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Exploring E-Planning Practices in Different Contexts:
Similarities and Differences Between Helsinki and Sydney

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ABSTRACT

As planners and decision-makers experiment with information and communication technologies (ICTs), it's important to explore and analyze these attempts in different planning systems and contexts. The aim of the article is to compare the use of and aspirations attached to e-planning in Helsinki, Finland and Sydney, Australia. This comparison will highlight the interrelationship between planning context and its amenability to an e-planning approach and shows there are shared themes in both cases: firstly, the complexity involved in reconciling the aims of the e-planning experiments and their connection to the planning process itself (roles, objectives, implementation of tools and processes). Secondly, the way that e-planning opens up cracks in the façade of administration, and thirdly, the ways in which e-planning provides possibilities to reshape existing planning procedures. The authors argue that the different planning and governance contexts affect the adoption of e-planning and this adoption is necessarily a selective process.

Keywords: Ecology of Tools, E-Planning, Information and Communication Technology, Planning System, Public Participation

EMERGING TOOLS AND PRACTICES OF E-PLANNING

Planning has had a complex relationship with information and communication technologies (ICTs) for a long time. The introduction of ICTs in cities tends to be a turbulent and ad-hoc process, although several cities claim to be City 2.0 and even 3.0 (Anttiroiko, 2011). Graphic and mapping tools, statistical data bases and visual simulations have frequently been used in urban planning practice. More recently, a set of new technologies, many of which have quickly entered everyday or mundane use, has been developed independently of urban planning, such as community web environments, social media platforms, and locative and mobile

technologies. These technologies enable citizens to create and share data and information about local issues and the urban environment (Saad-Sulonen, 2012).

We refer to e-planning in this article, as *the sociocultural, ethical, and political practice in which people take part online and offline in the overlapping phases of the urban planning and decision-making cycle* (Horelli & Wallin, 2010, p. 3). We also take into consideration the extended range of digital tools – official, unofficial, expert, and mundane - and address their use in the context of citizen participation in urban planning. Whereas advocates of technology argue that the application of ICTs might complement or even change participation in planning (Yeh & Webster, 2004; Anttiroiko, 2011), it is important to remember the role of the socio-political context in which the technology is applied. For example, resources are spread unevenly in different sectors of government, some areas of bureaucracy may be better suited to an e-planning approach than others or a particular technology may become associated with an enthusiastic individual or champion.

E-planning includes consideration on how to use ICTs for enhancing the participation processes (Silva, 2010). However, the ways and modes of participation are changing, as well as the administration and decision-making processes too. The emphasis tends to be on new tools and structures, as well as on the timing for participation. In addition, the overall complexity of e-planning seems to change the linear process and stable power relations of planning (Wallin & Horelli, 2012). Public participation comprises multiple activities in which planners can have some discretion to choose among a number of modes of communication. Therefore, one can expect to identify a variety of uses and aspirations of e-planning in different contexts. It is important to comprehend, why some technologies are considered to be successful and others not. 'Success' in planning is highly contingent on place and history among many other factors (Pressman & Wildavsky, 1984). Understanding these contingencies can help

practitioners comprehend, how the latest wave of ICT- adoption is shaping practice.

E-planning is still a relatively new field. We have not encountered any studies (in e.g., Silva, 2010a; Budthimedhee et al., 2002) that would have compared e-planning practices as we define them in this article, in different planning and governance contexts. Yet, such comparisons can help contribute to the theory of why an e-planning tool may succeed in one context and not another. In this article we aim to explore the use and aspirations of e-planning, by focusing on the context in which they are situated, namely the urban planning and governance system. We examine the similarities and differences in the way two ICT-savvy cities from diverse cultures use e-planning, through an international comparison. Furthermore, we wish to highlight the interrelationship between a given planning context and its amenability to an e-planning approach. Finally, we will also discuss the lessons learnt in terms of e-planning theory.

Our study focuses on the adoption of e-planning in Helsinki, Finland and Sydney, New South Wales, Australia. Helsinki, with the population of almost 600 000, is the capital of a Nordic welfare state. Sydney, with a population of 4.5 million (ABS, 2010), is the capital of New South Wales. It is governed by the NSW State Government, which, like all Australian states has been particularly amenable to neoliberal reform since the mid 1980s (Beer et al., 2007). The comparison shows that there are shared themes in both. However, as we argue below, important differences exist between the two jurisdictions' approaches to e-planning which requires exploration. In particular, we show how the different planning contexts affect the adoption of e-planning and how this adoption is necessarily a selective process.

We will first explain the changing relationship between ICTs, participation, and urban planning and the evolving context in which this takes place. We will then describe and compare the two cases, and finally discuss the findings.

THE CHANGING RELATIONSHIP BETWEEN ICTS, CITIZEN PARTICIPATION, AND URBAN PLANNING

The relationship between urban planning and technology has gone through different phases since the 1960's (Foth et al., 2009). The main focus of this relationship has been on the development of Geographic Information Systems (GIS) technology for overlay mapping. GIS started as an expert technology targeted to be used by planning professionals. Later GIS technology use was opened up for the general public. The development of Public Participation GIS (PPGIS) made it possible to use GIS technology to enhance citizen participation. The development of WebGIS also meant that the technology became accessible online.

Parallel to the technologies that have evolved from the world of professional urban planning, it is also important to note the technologies that have been developed or adapted for citizen participation in general. Often referred to as e-participation tools, they comprise web portals, online questionnaires, polls, petition tools and discussion forums (e.g., DEMO-net). E-participation tools are used to support processes of information, consultation and active citizen participation, which can be integrated into the processes of urban planning (Kubicek, 2010).

The recent emergence of mobile and locative technologies, Web 2.0, and social media, has enabled a greater variety of platforms and applications to be available for use and adaptation by the broader public. These technologies, which are becoming increasingly mundane (Dourish et al., 2010), have a great impact on the everyday lives of urban dwellers or communities as they enable the collection, storage and retrieval of information in and about the city[1] (Townsend, 2009, p. xxiii; Foth, 2009). Moreover, ICTs have supported the collaborative work of urban and rural communities who undertake local development (Gurstein, 2010). Despite the potential promised by Web 2.0 and social media to provoke a paradigm

shift in e-planning towards a more participatory and creative form of planning, realities on the ground are still limited due to existing professional and technocratic planning practices (Anttiroiko, 2011).

In sum, public participation in urban planning can take place via different channels and digital tools: expert and official, but also unofficial and mundane. This implies the existence of different communities of practice (CoP)[2]. The planners and participants can choose the tool and arena that they find most suitable for them (Saad-Sulonen & Horelli 2010; Wallin et al., 2010). However, so far no deeper paradigm shift seems to exist in e-planning and in the ways it relates to citizen participation, but, as we will show in this article, the existing planning and governance context plays a role in shaping the participatory experience.

The Evolving Contexts of Planning and Planning Systems

According to Silva (2010b, p. 8), "*no information and communication technology is as important and determinant for the urban planning system as the planning theory and the policy that guide the use of the technology.*" Indeed, planning professionals around the world have been influenced by a variety of planning theories, and different countries have adopted and developed diverse types of planning practices and systems[3].

The Finnish planning system is part of the continental style of planning system that is dominant in Europe (Nadin & Stead, 2008). Planning practice in Finland is still strongly influenced by the comprehensive-rationalist approach of 1960s (Bäcklund & Mäntysalo, 2011). This means that planners and top-down zoning play an important role. Also the planning processes and citizen participation are highly centralized and regulated by laws and bureaucratic governance in the name of the public interest of the welfare state. The application of the system tends to shape the role of planning into being an elaboration of detailed plans by city planners. These are then voted

for or against by the members of the elected city council. Nevertheless, Finnish planning has also been influenced by other theoretical paradigms, such as the pragmatic and communicative approaches. The Land Use and Building Act from 2000, has been clearly influenced by the communicative turn in planning, as well as by a mix of democratic theories that range from aggregative, to deliberative and even to agonistic ones (Bäcklund & Mäntysalo, 2011).

The NSW planning system is a system born of the 1970s green bans movement. The major legislation is the 1979 Environmental Planning and Assessment Act (as of May 2012 under review). The Act was conceived as an answer to the protests against the rampant development of heritage and conservation areas in the 1970s. This Act provides a framework for the State government to produce State Environmental Planning Policies (SEPPs) to conserve environmental resources, control development, provide conditions for affordable housing and protect vulnerable ecological communities. These SEPPs are statutory documents that in some cases act as zoning requirements, but in other cases deal with procedural matters. Underneath these, local authorities and their councils produce the Local Environmental Plan (LEPs). These are also mainly zoning documents that relate to the use of land and are also statutory. Finally, local authorities must produce district control plans (DCPs). These are non-statutory and relate to detailed items such as urban design. Any development must have accord strictly with an LEP and also with any relevant SEPPs. In some cases having regard to a DCP will also help a development application gain approval.

The implementation of the planning system is closely connected to the application of public administration regimes and their policies, including governance models. Charles Leadbeater (2004) and Victor Pestoff (2012) among others, have shown, how the global shifts in governance approaches have had an impact on the trends of governance and service delivery in Western industrialized countries (Table 1). In fact, the shift has affected the ways in which public interest is defined, who defines it, the perfor-

mance objectives, the roles of the managers and users. The Traditional Public Sector-approach with top down modes of service delivery is being replaced by the New Public Management (NPM). The latter is based on criteria, such as efficiency and effectiveness. Users are clients who have to get value for tax payers´ money, for example, in order to get building permits in decent time. The model for public services and planning in the future may be, due to the expansion of ICTs, an approach known as New Public Governance. This is based on coproduction, multi-stakeholder governance and third sector provision of welfare services (Pestoff, 2012). Consequently, it will mean a new mixture of private, public, people-partnerships and solutions assembled from a variety of sources.

Despite the historical roots in traditional, Weberian bureaucratic governance, the Nordic welfare states[4], have since the 1980's been influenced, by the emergence of the NPM. This has resulted in tensions on the ground between the logic of "input-oriented legitimation" of the existing planning process, and the "output-oriented effectiveness", brought forth by the market actors. However, variations exist in the different Finnish municipalities. Furthermore, there are several informal projects in Helsinki that bear the features of the New Public Governance approach (Wallin et al., 2010; Botero et al., 2012).

In Australia, neoliberalism has generally dominated planning since the 1980s, making it a key example of how to apply the NPM approach (Gleeson & Low, 2000). The postwar historical conditions in Australia made neoliberal reform particularly likely. Unlike Finland and many other countries in Europe, Australia never developed an extensive social housing program in the post-War period, but relied instead on a range of subsidies and incentives to promote the building of social housing (Beer et al., 2007)[5]. Since the 1980s neoliberal reforms, such as trade liberalization, public fiscal conservatism and deregulation have been applied in Australia, embracing the full range of types mentioned by Jessop (2002, as cited in Beer et al., 2007). These include: the move

Table 1. Comparison between different approaches to governance and service delivery (modified with permission from Leadbeater & Demos, 2004)

	Traditional Public Sector	New Public Management	New Public Governance
Public interest	Defined by politicians and experts	Customer surveys	Dialogue between providers, funders and users at all levels
Performance objective	Manage inputs, good administration	Inputs and outputs managed for efficiency	Agreed with stake- holders including user experience
Accountability	Upwards through departments to politicians	To politicians and users through market comparisons	Directly to users, taxpayers, stake-holders and politicians
Ethos	Patrician public services, technocratic	Market-based	Democratic, personalized, user-centric
Users	Deferential	Consumers, some self-service	Co-producers
Manager´s goals	Satisfy political masters, professional self-regulation	Meet contracted performance targets	User satisfaction
Private role	Minor, kept separate	Major, in service delivery	Public from public and individual initiatives
Professional role	Decide and allocate resources	Commission and monitor	Advice, broker, advocate, assemble

from hierarchical forms of government to more porous forms of governance; the subordination of social policy to economic policy; the 'hollowing out' of the nation state with power moving upwards to international bodies or downwards to local government and finally, the tendency for policy solutions to be borrowed and adapted across national boundaries[6] (Bell, 1997).

Thus, Finland and Australia/NSW have different planning, governance and participatory systems in place. However, the level of ICT penetration and adoption in the two countries is quite high, with Australia's Internet use ranking 24th and Finland 7th overall (World Bank, 2010). What then, are the similarities and differences between the adoption and practices of e-planning in Sydney and Helsinki, and is it possible to identify the factors that affect these?

To investigate these issues interviews were held with key stakeholders involved with e-planning in both sites. E-planning direction, management and design are still reserved to a small number of specialized practitioners who are known to each other. For this reason a snowball sampling method was used to gather the names of suitable interviewees as the research progressed. In some cases the availability of these key individuals was a problem with interviews being scheduled up to three months in advance.

E-PLANNING IN A NORDIC WELFARE STATE AND ITS CENTRALIZED MUNICIPAL SYSTEM: CASE HELSINKI

The term "e-planning" (*sähköinen suunnittelu* in Finnish) is not used by the Helsinki authorities, nor by the citizens. Nevertheless, a variety of ICT-based tools are currently available for supporting citizen participation in the formal context of urban planning, in addition to the application of ICTs outside the formal planning processes. E-planning in Helsinki can be understood as participatory e-planning.

The City of Helsinki has traditionally conducted urban planning and development through exclusive negotiations with land-owners, construction companies and other business parties, as these are the actors that are able to develop the property and implement the projects planned by the City Planning Department (CPD)[7]. The requirements set up by the Land Use and Building Act of 2000 have triggered efforts in the CPD to facilitate the presentation of planning projects to citizens and to organize public hearings. Citizen participation in Helsinki mostly takes the form of consultation and public hearings, such as local citizen evenings organized by the City of Helsinki. These are regulated and integrated in the urban planning processes of the City administration. Citizens also have the possibility to send feedback, at any time, via the Registry Office, which then forwards it to the planners concerned. When new plans have been prepared, they are presented to the elected members of the City council, who then approve them or not.

The recent participatory strategy of the CPD comprises the following points:

- Deployment of special civil servants, participation coordinators, who act as mediators and facilitators between the planners and citizens. The participation coordinators play an important role in the organizing of participatory events.
- The provision of a public meeting space and exhibition centre, Laituri, for urban planning projects and competitions, in the city centre.
- The launch of web-based tools that facilitate citizen participation in the planning processes.

From Formal Consultation to Explorations in Partnerships and Community Control

The last strategy program of the City of Helsinki has emphasized the importance of developing means to increase democracy and citizen participation (City of Helsinki, 2009). The use of ICTs is referred to as a potential solution to problems around participation. This approach reflects the general attitude to technology in Finland, where it is seen in general as a positive change agent. Technology has often been imposed, as a means for citizens to enjoy public service, with the expectation that the well-educated public will easily adopt it. Although the high level of computer literacy has enabled the country to use innovative technological solutions, the approach to technology have, however, been quite top-down.

In order to understand the use of ICTs in the formal urban planning process, we interviewed the key representatives of the authorities responsible for the participatory strategy in Helsinki: a participation coordinator, two officers responsible for the development of digital tools and two architects in charge of the city planning in which e-planning tools have been applied. We asked them: What kind of e-planning tools does the City of Helsinki own and use? What are they used for? How has the data, collected with these tools, been used in planning? And, what are the opportunities and challenges of e-planning?

The interviews disclosed that five digital tools launched by the CPD are currently used by planners and participation coordinators (Table 2).

First of all, there is the website of the CPD that contains information about all planning projects including maps, general data and descriptions of the expected progress. Then, the "CPD forum," a discussion forum with topics that are set up and moderated by the CPD, which is connected to the main website. Another tool, the "Plans on the map," makes it possible to view plans online. These tools form the basic instruments of participatory e-planning, as they provide information and a place for casual discussion.

Lately, the CPD has expanded the way they organize planning competitions. Information concerning how to participate in the competitions is available online. In the case of the South Harbour competition, the CPD held workshops with people on the streets, and collected their

Table 2. Examples of official and unofficial e-planning tools used for citizen participation in Helsinki in terms of the context, level of citizen control and the phase of the planning cycle

Name of the tool	Application in "formal" planning	Application in informal planning	The level of citizen control	Phase in the planning cycle
Official tools				
CPD site	The official website of the CPD. It contains several sections about the objectives, content and progress of the development of ongoing or future planning and development projects		Information	In use throughout the planning process
CPD forum	An official discussion site where the discussion topics are set by the CPD. It is used to get feedback about local or city-level issues or to comment existing or future plans		Information and consultation	Can be used at any phase but with no binding role
Plans-on-the-map	A map-based tool, where all new plans are collected and published.		Information	In use when the plans are being constructed
Planning competition tool	A website that gathers information about the regulations and content of a specific planning competition		Consultation	A tool under experimentation
Tell-it-on-the-map	A questionnaire-based mapping tool that enables the gathering, analysis and dissemination of public opinions about specific urban planning issues. The topics are set up by the CPD.		Consultation	At the beginning of the planning process, or after the plans have been done or implemented, as part of Post Occupancy Evaluation (POE)
Unofficial tools				
Urban Mediator (UM)	An online map-based tool that allows both citizens and planners to set up a topic of interest and ask for contributions to the topic.	An online map-based tool that allows both citizens and planners to set up a topic of interest and ask for contributions to the topic.	Consultation/ partnership	At any phase but especially at the beginning of the cycle and in POE
Neighbourhood web sites (the platform is freely provided by Helka ry, an NGO)		Local web sites, used for community development with interactive digital tools	Partnership & community control	Highlights any phase if necessary
Social media (e.g. Facebook pages) and blogs		Social media for low-threshold interaction possibilities and information sharing	Partnership & community control	

views on the future of the area. The material was collected in a report, which was published online, using the City of Helsinki data repository. Thus, the City has finally translated public feedback into planning discourse and enabled citizens' voices to reach the architects and the decision-makers. It means that the traditionally closed institution of the planning competition is slowly being opened up.

Also another new application is currently available, namely a survey tool called "Tell-it-on-the-map." It has been created to gather and process urban data in a participatory way. This online mapping tool gathers the feedback and comments of local people on specific themes brought up by the CPD planners, such as a local planning case, or the necessity of beginning a planning procedure on a certain site.

Individual planners and the participatory coordinators from the CPD have also explored the use of un-official tools, not provided by the CPD, in various pilot projects. For example, the Urban Mediator[8], which was developed as a publicly available online map-based tool (Saad-Sulonen & Botero, 2010), has been used in two cases involving the CPD.

In addition to the formal participation processes led by the CPD, residents in Helsinki have explored new ways of being active, often through the use of ICTs. The use of blogs, wiki and social media is relatively recent. However, as early as in 2006, the residents experimented with online tools at hand to highlight problems related to their living environment (Saad-Sulonen, 2008). The City of Helsinki has not yet embraced these popular platforms, as a means to enhance citizen participation, except for the Facebook page of Laituri, which is currently used to inform viewers about the latest developments in the South Harbour competition. However, other departments, such as the Youth department, are present on Facebook, but they have a minor role in urban planning.

The neighborhood of Herttoniemi[9], has been an interesting living laboratory for citizen activism that is supported by the use of the local neighborhood website, as well as blogs and social media. The local neighborhood associations and other NGOs have played a key role

as a counter force to the official urban planning of Herttoniemi centre, by empowering local people to voice their views. The latter have been the main organizers of the local NIMBY (not in my backyard) movements, for example by opposing to the construction of small rental apartments instead of building widely needed family dwellings in the neighborhood.

However, the local community has also developed a YIMBY (Yes in my backyard) approach. During the past five years, they have updated their computer and Internet skills, as they have familiarized with the practices of community informatics[10]. They have used different social media to collaboratively set objectives and even to steer, to some degree, urban development. YIMBY activism also includes guerrilla gardening, squats and citizen activism (Kopomaa, 2011). For example, a group of parents in the Roihuvuori part of Herttoniemi has actively lobbied against the decision of authorities to close a kindergarten. They have set up their own blog and Facebook page to support their activism. Activities by other groups in the neighborhood have also included the collaborative design of a shared community yard (Saad-Sulonen & Horelli, 2010).

The Urban Mediator has also been used in informal settings. The residents of the neighborhood of Arabianranta used it to collect data and information regarding traffic safety in their neighborhood. They later analyzed the data themselves, with the help of NGO representatives, and contacted the CPD planners to inform them about their concerns. They also discussed, with some success, possibilities for future actions (Saad-Sulonen, 2012; Saad-Sulonen et al., 2012). Arabianranta is one of the newly active neighborhoods in Helsinki, where web-based tools are frequently used.

Challenges to Participatory E-Planning: A Variety of Tools and Experiments Without Supporting Structures

A variety of digital tools have been used in the context of citizen participation in Helsinki. However, the use and purpose of the tools vary

in terms of their planning context (formal or informal), level of citizen control (Arnstein, 1969; Horelli, 2002[11]) and the stage or phase of the planning cycle (Saad-Sulonen & Horelli, 2010; Saad-Sulonen, 2012). Moreover, as described in the previous section, the tools in use are either official tools, provided by the CPD or unofficial ones, such as neighborhood websites and social media (Table 2). 'Unofficial' in this sense means tools for governance and collaboration that are not developed or funded by a government agency.

The interviews with the city planners revealed that the use of the official tools of participation has meant extra work for the planners. For example, to use the "Tell it on the Map" tool, the planners have to think first, what aspect of their planning work will benefit from the use of the tool. Secondly, they have to articulate a clear theme for the questionnaire that will be set up on "Tell in on the map", and they have to choose the pertinent questions. They also have to determine what the right amount of information is that they want from the residents. Even though the participation coordinators help the planners to calibrate the tool and to analyze the feedback, the type and amount of work is something that the planners are not accustomed to. One planner claimed that: *"Web-based information is an up-to-date kind of way to provide services. However, it demands new kind of skills and resources that planners don't have."*

The current official tools are mostly used at the beginning and at the end of the planning process. They provide fragmented information about singular planning cases. Therefore, not even planners are able to look at the bigger picture at the neighborhood level, nor at the level of the whole city or the metropolitan region. Furthermore, there is a severe shortcoming as no tools exist for visioning. When asked about the visioning tools, the developer of the tools for the City of Helsinki said that most visioning tools are so far heavy to use. In addition, she stressed that visions have to be taken seriously: *"It is wrong to give false hope and not to implement even parts of the visions."*

Planners favor official tools that support the existing planning processes. As the tools enhance information and consultation, they do not greatly increase citizen control over the participatory processes in planning. Thus, the deployment of the official tools reinforces the traditional type of citizen participation. One exception is the new experiment by the CPD, where the planning competitions have been opened up to the general public, by making use of websites and data repositories for sharing citizens' wishes. This opens up the traditional institution of planning competitions towards new audiences.

Another exception is the experiment with the Urban Mediator. The official tools provided by the CPD do not allow citizens to start a discussion or gather information about a topic, unless it has been set up by the CPD. The Urban Mediator has been used in both the formal context of planning and outside it. It has enabled both planners and citizens to start topics around issues of interests. As a flexible tool, it has been used for both consultation in the formal context or for partnership building outside it, as well as at almost any stage of the planning process (Saad-Sulonen, 2012). The flexible use has, however, revealed the extent to which the CPD is short of strategies for dealing with input from citizens that are not delivered through the official tools and the formal processes in place (Saad-Sulonen, 2012).

The purpose of the co-produced neighborhood sites is to enhance the networking and partnership formation of the local stakeholders, and to improve community control at any stage of planning and development. However, although the informal context might provide community control in some projects, the real power in the Weberian sense, "power over," is still the basis for decision-making in the context of planning. Therefore, the community development activities are not being taken seriously enough by the politicians, and consequently they are not integrated into the administration. Unfortunately, this also means that the formal planning is affected by a lack of fit between the plans and the aspirations of the citizens. The type

of citizen participation that is enabled by the official tools is the same as traditional consultation. Citizen activities that are facilitated by a new range of unofficial tools are not recognized as participatory activities by the administration, and thus they are not channeled into the formal planning process.

E-PLANNING IN A DECENTRALIZED AND NEOLIBERAL ENVIRONMENT: CASE SYDNEY

In contrast to the power of the city government to control planning in Helsinki, planning in Sydney is split among the 38 local government authorities (LGAs) that make up the Sydney Metropolitan Area. The Department of Planning and Infrastructure controls planning for the whole of New South Wales as well as the 38 LGAs. The State government acts as an overseer of planning activity among the local authorities. The dominance of NPM in planning in New South Wales has manifested itself in the requirement for local authorities to publish performance data on a variety of activities which include the amount of time it takes to reach a decision on development applications.

To complete this part of the research, interviews were conducted with seven officials involved with e-planning in a local authority in Sydney's North-East[12]. At the State level, an interview was held with the Director of Communications for State Department of Planning to understand the overall trend for e-planning in New South Wales and a Director in charge of implementing the electronic housing code. Finally, interviews were held with Principals from two companies that are contracted by a large number of local authorities to implement e-planning strategies.

The History of E-Planning in New South Wales

Since the early 2000s New South Wales has been subject to a wave of incentives and programs to increase the use of e-planning. At the Federal

level considerable resources have been spent to increase the online capacity of local government[13]. Many of the high-priority areas identified were related to planning. The Federal Government further supported e-planning through the Regulation Reduction Incentive Fund (RRIF)[14]. The Federal Government also provided funding under the Housing Affordability Fund in 2008 for a national scheme to introduce Electronic Development Assessment (DAF, 2010). One of the outcomes of this scheme was a national e-planning roadmap which outlines a national vision for e-planning (Table 3). The National eDA Steering Committee defines *ePlanning as encompassing 'business process models, methodologies, specifications, systems, services and technologies that support the planning industry in Australia in delivering efficiencies to its stakeholders'* (Electronic Planning Australia, 2011). This definition reflects the strong emphasis on business processes and service delivery under the NPM paradigm.

At the NSW State level, the first step towards e-planning was the development of a website known as *iPlan*. The site was officially launched in August 2002 by the Deputy Premier and Minister for Planning, Dr Andrew Refshauge, who claimed that 'the Government is putting the planning system on-line' (http://www.iplan.nsw.gov.au). It was funded through NSW Department of Commerce Office of Information and Communications Technology's 'connect.nsw' program and the Treasury. It was then reviewed in 2006 before being decommissioned in July 2008.

iPlan had the ambitious aim of centralizing information for the whole of the NSW planning system and making it available online in the form of a community-GIS (e.g., Ghose, 2001). However, the designers of the system assumed that centralizing information was necessarily in the various stakeholders' (especially the Local Government Authorities) interests. The aim of the system to be an information clearing house and therefore to transcend the existing silos and boundaries of NSW planning represents the hope that greater transparency would result in better planning outcomes. A legacy of this period

Table 3. Examples of e-planning tools used for citizen participation in Sydney in terms of the context, level of citizen control and the phase of the planning cycle

Name of the tool	Application in formal planning	Application in informal planning	The level of citizen control	Phase in the planning cycle
Official tools				
A variety of development application submitting and tracking tools (e.g. Electronic Housing Code)	A local authority site to track the progress of a development application		Information	In use for the development control process
BASIX	A site that allows proponents for a development to undertake part of the certification process themselves		Information and partnership	In use for the development control process
Local Authority investigated forum	An online discussion forum used as part of a broad range of visioning activities to discuss the future of the local government area		Consultation	At the beginning of the planning process. Broadly to seek ideas and gain opinions
Shape Your State	An online discussion forum to discuss the future challenges confronting the State (e.g. Climate Change)		Consultation	To gauge opinion at the broadest level. Related to strategic planning
Unofficial				
Planning Alerts www.planningalerts.org.au		An online alert system to tell you where a development application is occurring near you	Consultation	Development applications phase

of e-planning enthusiasm was an online tool, known as BASIX, for certifying new development according to an environmental baseline. This was developed independently of *iPlan* and was given statutory weight by its inclusion as a State Environmental Planning Policy in 2004.

Despite the experiment with *iPlan*[15], the State government's enthusiasm for technology

remained undiminished as can be seen in the expectations attached to e-planning in a discussion paper titled "Improving the Planning System" (NSW DP, 2007). This enthusiasm fed into the rationale to apply for funding from the Federal Government's Housing Affordability Fund, in 2008. This fund had one of its aims to strive at the State level for an online end-to-end development assessment process[16].

Decentralized E-Planning in New South Wales

The example of *iPlan* shows the difficulty that e-planning can have when it directly challenges silos and must rearrange existing relationships to work effectively. However, the decentralized nature of planning in NSW, with 152 Local Government Authorities in the State and 38 local government authorities in Sydney alone also leads to opportunities for e-planning experiments.

Furthermore, the State government has long sought to couch each new policy in terms of its effects on individuals (so-called 'Mums and Dads'), who might seek approval to carry out an extension to their dwelling. Thus, the reference to supporting 'Mums and Dads' can be found in media releases for policy as varied as the Affordable Housing State Environmental Planning Policy, where the affordable housing crisis is to be helped by allowing 'Mums and Dads' to construct an additional dwelling, such as a granny flat (NSW DP, 2011), the Housing Code which speeds up development applications for complying development (NSW DP, 2010) or the template for the standard Local Environmental Plan (NSW DP 2006). This accountability towards 'Mum and Dads' reflects a perceived impatience of the community with the planning system and certainly with bureaucracy in general. E-planning initiatives that enable the planning system to appear more responsive to the community fit neatly within this agenda. As a part of this, the State government uses metrics to monitor performance application decision times. This has pushed Local Government Authorities to experiment with e-planning as a

way of reducing the waiting time for applicants. Ironically, the manager of a State E-Planning project explained that while E-Planning was able to be accessed by individuals their target audience are development professionals who traditionally make up the bulk of applicants. This would suggest that in NSW cutting red-tape for individuals or allowing greater public accessibility and engagement with the planning system is impossible to do with E-Planning alone. Instead such benefits should be made part of a broader reform agenda.

As the local authority team interviewed mentioned:

"Yeah, we have to report [Development Application] stats [sic] every… year. They get published. When they're published they're about 18 months out of date, which always good. But as long as you're not in the top 10 worst performing councils, you're okay."

E-Planning as a Process Driven Exercise

The local authority interviewed had started between 2003 and 2004 to identify an emerging desire for people to gain information about development applications from the internet. It responded by building an in-house system to track online all development applications. Although the planners interviewed described it as 'pretty crude', it enabled members of the public to look up the application number, the address and whether it was approved or refused, or where it was up to. An e-planning system in this format effectively diffuses a large number of enquiries, as members of the public feel by having access to the information, their concerns are dealt with.

In addition, the provision of information can enhance the consistency of decision-making through a measure of internal transparency:

"If there was some ability to use the system to say, well at Smith Street we had this issue, and you could create that data base of the information. [It] could assist you in looking at how

you're making those decisions and assist the team leaders in ensuring they're consistent… Rather than having to rely on them getting together and talking about the things that have been important…" (Local Government Authority Planner)

The concern with transparency is clearly one that reaches across to the State government. As well as the use of e-planning, in recent years the State government has pursued a variety of attempts to standardize information from the various local government authority areas in NSW. Most notably this has been through the gazettal of the Standard Instrument in 2006. The Standard Instrument is a legislative tool that prescribes the style and language used in local environmental plans. At the State government level officials noted that this trend towards standardization is also a part of the e-planning project. The standardization of information is to extend to Local Government Authority websites in general. This points to a utopian aspiration for 'total government', mediated through the website as the authoritative source of information. As this Senior Official went on to explain:

"…why don't we have a [web] template that looks similar so that people can transact business similarly, no matter what local government they find themselves in, in terms of from, "here's a pothole" or "here's an issue with my library" through to "how do I get approval for my house?" (Senior official, Department of Planning and Infrastructure)

At a minimum, transparency is expected to engender a system of passive surveillance. However, it is clear that an e-planning system generates data that can be used for active surveillance by the State government to monitor local government. The State government already requires all local governments to produce an annual Local Development Performance Monitoring Report. The production of this report is sensitive, complex and time consuming, however with:

'Automated e-planning like the [Electronic Housing Code], and the integration of these systems I hope that this requirement on local government to extract data one-off for an annual reporting system would not be required. Because it would happen by dint of just using these online systems [...] The data would be of high quality, and they could just do exports out of their online systems that are collecting the information. Potentially, not report annually, but maybe report quarterly something like that.' (Senior official, Department of Planning and Infrastructure)

E-Planning as a Visioning Exercise

In contrast with Helsinki, the local authority planners in Sydney saw the value of using e-planning for visioning exercises. They hired a well known company to manage the process of stakeholder involvement explicitly for that purpose:

"We use that online discussion forum for things like asking people for visions and aspirations about the Town Centre; talking about plans and management for lagoons; talking about big ticket capital works projects like walkways, and sporting fields and things like that." (Local Planner)

Because of the number of Local Government Authorities in NSW and the pressure to increase work in this area in recent years, the consultant involved had successfully grown a company in the space of four years to have client list of 80 LGAs in NSW and with a few internationally in New Zealand, Canada and one in the United States. The work was exclusively to run visioning and online consultation exercises for a variety of issues, including planning.

The inexperience of planners in working in communication in general points to the need for such a specialized service, as do the measures of success that are used to understand whether the visioning exercise was well understood.

Success in an e-planning case can be directly measured as a ratio of the hits on particular material compared to the number of comments that material generates. The consultant argued that such a measure is an improvement on the existing methods of consultation, where:

"We've got our strategic plan and we'd go to the meeting and there'd be six people there and I could've ... and you look around and you're not sure if everyone else isn't there because they're not interested, because they don't care, because there's something on the telly. You really get no sense of the people who aren't there." (E-Planning Visioning Consultant)

At the same time, whilst recognizing the power of e-planning to quickly provide an alternative source of metrics about the feeling of a community towards an issue, he readily acknowledged the amount of time that successful engagement took as part of a longer campaign:

"So part of success is recognizing that and mixing up the processes. Part of it is about repeat, so about doing it a lot so the community get used to it. So in those cases, if you're constantly going out and talking to the community about things, the chances are you'll start to capture those people over a year or two... When you've captured those in your database, then you can be notifying them of new opportunities to be engaged that come up." (E-Planning Visioning Consultant)

Overall a clear distinction was made in the interviews between e-planning to expedite the planning process and e-planning to deliver opinions and stimulate discussion according to Arnstein's (1969) ladder of participation.

"So it works well for different projects and the [Visioning project] was more of the collaborative end. Whereas [e-planning for development applications] are more at the informing end." (Local Planner)

COMPARISON OF THE HELSINKI AND SYDNEY CASES

The comparison of the two cases reveals to our surprise that there are, in fact, more differences than similarities in the use of ICTs (Table 4). The federal government in Australia has given a significant amount of support to e-planning. Furthermore the pressure from a neoliberal agenda in NSW has forced a number of local authorities to experiment with e-planning to speed up the development application process. At the same time, in some local authorities where development has been seen to be particularly controversial or where the local council needs to quickly gain credibility with the local community, e-planning is used for visioning, because at the minimum it is seen as a way of opening another channel for communication. Of course, this only works in the parts of Sydney that have a high broadband connection and the council is well-resourced.

On the other hand, Helsinki has a highly centralized planning system and a highly centralized landownership structure with less room for discretion. This explains the comment that e-planning is not used for visioning, because it might give people the wrong impression or false hope. The emphasis in Helsinki is on the provision of reliable information to citizens, with the assumption of a concerned, rational, politicized citizenry, who is supported by a similarly rational city planning system. ICT-assisted citizen participation is also a clear continuation of the consultation processes set in place by the Land Use and Building Act of 2000. Nevertheless, Helsinki is also witnessing a number of citizen-initiated collaborative projects in informal contexts in which mundane digital tools are used as supports to gain community control. These indicate that such an understanding of e-planning tends to bring forth devolution of power from planners to other stakeholders. At the same time, these citizen-driven activities are not yet recognized by the CPD and they have difficulties gaining traction with the existing planning processes. Indeed, a mix of tools is being used, but there are no

Table 4. Comparison of the differences and similarities in Helsinki and Sydney

	Sydney	Helsinki
Differences		
Context and governance model/ Planning system	A fairly centralized planning system with space for neo-liberal improvisation, embedded in a NPM governance model.	A highly centralized planning system within a Nordic welfare state and governance approaches that are a mixture of traditional public sector, NPM and NPG.
Purpose of e-planning	E-planning to increase efficiency through monitoring and accountability.	E-planning to solve problems of participation in planning.
Way of using tools	Use of collective visioning to shape the content of e-planning	Separation of official and mundane tools in formal and non-formal contexts.
Similarities		
A variety of tools in use	A variety of e-planning tools, not yet integrated in urban planning.	A variety of official and mundane tools in ad hoc use. E-planning not integrated in decision-making.
Low awareness of e-planning and the ecology of tools	Complexity of the e-planning experiments.	Laypeople´s voice in competitions; grass-root activists
Problems with e-planning	Problems with real and virtual identification and anonymity of participants.	Problems with increasing complexity and workload for planners. New communities of practice (CoPs)

possibilities to go beyond traditional consultation, when the authorities are involved.

An analysis of the application of the different tools shows two distinctive characteristics. Firstly, the purpose of e-planning in Sydney is to make the process of development application lodgment more efficient. This push towards efficiency is clearly to improve on the turnaround time. It is seen as much about driving down the waiting time to come to a decision about an application, reducing costs and demands on planning staff than it is on increasing participation. The emphasis on business processes has brought with it concepts, such as 'key performance indicators' and 'accountability,' which are not part of the language of e-planning in Helsinki. Helsinki, on the other hand, addresses

citizen participation, although only in the way it is formally understood.

Secondly, online tools are also seen to be useful in the process of visioning in Sydney. This reflects a considerably lighter attitude towards future planning ideas in the NSW planning system, when compared with Helsinki. Essentially, the bureaucracy in Sydney considers it acceptable for plans to be fluid and a clear demarcation exists between those that are statutory and indicative. This attitude is distinctly different from Helsinki. Few respondents in Sydney mentioned any examples of the use of Web 2.0 tools in planning. The exception to this is the use of a platform by OpenAustralia that will allow the tracking of development applications. In both cities Web 2.0 applications are produced as a reaction to the conservatism of the government's e-planning attempts.

E-planning is a new endeavor and both cities have a fairly low awareness of what e-planning means and what its potentials are. The Finnish language does not even have a suitable world for it, as the direct translation – sähköinen suunnittelu – only provides a narrow image of technical electronic planning. The similarities also concern the variety of tools that are used in both cities, although the contexts are different. In addition, the two cities see that e-planning has several problematic consequences, although for different reasons. However, e-planning brings forth new communities of practice.

At the same time, both city administrations reveal a strong conservatism. While Sydney appears to be a fertile ground for the experimentation with different forms of e-planning, in reality the roll out of this activity is hampered by the legal aspects and a lack of clarity of the roles in the online space. For example, in Pittwater, a council that took the lead in developing an online development application system in 2003 had received legal advice that it was permissible. Other councils received contradictory advice. For two years Pittwater was largely alone in implementing their system.

DISCUSSION AND CONCLUSION

The aim of our article was to explore the role and aspirations of e-planning in urban planning and to examine the similarities and differences through an international comparison of Helsinki and Sydney. Therefore, this article did not focus on the usability of the different planning tools but on their nature and their application in formal or informal planning contexts. Nonetheless, this investigation of e-planning instigators allows some preliminary conclusions to be drawn. Our study is important, because to our knowledge so far no international comparisons of e-planning exist. The results show how much the socio-political context matters for the way e-planning is understood and adopted, and also the manner in which e-planning is transforming traditional urban planning. Finally, we will also discuss the findings in terms of e-planning theory.

The Context Matters

It is evident that e-planning means different things in different contexts. As the comparison of the cases of Helsinki and Sydney showed in the previous section, there are more differences than similarities between the two cases due to the diverse cultures and governance approaches. Helsinki, the capital of a Nordic welfare state, has a highly centralized planning system that is also influenced by a governance approach that can be described as a mixture of the Traditional Public Sector and New Public Management (NPM) approaches, with emerging features of New Public Governance (Table 1). Sydney, on the other hand, is a neo-liberal representative of the NPM approach that seeks efficiency and accountability through transparency and standardization. The focus of Sydney is on individual stakeholders and on the implementation of the projects. In Helsinki, the focus of formal e-planning is on the enhancement of formal participation. However, the citizen-initiated action that is not "in the hands" of civil

servants, is not yet an integral part of the planning system. Sydney focuses more on visioning than Helsinki, but perhaps not in a very deep sense. The different planning contexts affect the adoption of e-planning which is a highly selective process that progresses "by trial and error." Neither general policies, nor models for the endeavor exist.

In both cases, the character, deployment and success of the e-planning experiments, are being determined by the underlying system. In general, e-planning seems to be an open field from which governments seem to pick and choose elements that suit their existing mechanisms best. As such, e-planning does not represent an immediate challenge for the system, as neither of the cities is really aware of what e-planning is and what its opportunities are. Yet, according to Winner (1980, p. 128) "the adoption of a given technical system unavoidably brings with it conditions for human relations that have a distinctive political cast."

The cast in this comparison has had distinctive themes in both cases: 1) the complexity involved in reconciling the aims of the e-planning experiments and their connection to the planning process itself (roles, objectives, implementation of tools and processes), 2) the emergence of new communities of practice within participation and 3) cracks in the façade of administration and the possibility to reshape the planning procedure.

E-Planning as a Potential Transformer of Urban Planning

The applications of e-planning in the two cities under study were not particularly advanced, nor did they reflect a change in planning paradigms. Thus, the current situation is still far from the "fully developed and accessible e-Planning system," described by Silva (2010b, p. 5), as well as from the hype description of Urban Planning 2.0 that is shaping the new intelligent cities (Antiroiko, 2011). Nevertheless, there are signs that participation in urban planning with new digital tools, will eventually transform,

not only urban planning, but also the planning systems and governance approaches in planning.

First of all, the formal planning will eventually expand to adopt a variety of tools, official and unofficial, expert and mundane, which include digital and non-digital tools (Wallin et al., 2010, Saad-Sulonen, 2012). The new tools that support the practices of "do it yourself" and "do it with others" have the potential to change the route to and timing of participation.

Secondly, the groups and structure of participation are changing. Various communities of practice (CoPs) in Helsinki are using available mundane tools to produce and share content related issues that have traditionally been handled by urban planning (Saad-Sulonen, 2012). Thus, urban planning acquires new foci that are relevant to the aspirations of the participants. In Sydney, this process is less in evidence. Both online engagement consultants that were interviewed referred to the e-planning attitude of traditional LGAs with some frustration. This frustration stemmed in some cases from the attitude of the managers of LGAs, the lack of experience of LGAs in dealing with some unexpected issues that arise in the online environment, such as privacy and the clearly defined roles that circumscribe the public official's activity. Compared to Helsinki, the CoPs are tightly linked to funding from Federal and other sources and relatively under-developed. However, it was noted in the interviews that understanding and using crowd-sourcing was going to become a significant tool for policy-makers in e-planning in the future. It has been recognized that during the Queensland floods of 2011, the crowd sourced information on Facebook was more reliable and up to date than the official information. It is likely that this crowd-sourced information will become important in e-planning in Australia as well.

Thirdly, the procedure and resources in urban planning are changing as the possibility to use unofficial participatory e-planning tools changes the resources and "the route" of participation. The planners and decision-makers end up in a new situation, when the planning issues are initiated together with the stakeholders of

the neighborhood, or by the latter alone. Even the role of expertise and planning measures are in flux.

Contributions to E-Planning Theory

Our comparison indicated that even the small changes due to the adoption of new e-planning tools make the linear planning process outmoded and threaten the current power relations. The increasing demands, for example the ex-ante evaluations of the plan, drive planners to seek consultancy from private planners and designers. On the other hand, planners have to meet the growing request concerning the application of ICTs in their work, which means again a new set of tasks and novel collaboration. The multi-dimensionality of the planning systems increases general complexity which adds pressure to transform the system.

Silva (2010b) claims that e-planning is a new urban planning paradigm that requires new concepts, methods and tools. From the different approaches to e-planning Silva positions e-planning in the post-positivist family of planning theories. Our study does not provide evidence that such a transformation would yet have taken place in Helsinki, nor in Sydney. However, we agree with Silva that the e-planning tools can be used from different perspectives (positivist or post-positivist) and for varying purposes. Studying the way that e-planning tools interface with existing systems can reveal the underlying characteristics of the planning systems.

The longitudinal studies of the application of unofficial e-planning tools in the Finnish context (Horelli & Wallin, 2010; Wallin et al., 2010; Saad-Sulonen, 2012) allow suggesting a few theoretical principles that seem to guide post-positivist, participatory e-planning. First of all, e-planning tends to embed urban spatial planning in the community development and local governance, due to the multi-dimensionality and complexity of the planning process. Secondly, e-planning enables the integration of process theories with theories of substance, due to the different methods of co-visioning and co-

creation. Thirdly, the various tools can form an ecology of tools, if connections between them can be created and maintained (Saad-Sulonen, 2010). The ideal would be that the whole cycle of planning, from the contextual analysis to visioning, designing, implementation and evaluation would include digital and non-digital, official and unofficial, expert and mundane tools with the intention not only to inform participants but to support building partnerships and make the community a better place to live.

However, the core challenge still remains unanswered: How to connect the new activities and stakeholders of e-planning to decision-making? (Antiroiko, 2011) How to combine representative democracy with the increasing direct influence that the new methods and tools bring forth to urban planning and governance? Will it deliver concrete ways to implement the New Public Governance approach in the practice of urban planning and community development?

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ENDNOTES

[1]   The Handbook of Research on Urban Informatics (Foth, 2009) presents a variety of cases where the use of locative, mobile, and wireless technologies has affected people's experience of the city. Some of the cases particularly address the expanded possibilities of citizen participation that is enabled by tools, such as photo publishing and SMS-based photo annotation solutions (Ananny & Strohecker, 2009), e-mail listservers (Preece, 2009) and community websites (De Cindio et al., 2009). Other examples reported elsewhere indicate the relevance of the use of the social media (Evans-Cowley & Hollander, 2010), virtual reality environments (Foth et al., 2009), and the combination of various digital and non-digital tools (Saad-Sulonen & Horelli, 2010; Saad-Sulonen, 2010, 2012) in participatory urban planning.

[2]   A community of practice (CoP) means a group of people who share an interest, a craft, and/or a profession. The group can evolve naturally because of the members' common interest in a particular domain or area, or it can be created specifically with the goal of gaining knowledge related to their field. It is through the process of sharing information and experiences with the group that the members learn from each other, and have an opportunity to develop themselves personally and professionally (Lave & Wenger, 1991).

[3]   Diverse positions, ranging from positivist to post-positivist, have influenced planning theory over the last fifty years. Allmendinger (2009) lists the most influential seven approaches as being: systems and rational theory, critical theory, neo-liberal, pragmatism, advocacy, postmodern, and collaborative. Diverse theoretical approaches or their combinations are applied in the planning systems of different countries.

[4]   The welfare state refers here to the concept of government in which the state plays a key role in the protection and promotion of the economic and social well-being of its citizens through the provision of cash benefits or in-kind services, such as health, education and child care, depending on the policy of the country. Esping-Andersen (1990) has constructed a threefold welfare regime typology, based on the responsible quarter who answers for the social risks and welfare services. The typology has later been criticized and revised, but it still is indicative (Ferragina & Seeleib-Kaiser, 2011): 1. *The Nordic model* in which the State is responsible for the welfare policy. It is also called the *Social-Democratic welfare model*, guided by the principle of universalism that grants access to benefits and services based on citizenship. It is applied in Finland. 2. *The Central European* model in which the responsibility lies on families. This conservative model, which is based on the principle of subsidiarity and the dominance of social insurance schemes, is implemented in France, Austria and Germany. 3. *The Anglo-Saxon model* in which the responsibility lies on the individuals. This *liberal model* is based on the notion of market dominance and private provision; ideally, the state only interferes to ameliorate poverty and provide for basic needs, largely on a means-tested basis. Besides UK, USA and Ireland, Australia belongs to this group.

[5]   Between 1947 and 1961 home-ownership rates in Australia jumped from 53% to 70% further laying the ground for a rolling back of the State in housing and then in planning (Bourassa et al., 1995).

[6]   While neoliberalism forms the backdrop for change to local government in NSW, the role of local government is further differentiated from Finnish local government by a distinctive historical role. The structures of local

government reflected the structures existing at State government as local government was set up as a response to the needs of the colonial government in the late 19th century. This legacy means that local governments act as an outpost of State government in many cases (Freestone, 2010). Furthermore there are considerable differences within NSW local government and between local governments in Australia. This is evidenced even by the different approaches to e-planning and IT which can depend on whether a council is metropolitan or not (Williamson & McFarland, 2012).

[7]   Helsinki covers 716 km2 and has a population of almost 600 000. The Helsinki municipality is the main land-owner and developer of urban space. The City of Helsinki owns 61%. Private people and enterprises own some 20% of the land most of which has already been developed (Helsinki City Statistics, 2010). This superior position provides the local planning authority exceptional power to co-ordinate the planning procedure and to decide over the substance of planning, as well as over the degree of citizen participation. However, the City is increasingly dependent on private enterprises for the implementation of the plans.

[8]   The Urban Mediator has been developed at the Media Lab of the University of Art and Design, now the Aalto University, between 2006 and 2008. The Urban Mediator Helsinki (http://um.uiah.fi/hel) and the Urban Mediator Helsinki Open (http://um.uiah.fi/hki) are hosted on the university servers and are free for use. The UM version 2.0 is available for download as an open source software (http://um.uiah.fi).

[9]   Herttoniemi is a neighbourhood of 20 000 inhabitants, which lies about 5 km. from the centre of Helsinki and which currently undergoes deep-going changes in terms of housing, commercial building and traffic.

[10] Herttoniemi has now a well-functioning local website which has a set of interactive digital tools, service platforms and links to various local and official news feeds. Moreover, the residents have used the social media, such as the Facebook platform, to establish an online presence for the neighborhood and to provide low-threshold possibilities to support the participation and information sharing, as a complement to the local website.

[11] Arnstein's (1969) famous ladder indicates, even if metaphorically, the level of influence or control and space for action by the citizens in specific projects. A five-level scale of par-ticipation is adopted here: *no participation, information (*one-way flow of information exists), *consultation (*authorities ask opinions about the presented options), *partnership (*shared working and decision making with the authorities), and *community control* (users and residents decide and the experts or practitioners are used as resources). The level of participation often varies in terms of the phases of the planning cycle but the criterion for real participation lies, at least, at the partnership level of the planning phase. Full citizen control is rarely achieved, since the legislation only recognizes the decision making of political representatives.

[12] The local authority chosen represents one of the 17% of Metropolitan local government authorities (LGAs) in Sydney that allow de-velopment applications to be lodged online. It also represents one of the 12% of Metropolitan LGAs that run discussion forums on planning (Piracha et al. 2011). One of the interviewees was the director of planning, with two mem-bers of the technical team who look after the e-planning system. An additional interview was held with the Director of Participation and Communications at the LGA.

[13] This has included a long-running scheme to improve telecommunication infrastructure in rural and remote Australia known as *Network-ing the Nation*, which ran for ten years from 1997. While the projects that were funded embraced a wide range of telecommunica-tions projects, some $5 million in funding, in 2000, was allocated through a project known as 'Local-e Online Action for NSW' to help LGAs standardize their websites and provide some high priority services online (DCITA, 2008).

[14] (RRIF) provided $6.2 million in funding to LGAs to simplify their regulations to help small businesses. Since small businesses usually interact with the LGA through plan-ning issues these funds were used to support online development application processing across 37 councils in NSW over a year (SGS Economics and Planning Pty., 2007).

[15] The NSW Department of Planning and In-frastructure has used that funding to pilot a program involving twelve councils to develop an electronic housing code which has recently gone live (http://ehc.nsw.gov.au/). The code allows for a fast-track development applica-tion process for 'complying development.' These are developments that are defined by a given Local Government Authority as being eligible for development approval, if they meet

certain pre-approved criteria rather than being subject to further assessment. The approval can be issued by the Local Government or by an approved Private Certifier (Gurran, 2007, p. 243). The types of development that may be pre-approved could include, for example, approval to roof space into an attic for a house or the construction of a swimming pool.

Sirkku Wallin is a researcher at YTK, which is a part of the Department of Real estate, Planning and Geoinformatics in the Schools of Engineering at Aalto University. She has a background in planning geography. Her research addresses participatory urban planning and community development. Since 2009, she has been involved in a research project of Finnish Academy on participatory glocal communities (PALCO) addressing e-planning and the role of technology in urban environment and urban planning processes. The contextualization and development of these new tools seek to enhance the everyday life and the complexity management of the urban environment.

Joanna Saad-Sulonen is a doctoral candidate at the School of Arts, Design and Architecture of the Aalto University. She has a background in architecture and new media and digital design. Her research addresses the limitations of the current approach to participatory e-planning, where the relationship between technology and citizen participation in urban planning is often based on the application of "ready-to-use" technology in the context of formal participation and urban planning processes. By situating her work at the intersection of digital design and urban planning, she proposes a new conceptualization of participatory e-planning, which enables the collaborative development of both technologies and participation processes concurrently.

Marco Amati, PhD, is a lecturer in urban planning at the Graduate School of the Environment, Macquarie University in Australia. He has experience on urban planning and environmental issues from UK and Ireland to Japan and New Zealand. In his work, he has brought forth the issues of citizenship in planning, the actions of environmental groups and the role of successful planning projects for the construction of planning as a discipline. His research on e-planning expands the substance of urban planning to cover the questions of power and justification of green spaces and environment protection.

Liisa Horelli, PhD, is an environmental psychologist, who works as Adjunct professor at Aalto University, Finland. She has conducted action research during three decades on participatory planning with children, adolescents, and elderly people, and recently on participatory e-planning. She is also interested in the content theories of planning, especially those that deal with the infrastructure of everyday life, such as cohousing. She is currently President of the Finnish Evaluation Society (FES), and member of the board of the European Evaluation Society.

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