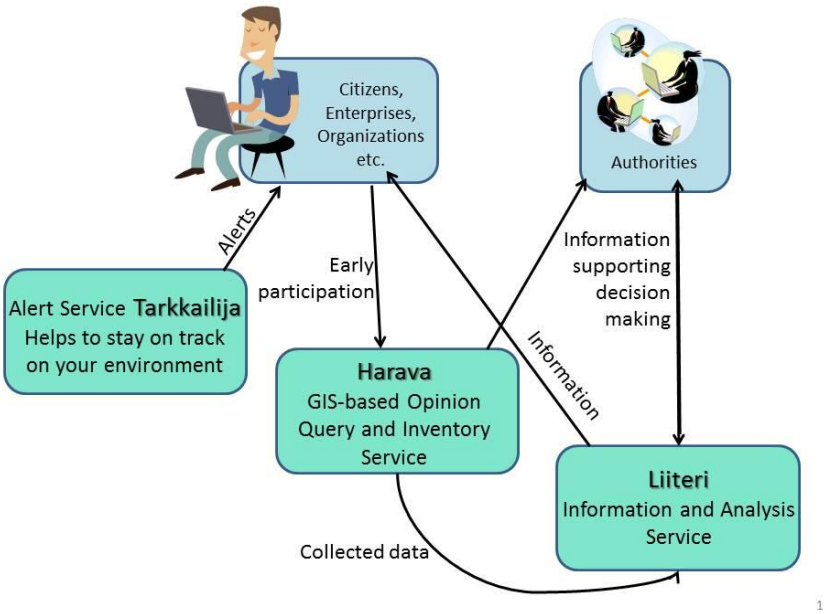

Figure. 1: Synergy from the interaction between eServices

As Harava launches an enquiry, the inhabitants of the area are notified via Tarkkailija service. By examining the citizens' views at an early stage of the planning process the risk of conflicts will be reduced (Leino 2006; Laine & Peltonen 2003). After the enquiry is completed, the results will be transferred to Liiteri, the information service, where the information can be analysed by anyone.

More transparent governance and deliberative democracy are the main objectives. We believe that these objectives will be accomplished with the enhanced information flow due to the Living Environment Information Services. It is also interesting to see what kinds of innovations and new ideas emerge due to easier access to large amounts of information. Developing the services is a significant step concerning not only Finnish Government's open data policy but also enhancing openness and equality in Finnish planning. The thought of more thoroughly justified decisions, better planning, smoother planning processes and satisfied citizens inspires everyone working in the developing of the service package to thrive for creating functional services.

However, a change is needed concerning attitudes and ways of incorporating the citizens' knowledge into planning. The real challenge is to improve the way the knowledge produced by citizens is taken into consideration by the public administration. Therefore, there is a growing need to study the impacts of these services in planning and decision making more profoundly. By learning the defects, the services can be developed further to match the needs. Special attention should be given to the question on how the knowledge produced by citizens can be integrated into the decision making more efficiently.

The Living Environment Information Services Harava and Tarkkailija will be launched in 2013 and the expectations are high!

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