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Bridging the Digital Divide in Public Participation: The Roles of Infrastructure, Hardware, Software and Social Networks in Helsinki's Arabianranta and Maunula

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submitted in partial fulfillment of the
requirements for the degree of

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Graduate School

This is to certify that I have examined this copy of a master's thesis by

Charles J. Gabbe

and have found that is complete and satisfactory in all respects,
and that any and all revisions required by the final
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Abstract

Bridging the Digital Divide in Public Participation: The Roles of Infrastructure, Hardware, Software and Social Networks in Helsinki's Arabianranta and Maunula

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Associate Professor Mark Purcell
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Information and communications technology (ICT) itself does not provide communities with a more effective voice in the planning process. However, when ICT is used as a tool to build stronger neighborhood social networks, it can catalyze public participation in planning.

The use of ICT as a community-building tool requires a combination of network infrastructure, hardware and software, according to the literature. Additionally, it requires the utilization of human social networks. Based on my study of Helsinki's Arabianranta and Maunula neighborhoods, I found that catalyzing collaborative planning in Helsinki using ICT requires a combination of infrastructure, hardware, software, and, most importantly, social networks.

The ICT projects in Arabianranta and Maunula represent a new paradigm of technology use in the neighborhood context. Both initiatives are relatively recent (conception and implementation in the last five to seven years) and this thesis looks critically at the conditions that make it possible to use ICT in collaborative planning.

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CHAPTER 1: INTRODUCTION

Information and communications technology (ICT) itself does not provide communities with a more effective voice in the planning process. However, when ICT is used as a tool to build stronger neighborhood social networks, it can catalyze public participation in planning.

The use of ICT as a community-building tool requires a combination of network infrastructure, hardware and software, according to the literature. Additionally, it requires the utilization of human social networks. Based on my study of Helsinki's Arabianranta and Maunula neighborhoods, I want to reassert that collaborative planning in Helsinki using ICT requires a combination of infrastructure, hardware, software, and, most importantly, social networks.

The ICT projects in Arabianranta and Maunula represent a new paradigm of technology use in the neighborhood context. This paradigm shift represents the first widespread usage of neighborhood-scaled and Internet-based communication tools. The areas' initiatives are relatively recent (conception and implementation in the last five to seven years) and there is an opportunity to look critically at the conditions that make it possible to use ICT in government, in general, and more specifically in collaborative planning. This is the first project to compare Arabianranta and Maunula for an English-speaking audience.

To provide the basis for this comparison, I first review the literature that examines several aspects of ICT and cities. More specifically, I focus on information technology and the digital divide, access to ICT, social networks, networked communities, ICT and the city, and the evolution of public participation in planning. I find that the literature points the great potential of technology to impact cities and society. However,

throughout the literature, I also find that ICT is only a tool to develop lasting social networks.

After I review the literature, I shift to an explanation of my research methods. During the four months I lived in Helsinki, I was able to use a mix of primary and second sources to gain a detailed understanding of Arabianranta and Maunula. My primary method was open-ended face-to-face interviews with researchers and stakeholders from Arabianranta and Maunula. Through approximately twenty interviews and numerous informal conversations, I was able to gain a rich understanding of the complexities of these two cases.

In the third section, I lay out the Finnish context, both in terms of planning and technological innovation. Finland, with its Land Use and Building Act 2000, is quickly shifting from a rational to a collaborative planning model. This is evidenced by the plan-approval process that jurisdictions, including Helsinki, must follow. In addition to the planning aspects, for this thesis, it is important to understand the role that technology is playing in the development of this Northern European nation – as well as specifically in Arabianranta and Maunula. I look at the innovative roles of government, the private sector and the Finnish people.

In the fourth section, I describe both Arabianranta and Maunula in terms of their spatial, social and technical dimensions. Understanding the context of the social networks and technology initiatives in both neighborhoods requires understanding the unique identities of Arabianranta and Maunula.

Finally, in the conclusion, I tie it all together – looking at how these Finnish cases agree with the literature related to technology, social networks, and public participation. The majority of the literature I studied focused on the North American technology model. The implication of going beyond the North American (and British) studies, and instead

focusing on Finland, leads to a more global understanding of the relationship between ICT, community networks, and urban planning. Social democracy is a cornerstone of Finnish society that would seemingly affect which ICT elements may be portable. However, I observed that while Finnish people may have a different relationship with government than citizen of many other countries, this does not limit the use or transferability of the Arabianranta and Maunula case studies. The Finnish cases show that in a social democracy, ICT usage can also stimulate neighborhood social networks.

I had several key objectives from the beginning of this project. First was to describe the spatial and social characteristics of Arabianranta and Maunula while studying the communication and advocacy aspects of the Arabianranta and Maunula models. I also sought to explore the multidisciplinary connection between urban planning, community development, communications and information technology. Finally, I wanted to consider the future of each community's technology efforts. As technology implementation and use is a changing process, I chose to look at how the neighborhood networks may evolve and change in the coming years, including opportunities for using electronic participation as a tool for planning.

In the next chapter, I begin with a look at the theoretical basis for this research in the technology, community development and planning literatures.

CHAPTER 2: LITERATURE REVIEW

At the beginning of this project, I hypothesized that it is not the ICT itself that provides communities with a more effective voice in planning, but rather it the use of ICT as a tool by existing communities. I analyzed both the planning and technology literatures and found that when ICT is used as a tool to build stronger neighborhood social networks, it can catalyze public participation in planning.

Information Technology and the Digital Divide

Access is at the heart of using technology in public participation in planning. Thus, it makes sense to first look at the debate around the "digital divide." The digital divide can be simply defined as the "lack of access to IT for certain segments of the population" (Servon 1). This divide has developed with users of IT around the world generally being "young, urban, male, and relatively well educated and wealthy" (Servon 1). The digital divide has been an issue of concern throughout the developed and developing worlds since ICT use began gaining prevalence.

There have been sweeping claims about the social changes that will occur as a result of the ICT spread. Some scholars have referred to cyberspace as the new 'public realm' and these people believe that the erosion of cities may evolve into a cyber alternative (Aurigi and Graham 59). Finally, many of these assertions reflect the vision of a utopian future in which networks will "emerge to be equitable, democratic and dominated by a culture of public space" (Aurigi and Graham 60). The following sub-sections focus on the necessary technology components for ICT access, how ICT is changing cities, the types of new communities that are emerging, and lastly the evolution of public participation in planning.

Information Technology Access: Infrastructure, Hardware and Software

Bridging the digital divide requires increasing access to information. First, there are some who believe the key is simply expanding availability of devices and connections.

Some argue that network infrastructure should be viewed as a new kind of utility, like water, gas, sewer and electric (Mitchell Equitable 145). Others, however, disagree and believe that IT is simply a luxury, not a necessity (Servon 3).

But, regardless, promoting access requires several components. Leading urban planner and technology researcher William Mitchell highlights the need to build "the necessary digital telecommunications *infrastructure*, create innovative *smart places* from electronic hardware as well as traditional architectural elements, and develop the *software* that activates those places and makes them useful" (Mitchell E-topia 8). For citizens, this means creating three elements: infrastructure, access points and applications (Komninos 188).

However, the networks themselves are not enough—there need to be appropriate "electronic appliances" to connect to them (Mitchell Equitable 145). In order to address this, many countries are creating telecenters or community technology centers (Servon 57). These centers, such as Maunula's Mediapaja, are intended to provide people without computers, including those with low-incomes and seniors, access to the Internet and other computing resources. Finally, beyond the infrastructure and the hardware, it is also necessary to have inexpensive and easy-to-use software (Mitchell Equitable 158). These applications are at the center of most digital city projects (Komninos 188).

While computers are the dominant hardware in most neighborhood ICT initiatives, mobile devices are becoming increasingly important to communication in the city because our "ability to manage everyday life depends on our ability to connect to networks" (Kopomaa 21). These handheld devices typically combine a phone with other communication functions and are gaining prevalence because they facilitate urban social network-building practices, such as sitting in cafes or restaurants (Kopomasa 17). Regardless of the device being used, including desktop or notebook computers, or mobile phones, the key focus in order to build successful city applications include

"better communication capabilities, more complete representation of city spaces, more accurate and up-to-date information…" (Komminos 183).

One example is IBM's creation of a portal-type application for a digital interactive city that includes information, news, events, discussion boards and more. Today, weblogs (blogs) have become increasingly prevalent in facilitating online discussions (Böhlen 39). In addition to work by private companies, and because not all neighborhoods are new or the residents can't afford the infrastructure, there is a role for non-profits to play in creating access using these components (Horan 75). In all cases, it important to note that non-profits, governments and citizens are all facing the same learning curves when implementing new technology (European Commission 92). Sometimes, though, the "symbolic allure of ICTs is as important as the real hardware…" (Graham and Marvin 341).

The Roles of Social Networks and Social Capital

Beyond ICT's infrastructure, hardware and software, there is a need to consider the human elements -- the social networks involved. Studying the role of social networks within a neighborhood is critical to understanding how ICT can be as a tool to increase a community's voice in the planning process. Social networks and social institutions are "social structures that support communication" between individuals (Hoff 132). Social networks are a key component in the creation of "social capital," referring to the combination of "social networks, norms of reciprocity, mutual assistance, and trustworthiness" (Putnam 3). Community organizations can use social capital to encourage participation in public debates (Green 106). In many cases, however, this social capital can be a way of making controversy productive and this is often the case when working with disadvantaged groups (Putnam 4).

Some critics, however, debate whether neighborhood networks are truly building social capital because they argue that social capital "cannot be built or destroyed quickly"

(Green 106). This is a strong rationale for studying the effects of neighborhood networks now, while they are in their infancy, in order to understand how they impact social networks and social capital. Regardless, as evidenced by the descriptions of several networked communities in the next sub-section, some communities are successfully using technology, including the Internet, to encourage "more dialogue among community residents" (Green 107). Fostering opportunities for communication and relationship-building among community members is critical to creating the types of social networks which can fully utilize ICT as a tool.

New Networked Communities

At the neighborhood level, the emphasis in designing information technology tends to focus on enhancing "sense of community" (Horan 11). This began to be seen in the earliest American community networks in the mid-1990s in cities like Cleveland, Santa Monica and Seattle (Aurigi and Graham 60). The advantage of these networks, run "by the community for the community," is that they are more equitable and interactive than those using traditional media (Aurigi and Graham 60 quoting Schuler 1996 x). This refers to the "bottom-up" approach which leads to more user-generated content and control. Studying these smaller scale networks allows us to be more concrete and avoid the sweeping generalizations of the global digital divide debate, which often focus on the more broad positive societal impacts of the spread of technology.

Both Arabianranta and Maunula can be termed "smart communities," relating to Komminos' definition that a "smart community is simply a community in which government, business, and residents understand the potential of information technology and make a conscious decision to use that technology to transform life and work… in significant and positive ways" (188).

Two cases, in Canada and the UK, illustrate the Internet as a tool that can promote the creation of stronger social networks. One of the first and most comprehensive studies of

how broadband infrastructure impacts a community was study of Netville, an anonymized Toronto suburb from 1997-99 (Hampton 256). In this case, Netville residents had free access to fast Internet connections (10 MB/s) with other services, including videophone, online jukebox, online health services, local discussion forums, and online entertainment and educational applications (Hampton 256). While some would argue that ICTs reduce the need for public involvement (Kraut et al 1998), the case of Netville proved otherwise (Hampton 256).

Hampton found that a "wired" residential setting led to increased contact, social ties and community involvement, and larger, more connected social networks (Hampton 256). Several of the findings of the article, while not directly related to planning, found that wired residents recognized, talked to, visited, called and emailed their neighbors more frequently than the unwired neighbors (60% of the home participated and the other 40% were not connected for technical reasons) (Hampton 256). Hampton suggested that, at the very least, ICTs may be helpful in developing "weak, local ties" (Hampton 256). This means that ICT may not develop the strong ties of family and close friends, but rather helps develop increased community familiarity and communication.

Around the same time, Microsoft did an experiment, termed the first "cyberstreet community project in Europe," in which it chose a community in the Northern London borough of Islington to "explore how the Internet would affect a real, local community – as opposed to a 'virtual community' existing only in cyberspace" (Guissani 1). Twenty three participating households were given a computer, modem, MSN Internet account, a dedicated phone line, software, subsidized phone bills, and on-site installation and education. In return, participants agreed to keep a log book of their online activity. Anecdotally, the project resulted in closer social ties on the street and gave residents something to talk about – conversations started on the bulletin boards and continued in person. Political and planning-related issues in this experiment included debating a municipal parking plan, building support for a campaign against

vibrations caused by a local railway, and circulating news about a neighborhood burglar (Giussani 1).

Real estate developers have been active in 'smart community' initiatives because they can begin installation of the network infrastructure at the beginning of the project life (Horan 74). On the planning side, if planners are to create communities that are digital, but still tied to a specific place, then they need to understand the differences between communities of place and interest (Horan 62). A community of place refers to a location-based group while a community of interest refers to one based on shared-interests, not location. In today's context, virtual communities (including communities of interest) seem to work best when they are coupled with occasional face-to-face encounters and when online interaction can stimulate demand for physical meetings (Mitchell E-topia 90).

Information Technology is Changing the City

The ICT movement is changing the city itself. A new urban form is being created in the "information city" (Castells 2000 398). This contrasts to the traditional urban form which is focused around the physical elements of a city; in the new city, society is increasingly structured around flows of information primarily through technology (Castells 2000 412), meaning that interactions can increasingly happen outside of the physical city context. With these new flows of information, the cities of the future may have more online meeting places in addition to physical meeting places (Mitchell E-topia 85).

According to Ramest Srinivasan, "community now embraces more than just a neighborhood, more than just a geographic locale." There is an emergence of community-scaled "virtual cities" emerging online (Aurigi and Graham 66). Research is showing that these virtual cities can be divided into non-grounded and grounded variations. Non-grounded refers to network "cities" which are not location-based, while

grounded refers to location-specific Internet sites (Aurigi and Graham 67). This is significant because in the past social networks have been primarily grounded.

However, information technology in the city can have limitations. Schiller believes that it is puzzling "how… such a multilayered and substantial information apparatus provide such a thin and restricted output of socially necessary images and messages…" (Schiller xiii). Aurigi and Graham argue that simple access to networks "does not necessarily imply that use develops, that this use has any meaning, or that it necessarily brings power and advantage to users" (63). This is a key point that emphasizes the need to develop conscious, multi-dimensional approaches in order to strengthen social networks and build community power.

Public Participation in Planning is Evolving

Public participation is evolving in many ways, beyond simply the role of technology. In the 20th century, planning became "more holistic in scope, more strategic and scenario-oriented in content and more interactive in nature" (Geertman and Stillwell 26). Resident groups are playing a more central role in community planning (Sanoff 6) and planning has moved from a rational to collaborative model. In this literature review and project, I am not trying to justify collaborative planning. As Leonie Sandercock and others have chronicled, there is a tradition in the planning literature chronicling the shift from rational planning to collaborative planning (Grabill 132), and this thesis accepts this evolution.

Participatory planning represents a fundamental shift from "confrontation to collaboration" (Geertman and Stillwell 28). In a collaborative model, public participation serves several purposes including information exchange, conflict resolution, and to supplement planning and design (Sanoff 8). Beyond simply the rationale for community involvement, Godschalk and Mills recognize that there are "subcommunities" within each community that benefit from representation of their

interests (86). They proposed a three-pronged process that was collaborative, focused on human activities (not only land use), and stresses "two way communication" between planners and the community (86).

In order to understand how technology can impact public participation, it is important to first describe participation itself. Public participation is the process that makes it possible for people to be involved with shaping their community environments (Sanoff 6). Public participation can also be a "categorical term for citizen power" (Arnstein 216). Thus, it is necessary to understand how power is structured and exercised in a community (Burke 33). In her seminal work, Sherry Arnstein points out that there is a difference between going through a public participation process and the public having the power to affect the outcome. She describes eight rungs on a "ladder of citizen participation" that range from manipulation at the lowest level to citizen control at the highest (217). These rungs can be helpful in considering the role of ICT in public participation because they give us benchmarks by which to measure the functionality of technological applications.

While some people are dismissive about the role of citizen participation in planning, one of the arguments for its importance is that public involvement can "offset the initial disadvantages of lower income and minority groups" (Fainstein and Fainstein 228). However, the process, size and composition of participant groups will be different for each decision (Sanoff 18). Additionally, Burke identifies three primary purposes of public involvement: it is a "source of wisdom," a device to organize support for planning, and a way to protect individual and community rights (89).

The public participation-related elements of urban planning include participative plan design, urban plan visualization, opinion collection, and information distribution (Laurini 245). Information technology is a tool which can be used to address these elements. However, it is important to note that in communities, the role of digital

technology is to "enhance the effectiveness of various community institutions" but not to replace the institutions themselves (Horan 11). Thus, the digital tools serve to supplement the existing community networks – this is the focus of this project looking at how ICT can be used to develop more powerful communities.

Planners are increasingly using planning support systems (PSS), which represent various technologies designed to support the traditional work of professionals. However, planners must educate themselves about technology and new media in order to avoid being seduced into poor partnerships (Graham and Marvin 347). Unfortunately, planning, itself, remains "underprovided" with PSS tools and various authors believe that it may take up to ten years for the profession to catch up (Geertman and Stillwell 25). Most of the PSS are focused on analytical, modeling or representational tools, like online mapping or GIS, with less of a focus on communication aides. This thesis looks closely at how communication tools, as opposed to more technical planning tools, are being used to augment community involvement in planning.

One of the historical reasons for "pseudo" participation is technocracy within the planning field. Finland has traditionally had a rational planning structure, but this is evolving into a participatory model with its increased emphasis on public participation from the Land Use and Building Act 2000 (described further in the "Finland Context" chapter). Technocrat refers to "describe the bureaucratic expert decisionmaker who is conferred a special status by his or her peers…" (Day 430). The Maunula case shows a community using ICT to move beyond the City's approach in the shopping center redevelopment.

In terms of e-government participation, as governments are increasing their online offerings, there is the issue of unequal access to information to those without computers or the education to use them (Servon 15). Throughout Europe and the United States, there has been significant talk about e-government in general and how to create "digital

cities" in particular (Komninos 2). This has led to an emergence of "new modes of collective debate" with ICT (European Commission 42), returning to the effects of new media on politics and representative democracy. These new modes include forums for discussion and means of introducing new players into the deliberative process (European Commission 43). This also leads to greater scrutiny of government and decision makers (European Commission 52) – highly applicable to planners and other public servants.

Again, this literature shows that ICT is simply a tool that existing social networks can use to catalyze their role in the planning process. In the next section, I explain the research methods I used to translate this theory to the Helsinki cases of Arabianranta and Maunula.

CHAPTER 3: RESEARCH FRAMEWORK

As described in the introduction and shown in the literature review, ICT is a tool which can help communities build stronger social networks. Through these social networks, communities can catalyze their voice in the planning process. I used established qualitative research methods to choose and analyze two Helsinki cases. I approached the question of technology and public participation in planning using qualitative methods. In particular, I based my approach on how some researchers have addressed similar questions in the literature. This section explores the selection of cases and the methods that guided my process.

Case Study Selection

More specifically, looking at several potential qualitative research methods, I chose to use a case study method, because this is the "preferred strategy when 'how' or 'why' questions are being posed… and when the focus is on a contemporary phenomenon within some real-life context" (Yin 1). I also used a case study design because I wanted to develop "intensive knowledge about one complex object" (Zeisel 65). Case studies can be used describe single, "internally complex objects" such as neighborhoods (Zeisel 65). Case studies can also be used for exploratory, descriptive or explanatory purposes (Yin 16). I wanted to use case studies in order to retain the "holistic and meaningful characteristics of real-life events – such as… neighborhood change" (Yin 14).

I then began searching for cases that showed how ICT infrastructure impacts participation in government. I considered choosing American cases, but as Schiller wrote, there is both strength and vulnerability in the American ICT model and this model has been most studied (xiv). I knew that Europe could present an alternative model that might be interesting to an American audience. Within Europe, I decided to seek out technologically advanced and socially democratic countries – which led to most of the Northern European countries. This decision coincided well with the

awarding of a Valle Scholarship opportunity to design a research project related to planning in Finland, a world leader in technological innovation.

Within Finland, I wanted to choose grounded cases, in order to look at the relationship between the information networks and the Helsinki neighborhoods. While I initially considered only selecting one case, the highly-publicized Arabianranta for this project, my advisor Jonna Kangasoja specifically recommended adding an additional case. She suggested that Maunula would create an opportunity to compare two very different Finnish areas which had previously only been looked at individually. In order to justify and confirm the study of these neighborhoods, I employed Bent Flyvbjerg's strategies (77). I chose to focus on these two "extreme/deviant" cases in order to get my point across "in an especially dramatic way" (Fyvbjerg 78). This means that because ICT is having some significant impacts on society, I chose to look at two cases which appear to be significantly ahead of most neighborhoods. However, despite the benefits of using case studies, I realized that the method can lead to difficulty in generalizing (Denzin 439). But, I addressed this by attempting to focus on a topic which has been "studied before and about which some theory exists" (Zeisel 67).

Because case study selection differs from sampling, I also chose unusual cases because they can illustrate matters which might otherwise be overlooked (Stake 4). These matters include the types of day-to-day Internet usage that may occur in more "wired" settings. It was also important to think about how my case studies would be organized. I chose to organize around several key issues, as recommended in the Handbook of Qualitative Research (440). More specifically, these issues were the key components of my thesis in the context of the Arabianranta and Maunula models: ICT infrastructure, hardware, applications and social networks.

Methods

Information Collection and Analysis

The three main types of qualitative data are interviews, observations, and documents (Patton 4). Information collection included a combination of primary and secondary sources. The primary sources were interviews of researchers, community developers and residents of both neighborhoods. The secondary sources were studies that have been completed related to Arabianranta and Maunula, mainly by the City of Helsinki Urban Research Center, the Helsinki University of Technology Department of Architecture, and the University of Helsinki Department of Sociology.

The purpose of utilizing both primary and secondary sources has been to best understand the Helsinki planning and community development context, background information (including the neighborhood demographic profiles for Arabianranta and Maunula), specifics of the technologies that are being used in Arabianranta and Maunula, how the residents of both neighborhoods are using the technology, and how the use of the technology is leading to a faster shift from rational to collaborative planning.

These sources proved the most effective method, because they represented a way to combine my first-hand experience with existing published perspectives. I was able to conduct interviews and collect materials during my four month grant period; I was later able to use other sources after my return to the United States. Particularly considering some language and cultural barriers, I found this was the best way to get the full picture of everyday life related to technology use in Arabianranta and Maunula.

Interviews

In addition to the secondary sources available, I used interviews as the primary source method. The interview is a "remarkably adaptable method" that can allows great

flexibility (Lindlof 170). Interviews are particularly well-suited to "understand the social actor's experience and perspective" (Lindlof 173). Specifically, open-ended interviews refers to a technique in which a general set of questions are used, but the interview is also allowed to go in different directions depending on the interviewee's experiences (Lindlof 171). However, one of the challenges of these interviews is that the interviewer needs to be a skilled observer of body-language and the "nuances of the interviewer-interviewee interaction and relationship" (Patton 13).

I used open-ended, face-to-face interviews as the primary source method. This method allowed me to have access to key stakeholders and knowledge leaders in the neighborhood. The primary reason for using interviews was because the private, in-home nature of Internet use created difficulties in conducting observations, with most of the documents written in Finnish. Using open-ended interviews allowed me to "yield in-depth responses about people's experiences, perceptions, opinions, feelings, and knowledge" (Patton 4). The open-ended questions helped me to see the questions from the respondent's perspective (Patton 11).

I initially interviewed the program coordinators or leaders of each neighborhood effort. Starting with these key contacts, I asked each interviewee if they could recommend other stakeholders people with whom to meet. By the end of my interview process, I found that I had interviewed most of the recommended interviewees. In addition to stakeholders, I also interviewed academics and researchers in planning, architecture, community development and sociology.

In each interview, I asked questions about how ICT was being used on the neighborhood level in Helsinki, and how ICT was impacting the way people interact with and are involved in neighborhood planning and development decisions. The public sector staff, including planners, were asked how, if at all, ICT fits into the role of urban planning in Finland and specifically related to public participation and neighborhood

involvement. I also interviewed the real estate developers behind Arabianranta, looking at their initial goals of incorporating ICT into the neighborhood and the effects of its implementation. Additionally, I looked at how the original concept of the Virtual Village has evolved from the neighborhood-level to the micro-level—the individual apartment blocks. I interviewed leaders from the Maunula city quarter about the story behind their ICT initiative and its results (including those related to the controversial shopping center redevelopment).

Data Analysis

Throughout the process of conducting the open-ended interviews, as well as through the collection of secondary materials, I was faced with the challenge of how analyze the data that I collected. This data was primarily in the form of edited, typed interview notes. I used several classic analytic techniques including "sorting and sifting" through materials to find patterns and themes; and confronting generalizations with a "formalized body of knowledge," the literature (Miles 9). I noted and identified common themes in the interviews that related to my research questions. I also focused on unusual or extreme observations and tried to reconcile it with other data I had, or did follow-ups with interviewees to explore these observations.

In the following sections, I expand on what I learned from primary and secondary sources during my research period in Helsinki. In the next section, I use a variety of secondary sources to establish background on the planning and technology environment in Finland – essential to considering ICT's use as a tool to build stronger neighborhood social networks which can influence the planning process.

CHAPTER 4: FINLAND CONTEXT

When looking at the ways ICT impacts social networks in Arabianranta and Maunula, it is important to look broadly at the cases' Finnish context. The two key pieces of this context are the Finnish planning process – which is becoming increasingly participatory – as well as the role of Finnish technology innovators.

Planning in Finland

Overview

In order to consider the unique role of planning and public participation in Finland, it is helpful to start with an overview of the country and its planning process. Finland is a European nation that since World War II has simultaneously needed planning and quietly shown the world the benefits that can come from comprehensive land use decisions. Following the war, the country became rapidly industrialized and urbanized, while paying reparations, and was in need of significant new development.

Helsinki City Planner Douglas Gordon called Helsinki the "first smart city in Europe" with its compact form, density, and basis on public transportation (Gordon). Now, this planning, beginning at the national level, continues to support Finland's place in the global economy.

Land Use and Building Act 2000

The Land Use and Building Act 2000 is Finland's national law governing land use and spatial planning. Before the passage of this Act, Finland had been using law from the late 1950s that had become outdated as the country became increasingly urbanized. The Land Use and Building Act 2000 has been designed to be a "transparent and interactive approach to spatial planning. Urban and land use planning have been geared to promote sustainable development" (Ministry of Environment 2).

The primary objectives of the Land Use and Building Act are to "promote the following through interactive planning and sufficient impact assessment" (many of these objectives tie into the planning goals described later in the Arabianranta and Maunula case studies):

1. a safe, healthy, pleasant and socially functional living and working environment which provides for the needs of various population groups, such as children, the elderly and the disabled;
2. economical community structure and land use;
3. protection of the beauty of the built environment and of cultural values;
4. biological diversity and other natural values;
5. environmental protection and prevention of environmental hazards;
6. provident use of natural resources;
7. functionality of communities and good building;
8. economical community building;
9. favorable conditions for business and industry;
10. availability of services;
11. practical traffic arrangements and especially public transport, walking and cycling.

(Land Use and Building Act 2000)

The new Act creates three levels of land use plans, described in depth later in this chapter as they relate to Helsinki planning. These three levels are the regional land use plan, the local master plan, and the local detailed plan (Reform in the Land Use 4). This system is designed to respect the varying sizes of Finland's municipalities, with some ranging from less than one thousand residents to Helsinki with over a half million population. (Regional Land Use 2).

The Ministry of the Environment oversees Finland's land use planning system. Generally, the Ministry is responsible for environmental policies, coordinating local

planning, housing, and strategic administration planning (Ministry of Environment 1). The Land Use Department within the Ministry focuses on sustainable land use, protecting the environment, and improving the living environment, in general (Ministry of Environment 3). One unit of the Ministry also works internationally to support coordinating environmental policies regionally, in the EU and globally.

Planning in Helsinki

One of the biggest planning issues in Helsinki relates to a City-identified housing shortage. According to one City of Helsinki publication, this housing shortage affects 25,000 people, over half of whom are young adults still residing with their parents. Planning's goals for this redevelopment strategy include developing housing in close proximity to Helsinki's job base, the focus of which is in the central city; it also sees the importance of promoting short commutes which reduce traffic, make the bicycle a viable commuting option, and fit in with the excellent public transportation network. Arabianranta is an example of such an area.

Helsinki and the other municipalities in Finland follow the same general planning steps. Within Helsinki, the City Planning Department is responsible for the city's built environment. With guidance from the regional plan (*maakuntakaava*), which is prepared by the Regional Planning Authorities (comprised of the municipalities of Helsinki, Espoo, Vantaa and Kauniainen), a legally-binding set of guidelines are created. The City's land use planning is guided by the 1992 master plan (*yleiskaava*). Part of this master-plan is a zoning map which divides the city into five main land use categories: housing, commercial, mixed metropolitan uses, public utilities, and recreation and parks. (Detailed Planning 2). The next, more-detailed level of plan is the local plan which "outlines a development area's land uses and overall character, primary road network and transport connections, green areas, together with essential local services such as schools, nurseries, library and local shopping facilities." This

level of plan also includes such details as overall scale of development, permitted floor area, parking requirements, and the layouts for blocks.

The detailed plan level (*asemakaava*) is the plan at the development control level and has the legal sanction to establish development or to change the land-use designation. The detailed plan also guides the design guidelines of an area. The detailed plan can be on several scales, ranging from a small development site to an entire district. According to the Planning Department, these plans are being increasingly used to recommend design guidelines for sites or districts, as well, though they are not required to do so (Detailed Planning 3).

In Helsinki, one of the unique (and enviable) planning situations results from the fact that the City owns 66% of the land within its boundary and the national government owns 13%. Thus, in total, public authorities own 79% of the land area of the City. According to the Detailed Planning publication, "in practice, it means that the City Council has a near monopoly in controlling development and explains the reasoning why the responsibility for planning all new development areas sits with the City Planning department."

Public Participation in Helsinki
Traditionally, the majority of the public participation took place with land owners (Reform 8). Although in the past there has been a limited role in the planning process for the public, according to Gordon, the role of citizens in widening. A key reason for this has been the expansion of public process in the Land Use and Building Act 2000. The role of public participation was in Finland is different than in many other nations without social democracy, according to several people whom I interviewed, because the public has a more supportive relationship with government. The people, as part of the social democracy, expect to be looked after by the government and thus also have more built in trust with the government. A practical result of the Land and Building Act 2000

is that now the planners must first draw up a public consultation and impact assessment document (*osallistumis ja arvointi suunitelma*). Notification of the draft detailed plan is sent to those with a legal interest and those surrounding the site (including neighborhood groups). Notification is also placed, on larger projects, in newspapers, and the plans are available for public viewing at the Planning Department.

Before implementation, the plan must be accepted by the Planning Committee, then the plan is put on hold for public review for usually 30 days. If there are objections (*muistutus*), then the plan will return to the committee, or will proceed to the next stage: the City Board. The City Board can either endorse the recommendations or send the plan back to the Committee for revisions. After this process is completed, the proposed detailed plan goes to the City council for the final decision. After approval, the detailed plan becomes legally binding upon the land. After the City Council approval, the only way to challenge the detailed plan is in the High Court (this must be done within 30 days).

Information and Communication Technology in Finland

The Finnish Information Society

Finland is one of the best examples of national "information technology for all" policy and the successful public private partnerships to support it. The major scholarly interest in Finland is for three primary reasons: how Finland has become one of the most competitive economies and most technologically developed information societies (using a different model than Silicon Valley and Asia); the key role of the welfare state in Finland; and the relationship between "globalization and national identity" (Castells and Himanen 3-4). Finnish President Tarja Halonen explains that this is a necessity for a small country on the world stage to be innovative if it is to have an impact (High Technology Finland).

Finland is frequently acknowledged as an early-adopting nation of new technologies. The recent Global Competitive Report and the World Competitiveness Yearbook placed Finland near the top in competitiveness and innovation (Tekes). In 2001, the International Institute for Management Development (IMD) ranked the United States, Singapore and Finland as the three most dynamic economies in the world (Castells and Himanen 4-5). Meanwhile the same organization found that Finland has a lower rate of social injustice compared with most of the developed (and developing) world (Castells and Himanen 7).

A 1999 *Wired* story called Finland "the 21st century is in beta" (Castells and Himanen 11). But, the most distinctive feature of Finland is its combination of an information society and the welfare state (Castells and Himanen 12). The country has made a "tremendous commitment" to promoting equal access to technology (Servon 17). The innovation initiative has come from the public, private and university sectors. This ties in strongly to the actual technology and the mentality towards technology seen in both the Arabianranta and Maunula cases.

One of Castells' most critical points, and this relates to the planning process in Finland as well, is that "the Finnish state has been seen as the bearer of Finnish identity" (Castells and Himanen 12). This provides the context for a relationship between citizens and planners that is non-adversarial. Finland is also interesting to study because unlike the other Nordic nations, Finland has risen quickly from a poor status to a world technology leader (Castells and Himanen 12).

Few mentions of technology in Finland fail to acknowledge the role Nokia has played. While Nokia is known as the largest company in Finland's IT sector, there are many companies beyond it; Nokia has 300 suppliers in Finland, but there are more than 3000 companies in Finland's IT cluster (Castells and Himanen 25-27). Helsinki is regarded as "one of the most advanced cities in Europe with regard to both new ICT development

and adoption" (Van Winden 78). In a book on European ICT as a catalyst for sustainable development, Lasipalatsi, a mixed-use complex in Helsinki's city center is used as the primary example. But, this Helsinki case study also includes a sidebar about Arabianranta – Helsinki's Art and Design City. In it, Arabianranta is described as an area that will "be very sophisticated" with a broadband network and open access for everyone in the area (Van Winden 74). The authors write that the connection between Lasipalatsi and Arabianranta should be strengthened as a strategic development in Helsinki (Van Winden 77).

The key factors in Finnish innovation are educated people, a functioning financing system and a culture of innovations. Finland also has a strong "hacker" ethic, in the positive sense of the word (Castells and Himanen 46). The country has a strong national innovation system, including Sitra (the funding agency of the Nettimaunula project), the Science and Technology Policy Council, Tekes and public university research (Castells and Himanen 49).

The role of everyday people in pushing innovation cannot be over-stated (Castells and Himanen 62). One example of this was the Finnish people's role in popularizing SMS (short message service or text messaging). The Internet is beginning to have a greater affect on tele-democracy and local governments (Castells and Himanen 123). Finland has a strong cultural history of survival and the information society projects are one more survival attempt by the country in the global economy (Castells and Himanen 130). But, in addition to a survival ethic, is also an "enthusiasm" for new technology. This has been seen even since the popularization of telephones in Finland in the late 1800s. Finland is creating active projects "aimed at building local/regional information societies) (Castells and Himanen 149). These are necessary to counter the increasing spatial concentration in the nation's urban areas.

Public Sector Catalysts

The Finnish National Fund for Research and Development (Sitra) has played an important role in driving Finland's technology agenda. Sitra is an independent public foundation that is supervised by the national Parliament. Its activities are "designed to promote the economic prosperity of the Finnish people" (Sitra). Interestingly, the foundation is financed by an endowment and return on its venture-capital investments. Broadly, Sitra is focusing on six programs related to the competitiveness of Finland: Innovative Program, Health Care Program, Food and Nutrition Program, Environmental Program, Russia Program and India Program (Sitra).

Another key agency in Finland is Tekes, the Finnish Funding Agency for Technology and Innovation. Tekes, with a budget of approximately 400 million EUR, is funded by the Ministry of Trade and Industry. Using this money, Tekes finances R&D projects, both private sector and in universities, and especially "promotes innovative, risk intensive projects" (Tekes).

Private Sector Leadership

The research and development (R&D) sector of Finland has grown to over 3% of GDP, one of the highest in the world (Nokia). Also, the Finnish government has "taken an active role in helping create the right kind of financial instruments" (Nokia). The private sector, with support from the national government, has had an influential role in driving technology innovation in Finland. The largest company, and best example of this, has been Nokia. The company, based in Espoo across the water from Helsinki, employs over 50,000 people worldwide and is the world's leading mobile phone supplier (Nokia). Approximately 39% of the company's total workforce is employed in R&D (Nokia). Many of the smaller companies in Finland are suppliers to Nokia and the other players in the Finnish IT sector.

This chapter has illustrated background on some of the key trends related to planning and technology in Finland. The next chapter looks specifically at the Arabianranta and Maunula cases – essential to understanding the impact of ICT use on the neighborhoods' social networks and planning processes.

CHAPTER 5: CASE STUDIES

The case studies of Arabianranta and Maunula illustrate the strong relationship between neighborhood social networks, ICT use and collaborative neighborhood planning. Arabianranta and Maunula are very different communities and this section describes the existing spatial, social and technological conditions of each. Specifically in terms of ICT, the section examines the infrastructure, hardware and software implementation.

Arabianranta

Overview

Arabianranta is an emerging neighborhood along Helsinki's eastern waterfront. This mixed-use area, including residences, commerce, and academic uses, is seeking to become "the leading innovation center of design… using the latest technology" in Finland (Raina). The plans for Arabianranta were covered extensively, especially considering its geographic location, in the international press as one of the most potentially technologically advanced neighborhoods in the world in 2000 and 2001. This combination of technology and new development makes Arabianranta an interesting case study to analyze ICT and public participation in planning.

History

Although some archeological excavations remain, the Arabian Waterfront (known as Arabianranta) borders on the original founding spot of Helsinki by Swedish King Gustav Vasa around 1550. The center of the city was relocated several miles south to its current site in the early 1800s, which resulted in this original founding site to become part of the city's hinterlands. Mainly industrial uses cropped up in this waterfront area. During this period, the area became famous for the Arabia porcelain factory, one of the world's best-known brands.

In 1992, new City of Helsinki planning efforts began in Arabianranta (Sundman). One of the challenges to the City's plans was an eight year process with some prior inhabitants responding to a complaint that the City did not follow environmental regulations in the plans. This challenge went to Finland's highest court and EU before being resolved (Sundman). According to Kari Raina, director of ADC Helsinki, Arabia has always been the beginning of new things, and, despite some challenges, the new development described in the following sections is consistent with this description.

Figure 1: Former Arabia porcelain factory (now University of Art and Design Helsinki)

Socio-Economic Characteristics

The residents of Arabianranta have a mix of incomes, though the perception of the area is more upscale (Lindbäck). The neighborhood is still very homogenous with most residents in their 30s with one small child (Kareinen). A study done by Simo Haanpää

from the Helsinki University of Technology found that the neighborhood's technology amenities were not a major factor in locational decision-making (Haanpää). The primary groups moving into Arabianranta were young families with one or two small children. This was a result of the housing types built in the area, nature and perceived quality of life (Haanpää).

Built Environment

Arabianranta includes a mix of residential, retail, office and light industrial uses. In terms of retail, there are two main centers, the Kauppakeskus Arabia shopping center, which includes two grocery stores, a liquor store and other small shops. In the community shopping center (located less than ½ mile north), there is the Arabia Factory store and other specialty retails shops. These retail locations are co-located in the same building as the public library and connected to the University of Art and Design Helsinki campus. During the time of my research period (August through December 2006) Arabianranta was about half built out.

The Arabia factory has been adaptively reused as the campus for the University of Art and Design Helsinki. Other educational institutions in Arabianranta include the Pop and Jazz Conservatory, Av-communication, Helsinki Polytechnic Stadia, Arcada Nova, and the Arabia Primary School (Raina).

As planned, Arabianranta has evolved into the art and design neighborhood for Helsinki (the capital city of a country known for its design). ADC Helsinki has placed a significant emphasis on incorporating public art, including some produced by students, in buildings and public spaces. Currently there are about 200 of these art pieces installed, and the neighborhood has one staff member, Tuula Isohanni, dedicated to public art (Raina).

Figure 2: Arabianranta typical apartment block

Natural Environment

The planning for Arabianranta has included significant space for parks, greenspace and a natural waterfront. The shoreline in Arabianranta has been restored by the City Council for walking paths and bike routes. The City Planning department views the shoreline park as serving as a local recreation area for the neighborhood's residents, while also linking several other recreation routes in surrounding Helsinki districts. While the shoreline park will return to part of the old Helsinki bay ecosystem, the site imposed challenges that led to the park being almost entirely man-made: "excluding the Baize Factory park, [it] will feature no 'natural' original nature whatsoever" (Arabianranta 4).

Physical Connectivity

Public transportation

Despite being removed from Helsinki's city center, Arabianranta is connected to the City's excellent public transportation network. The City extended tram route #6 to the neighborhood, traveling up Hameentie, taking a right at Arabiankatu, then ending behind the University of Art and Design Helsinki campus on Arabiankatu. The main bus routes connecting Arabianranta to the city center run through the center of the neighborhood on Hämeentie and along the western edge of the neighborhood on the highway. In addition to connections to the city center, there are several routes which provide connections to the East. Helsinki's subway system includes a station approximately one and a half miles south of Arabianranta at Sörnäinen. The transportation connections make Arabianranta a convenient neighborhood for Helsinki residents who may commute to many different parts of the city. Additionally, the City is seeking to "construct interesting light traffic routes, especially for cyclists, in the shoreline park, and towards the city centre, Pasila, Käpylä and Koskela."

Figure 3: Tram #6 through Arabianranta

Streets/sidewalks

The redevelopment of Arabianranta includes a new street network, with some changes to the traditional grid structure. These streets include routes and dedicated sidewalks for pedestrians and bicyclists. The Planning Department is also intending to create a main street along the tram route behind the university campus (Sundman).

Information Technology Infrastructure and Applications

Arabianranta received international attention when the "Helsinki Virtual Village" concept was unveiled. In a *Wired* magazine article, it was written that in the Helsinki Virtual Village "…your cell phone is a broadband browser, a smart wallet, and a passport to the wireless community of the future. And your fellow citizens are the content, 24 hours a day." The plans for Arabianranta included creating the world's first truly wireless community. This plan involved a combination of "state-of-the art wireless infrastructure and the very latest wireless services" (Shaw 156). The infrastructure would be mobile phone-based, not based on a PC. The article portrayed Arabianranta as a living experiment which will beg questions many questions including: Will the wireless access create a more of less cohesive community? How will privacy concerns be considered? What do people really want in technology?

The article, and others like it, painted an idyllic, futuristic picture of the neighborhood:

> Say it's Tuesday. You've had a hard day at work and don't feel like joining your friends at the gym. Your Nokia communicator flashes a message that the latest Aki Kaurismäki movie is playing tonight at the local art house - the HVV system knows you might be interested because you went to see Leningrad Cowboys Meet Moses by the same director last week. So you message a friend who might want to go, too. She replies that she's already bought a ticket. With the aid of a seating plan that appears on your communicator screen, you not only book your admission but rebook hers, picking two seats in the middle of a row. The system alerts your friends that you won't be working out tonight and your home heating system that you'll be returning later than usual. Then it adds the fact that you're clearly nuts about Finnish auteurs to its ever-evolving list of your tastes and habits - maybe even notifying you that a movie club has formed in

your apartment building. Would you like to join? Meanwhile, you haven't returned the message your mom left you at work; she wants to discuss her plans for Dad's surprise birthday party. Because she lives in Arabianranta and you've allowed her access to some parts of your HVV profile, she can see that you've gone to the movies tonight, sparing you a "Where are you?" scold on your voicemail.
(Shaw 156)

The area's development resulted from a public-private partnership. The private partners included Sonera, IBM, Digia, and the Symbian Alliance (a joint venture with Ericsson, Motorola, Nokia, Matsushita, and Psion) (Shaw 156). While Shaw writes in *Wired* that the City of Helsinki had targeted Arabianranta as a technology development area, this was contrary to what I learned in my interview with the City Planner in charge of the area, Chief Planning Architect Mikael Sundman. He stated that in Arabianratna, information technology has been mainly a marketing tool and that the City Planning Department determined that "art and science" would be the real focus on the axis between the railway station and Viiki (which includes Arabianranta). In the City's plans, medicine and technology were focuses of other areas, not Arabianranta. Thus, the Helsinki Virtual Village was actually not a municipal idea, but a private initiative to recruit businesses to the neighborhood (Sundman). According to Sundman, and others, the majority of people now view the area as an arts area.

In addition to the article in *Wired*, the Virtual Village received other international coverage. In a January 2001 *Time Magazine* article, Pekka Sivonen wrote that "The Virtual Village gives us insight because we are building a huge laboratory of 10,000 people… you need to just throw things against the wall without researching inside out and knowing whether they're going to stick." *Newsweek* wrote that "urban planners are starting to develop communities like Arabianranta, an elder-friendly quarter of Helsinki, Finland, where broadband links all 8,000 residents, and the sidewalks have no cracks to trip up old feet." In a March 2001 *Forbes* article, the authors write that "a slew of high-tech giants are betting that a tiny Finnish software company can turn the wireless Web into a reality." It also portrays a future in which by 2005 the "villagers will be

communing with third-generation, or 3G, service, faster than 300 kilobits per second…"
It was called the coming out party for Digia and CEO Pekka Sivonen was the man of
the hour. However, the closing line prophesized that "the Virtual Village could end up a
costly government-designed white elephant, but it will make for a lively R&D lab for
Digia."

The current technology in Arabianranta focuses on multiple services (Raina). The
backbone of the network is the fiber optic cable that was laid when the neighborhood's
development began. In 2005, approximately 60% of the residents are using the high
speed broadband (10 MB/s) at the cost of 32 EUR per month. The portal services,
which are free, are being used by about 40% of the population. In the next phase
however, with a new provider, everyone in Arabianranta will be connected at the base
speed of 1 MB/s, and those desiring faster connections will pay for a service upgrade.
(Raina)

The portal itself is currently the main application in Arabianranta. It is the neighborhood
homepage, operated by ADC Helsinki. There is an average of 500-600 visits per day to
the website. Interestingly, these figures tend to increase the more often ADC Helsinki
updates the website (Salonen). There are currently over 2,100 registered uses on the
site, the majority of whom are residents (Salonen). The website is primarily in Finnish
with some English selections; Swedish pages are being planned. The portal's main page
offers news updates and provides links for residents, students and businesses. Specific
links include:

- Presentations of companies, schools and residents
- Events
- Arts and culture
- Projects
- Questionnaire with monthly question (answered by about 100 people/month)
- Maps
- Construction information
- Fishing permits

- Network support for residents
- Services for companies
- Services for portal
- Network announcements
- General notice board (examples: kitten found, key found, recommendations for good beaches)
- Link to HELKA (city association of neighborhoods)
- Photos—residents' photo submissions for the website
- "In Our Neighborhood" cartoon characters
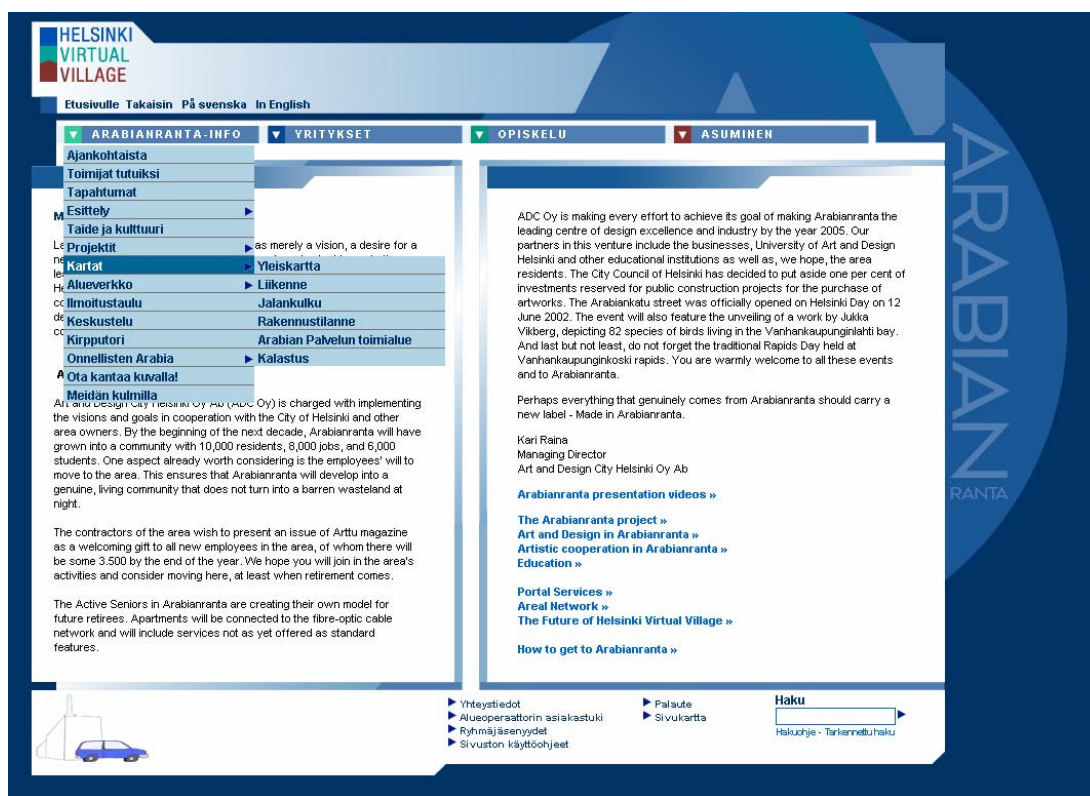
Figure 4: Helsinki Virtual Village portal

The most used links are those of the (apartment) house pages. Each house has a page with access only for residents of the specific house (Raina). The ADC Helsinki's goal is to keep the information on the house sites "unofficial" without the feel of the government or an official body. Each house page is different – and ranges from basic to complex. It is up to a minimally compensated volunteer, the E-House Moderator, to design the page and update the content. Thus, the pages may include elements such as

photo galleries, house books (electronic versions of the apartment house guest book) or online sauna reservations. These house sites serve as websites within the larger portal structure. Additionally, all of the house sites include a discussion board that may have as many as 1,000 topics per year (Raina). Raina also emphasized that this was not based on any other neighborhood model—this is a social, not technical innovation

According to several E-House Moderators, the extent to which discussions in the house happened and people were engaged electronically depended on the initiative taken by the E-House Moderators (Lindbäck). The discussion topics on these boards focused on everyday matters; there was an opportunity to discuss and focus on issues of local concern, but less so those issues of neighborhood or city concern. Typical issues of discussion have included fence design, lost-and-found, and advertisement of social gatherings (Salonen).

However, one of the applications included in the portal is an interactive "In the Hood" input tool. It gives residents, workers, and students, a chance in several languages to give their feedback about the future of Arabianranta. This application was a joint project of Arabianranta and the Media Lab at UIAH.

The next Virtual Village service roll-out will focus on TV services. This will include digital cable and Internet Protocol Television. Currently, the HVV TV provided has mostly local content. Additionally, Nokia Mobile TV is still in the beginning stages, so there may be some tie-ins there. Part of the reason why wireless (wi-fi) services have not been a focus of the infrastructure development in Arabianranta has been that it would limit future expandability into TV. It is expected that the neighborhood will continue to be a testing ground for new products, such as the recent Elisa (Finnish mobile provider) test of a Nokia PDA in the Arabia shopping center (Raina). This new service will be a good way to promote small businesses and increase communication in Arabianranta (Lindbäck).

Neighborhood Planning and Information Technology

Though the City Planning department does not view Arabianranta as a test area for mobile or other network technologies, they have used the neighborhood for several other pilot projects. First, Arabianranta is the first (and currently only) area in Helsinki to use the Percent for Art program. In this program, 1-2% of development costs are earmarked for public art in the neighborhood (Sundman).

Currently, according to Raina, public participation includes a system to collect ideas, but not yet a return feedback loop. The house communication systems in place have primarily connected residents of Arabianranta to each other, and prior to construction, connected the future residents with the construction companies. Two neighborhood issues which have been discussed in Arabianranta, and which the residents have used the Internet services to organize, have included day care issues (an online petition has been created) and coordination on the extension of the tram (residents coordinated their communications with city officials prior to the tram's extension) (Kareinen). These issues illustrate the largely un-used potential of the Virtual Village infrastructure and applications in influencing larger area issues.

Two companies, both of which are headed by Raina, the Arabian Service Company and ADC Helsinki guide the future of Arabianranta. In this future, their plans include campus walks, additional public art, creative campus emphasis, and a continued move towards "not inventing the latest technology, but using it" (Raina).

Maunula

Overview

Maunula is a working-class neighborhood in the northern part of Helsinki built after World War II. It is an area which has struggled with high unemployment, an aging population and social problems. But, Maunula has an active citizen base and is preparing for a bright future (Kurki). It is a neighborhood with affordable housing and

many residents want to move to it because of low prices and a good neighborhood plan (Pyöry). It is also a neighborhood with an innovative technology initiative and the momentum to propel itself into a positive future. Maunula appears to be reemerging as one of Finland's most technology-savvy communities.

History

Maunula was built primarily in the 1950s and 60s (Kurki). As Finland industrialized and urbanized, this area was built for young families, and the building types and unit sizes reflect this (Pyöry). In this era, Maunula was built as a reflection of Finland's post-World War II democratic and free economic values (Kamppari). Self government has always been important to Finland, and Maunula has been a product of this philosophy – for this reason the neighborhood makes an interesting case study (Kamppari).

Socio-Economic Characteristics

Maunula has approximately 9,000 residents (Kurki). It is an area that has suffered from low incomes and high unemployment rates. Unemployment, however, has declined from 24% during the depression in the 1990s to 14% in 2001 and then to about 11.7% in 2004 (Kurki). The residents of Maunula are also amongst the oldest in the city, with 25% of the population over 65 years of age in 2001 and 2004 (Kurki). This aged sector of the population steadily increased over time, from only 4% over 65 years old in 1962 to a peak in 1991 (Kurki). Since 1991, the elderly population has stabilized at about 25% (Kurki).

While the population has aged, since the early 1970s the population of Maunula has steadily decreased from a high of over 14,000 in 1972 to 9,000 in 2000. At the same time, household size has also decreased, with the number of single-person households showing the biggest increase (Kurki). Despite these challenges, Maunula has one of the most active citizen bases in Helsinki, organized into two resident associations: one for

owners (Maunula Association) and one for renters (Association of Inhabitants) in the neighborhood (Horppila).

Economically, the main employment clusters in Maunula relate to real estate, home maintenance, services, retail, design and person care (Kurki). The neighborhood also has several key community gathering spaces, including the Saunabaari (senior citizen center), Mediapaja, library, the café across from the Mediapaja, and the recreation center (Saavola).

Figure 5: Maunula shopping center

Built Environment

Maunula has a significant amount of 1950s architecture and these include some of the most desirable buildings in the quarter. The area is primarily residential with mixed-use along the main commercial corridors. Some of the key neighborhood buildings include

the high school and college, the hospital, library, welfare office, senior home, Saunabaari, the church, and sports center (Kurki).

Natural Environment

The quarter has several parks, playfields and playgrounds that provide open space for the residents of Maunula. The neighborhood is also connected to Helsinki's linear Central Park via several pedestrian paths. Near the Central Park is Maunula's community garden, providing low-cost urban agricultural space for the neighborhood's residents (Horppila).

Physical Connectivity

Public transportation

Several bus lines serve Maunula. The Jokeri bus line, with the largest number of passengers, carries 25,000-30,000 passengers per day at 5 minute intervals during rush hours and 10 minute intervals at other times (Kurki). Along this line, at the new shopping center, there are 8,000 entries and exits from the bus daily. In the old center of Maunula, across from the Saunabaari and near the Mediapaja, there are an average of 1,500 passengers entering and exiting the buses daily (Kurki). No tram lines or subway stops currently serve Maunula (HKL).

Streets/sidewalks

The sidewalk network through Maunula is extensive and includes paths that cut through the open spaces for pedestrians. The main street running through Maunula, Pakilantie, carries 12,000 cars per day (Kurki).

Information Technology Infrastructure and Applications

<u>Home Street Project</u>

The Home Street (*Kotikatu*) project was the initial project that began neighborhood-level website development in Helsinki. This project began in 1997 as a partnership between the Helsinki University of Technology, HELKA (the city's association of neighborhoods), and The Association for Local Culture. The key goals of the project were to increase local identity and citizen participation in planning and to do this through the Internet as a local tool (Home Street).

<u>OSKU Nettimaunula Project</u>

Nettimaunula was Maunula's pilot project as part of a national OSKU project (learning regions) grant funded by SITRA and the City of Helsinki (Rantanen). The OSKU – Learning Regions grants was primarily financed by SITRA, who contributed about 10 million EUR over three years (Rantanen). The main goals of the program, and by extension the Nettimaunula project, were to:

1. Build a citizen network so local people can create the core of the local information society.
2. Build the computer skills in these citizens by offering free education, including for older and low-income people.
3. Utilize unemployed people in each area by making them the first to be educated and employed as technicians, trainers and content developers.

Of the eight study areas, Maunula was the only urban case – some other areas included in the study were large and rural (Rantanen). Maunula was chosen as a project area for several reasons including an active citizen association, past cooperation with researchers, entrepreneurs, and other residents' associations, and residents with an institutional memory and "know-how." The project lasted approximately two years between June 2001 and May 2003 (Kurki). Nettimaunula had a steering committee that

included the City of Helsinki, the Helsinki University of Technology, and the
Association of Finnish Local and Regional Authorities (Kuntaliitto).

Nettimaunula had three base elements that were implemented in Maunula:

1. Information technology itself
2. Education about how to use the technology
3. Getting experience using the technology and building a virtual community

The budget for Maunula was 416,000 EUR and included a program for the unemployed
in the neighborhood. The eight month program allowed sixteen people to be hired as
trainers, computer technicians and content creators; four of the people were hired to
work on the project after the program (Kurki).

One of the best outcomes for Nettimaunula was that the project helped start a new
discussion about telecommunications policy in Finland and improved perceptions of the
neighborhood through coverage in Finland's main newspaper, the *Helsingin Sanomat*
(Rantanen). However, in many ways, it is difficult to evaluate what were the benefits
from Nettimaunula itself and what were the benefits from increased attention to the
neighborhood. The next sub-sections describe the individual components of the
Nettimaunula project.

Affordable Computer Use: Hardware and Internet Connections
An important aspect of Nettimaunula was ensuring that people had access to computers,
and then affordable connections to the Internet. The project included hiring and training
unemployed workers to refurbish old computers to be given to some low-income and
senior residents of Maunula without computers (Rantanen).

One of the key elements of Maunula's success was in creating affordable 1 MB/s
Internet connections for its residents (range from 7-14 EUR/month). Technically, this

was done by using a box that was shared by residents of the entire apartment house (Kurki). In order for this to happen, the project did the difficult negotiating work with Sonera and Elisa (large Finnish telecommunications operators); using a small pilot project (one 30-unit apartment building), they were able to negotiate Internet access for 7 EUR per month. When this proved successful, the experiment was expanded to other apartment houses in Maunula (Rantanen).

The project also spurred additional creative solutions to Internet access. There have also been some agreements between the rowhouses in Maunula (owned units) to create a wireless (WLAN) network. Ten groups of rowhouses, each with four to twenty units, are involved in this effort. This is an example of the "ad hoc" nature of adopting this technology (Pyöry). Before the Nettimaunula project, Maunula had below average rates of broadband usage, while after the project, the neighborhood had above average rates (Rantanen).

Neighborhood Net Center: Maunulan Mediapaja

One of the successes of the project was the expansion of the Mediapaja, or neighborhood net center. It was the first place I visited in Maunula and was one of the centerpieces of the neighborhood. It not only had free Internet access but was also a place where groups could meet, job seekers could use printers, copiers and scanners, and computer trainings could be held. There were even art installations by local artists in the center. The Mediapaja was staffed exclusively by volunteers and averaged 1,000 visits per month (Kurki).

Figure 6: Maunulan Mediapaja

Computer Trainings

The computer trainings and educational programs were designed to be simple and respectful of the lack of computer experience of many of the residents. The courses were small with a maximum of two students and one teacher who had at least a base level of knowledge. The feeling was supposed to be peer-to-peer as opposed to expert-to-peer. These courses included Internet, Photoshop, web design, and desktop publishing programs (Kurki).

General Web Presence

The Maunula website has undergone several iterations since the Nettimaunula project. The primary functions of the website are providing information to the residents, serving as the face of Maunula to the outside world, and acting as a communication tool for

residents (Kurki). It is important to note that the content for the website (www.maunula.net) has been developed and maintained by the local residents. But, while the local people were creating the content, the City was also engaged as a partner cooperating and supporting the project (Kurki).

There have been three phases of Internet development in Maunula (Rantanen). The website has evolved into a web-based, Mambo open-source system, launched in October 2004. This system allows many people to have an administrative login, with varying permissions. Currently, approximately thirty city quarters are using this new software for their websites and it is proving popular in Helsinki (Rantanen). The key elements of this new website in Maunula include local events, news flashes and sections on nature, history, housing and services (Kurki).

From 2000 to 2005, the usage of the Maunula website increased significantly from about 10% in 2000 to about 45% in mid-2005 (Kurki). It may even be possible to reach 70% later in the decade (Kurki). The website in Maunula from 1999 to 2005 included sections and links under Local Culture, News and Media, Services, Housing and Development. The range of links include everything from bulletin boards to exercise routes for the elderly to neighborhood transportation plans (Kurki).

From 2002-2004, there was another neighborhood portal in operation (many residents I spoke with found it confusing and repetitive). This portal included an individual login, email address, calendar, channels, latest discussion topics (including private intranets), and news "flashes" (Kurki). With these two websites there was significant duplication of information (Mäenpää).

Maunula's website is open to everyone and has had many discussions with activity (Horppila). Often, discussions on the website lead to face-to-face discussions offline – this is one of the values of the project, facilitating bringing people together. It is

important to note that the website is not where decisions are actually made (Horppila).
According to City of Helsinki Crime Prevention Program Coordinator Mikko
Virkamäki, Maunula is their only target area in Helsinki where people are mobilized on
the web. In the agency's regular resident surveys, they have added questions about the
perceived communication levels in the neighborhood and have found that "if the
communication level goes up, then the fear of crime will go down." This is an example
of how Maunula is transforming their neighborhood with little money.

One of the negative aspects of the discussion boards in Maunula were a number of anti-
immigrant and racist posts. In these cases, anonymity became an issue—and the
question remains of whether it is best to allow residents to post anonymously
(Mäenpää).

Figure 7: Maunula homepage

Planning and Development Focused Applications

One of the values of using the Internet in planning, according to Helsinki University of Technology Architecture Professor Heli Rantanen, is that it can be used to record decisions and create an institutional memory in the neighborhood that goes beyond individuals. The Helsinki University of Technology Department of Architecture created a simple, interactive GIS map which allowed residents to pinpoint safety issues in Maunula (Rantanen). This map was done in coordination with the City and served to get people's perception of the neighborhood visually. There was then an opportunity to link the spatial perceptions with the discussion board topics.

One of the main problems with using these types of applications in planning is that it is difficult for the local people to interact with the city officials, as city officials cannot make official statements on the site and do not want to make commitments in writing if they are not official policy (Mäenpää). However, it does allow residents to be proactive in their communications with the Planning Department, as opposed to simply resisting whatever plans are created (Horppila).

Internet Church

Maunula is home to the world's only Finnish Lutheran Church webcast. The church project was partially funded by Sitra and the Parish. Importantly, this resource has not only been used to broadcast services, but has also been used to record and archive community meetings, planning workshops, and local forums. The archives of these events are available at www.verkkokrikko.fi (Rantanen). The beauty is that now people (and especially Finnish people) around the world can watch church services from Maunula (Rantanen). Currently, the church is mainly broadcasting religious ceremonies, though it has done a mix of religious and community events in the past (Hagland).

Neighborhood Planning and Information Technology

General Neighborhood Development

Somewhat surprisingly, because of the demographics of Maunula, at the beginning of the Nettimaunula project, 40% of the residents had Internet connections, 55% had a computer and 81% had an email address. Then by 2004, after the completion of Nettimaunula, the numbers had increased significantly to 60% having an Internet connection (44% broadband), 73% having a home computer and 96% having an email address (Kurki). By these numbers alone, Nettimaunula could be termed a success. However, through interviews I learned that this project had given this community confidence in the Information Age and was a major turning point for the neighborhood (Kurki). The results in Maunula could be compared to those of Netville, the well-known MIT study (Mäenpää).

In addition to increasing computer usage, involvement in community development, and neighborhood communication, the Nettimaunula project was used for economic development. These efforts involved keeping local services in the area and trying to recruit new companies to Maunula. One successful example was the location of a new bakery operator when the long-time bakery was about to close (Mäenpää).

Planning Use

Hannu Kurki, an Advisor in the City of Helsinki's Economic Planning Division and long-time leader of Maunula believes that the planning process, aided by information technology, involves five main steps: visioning, analysis, process, refining and plan-making. With these steps in mind, the Nettimaunula project can be simply viewed as the virtual component of the neighborhood's other activities, none of which can be successful without the others:

- *Local forums*, which bring new people into the area as guest speakers (for example, I was invited to give a talk on information technology and public participation in Portland, Oregon). These forums are a strategic tool to create

networks and stimulate discussions; approximately 35 community members attend each bi-monthly forum.

- The *Maunulan Sanomat*, the local newspaper which is published quarterly but ready by approximately 95% of the residents.

- The *Mediapaja*, with its free Internet access, represents a physical meeting spot for Internet-use.

Bus Service Issue

One of the small, but notable, examples of mobilizing citizens around a planning issue through Nettimaunula was when HKL threatened to reduce bus service to Maunula, there was a sudden response organized through the network. Ultimately, HKL changed its plans and retained Maunula's bus service (Mäenpää).

Shopping Center Redevelopment

Probably the best example of how Maunula has used the Nettimaunula project in planning is in the case of the Maunula Shopping Center (Kurki and Rantanen). In the case of the mall, this property lowered the reputation of Maunula during the depression (Rantanen). Two of contributing factors behind the shopping center's reputation include its proximity to the Social Security office, where many people receive their checks and then take their money to the bars, and the park, where many intoxicated people spend their days (Kamppari).

In mid-2000, the Planning Department and the Real Estate Office were both making decisions about the future of Maunula and the shopping center in particular. The renewal of the mall lease came to the city—the neighborhood proposed that the mall owner get a three year lease extension and be obliged to make a new development plan for the site (Rantanen). The two resident associations sent a letter to the city government seeking to influence these decisions. This was particularly necessary because the existing shopping center had become blighted and was perceived as the

center of the neighborhood's problems. At this critical juncture, the Real Estate office was prepared to extend the shopping center's land lease for another 30 years; the neighborhood believed that this would lock existing land use patterns into the foreseeable future.

At the time, Helsinki University of Technology Professor Aija Staffans also worked in the Real Estate Office for the City of Helsinki and was serving on the City Council (Rantanen). Staffans had a critical role in both the Nettimaunula project and the shopping center process. The "Developing Maunula Center" webpage was launched in 2000 (Rantanen). Multiple plans were created, including by the residents, the HOK/Elanto food company, and the existing shopping center owners (Kurki). Between 2002 and 2004, through a competition, the alternatives were narrowed from six choices to three choices to the final site. While this process was unfolding the City of Helsinki Real Estate Office agreed to extend the lease for three years, to allow the flexibility for whichever plan might emerge. This is an example of the power of the City's land use holdings in guiding development. The end result was that the website developed during Nettimaunula and its set of interactive tools told helped create a transparent process that was based on open forums and information sharing.

Through the Arabianranta and Maunula cases, it becomes apparent that spurring public involvement in the planning process involves more than just setting up a neighborhood with the latest infrastructure, hardware and software. These ICT elements need to be used by community members to strengthen neighborhood social networks. Through these social networks, communities can have an active voice in the Helsinki planning process. In the final chapter, I look specifically at how these cases support the literature related to ICT, social networks and planning.

CHAPTER 6: CONCLUSIONS

The literature and the two Helsinki cases support the necessity of a combination of infrastructure, hardware and software, to be used as a tool by neighborhoods in order to catalyze the public's voice in planning decisions. The use of ICT by Maunula, as well as the relative non-use by Arabianranta, for planning purposes points to the importance of the combination of technological and social components.

As described in the literature, many early technology theorists believed that expanding infrastructure would lead to greater equity in information access. However, as information technology expanded, researchers realized that this was an over-simplification. In fact, it takes a combination of factors to increase access to information technology, which could lead to use in planning and e-government. Arabianranta and Maunula, both "smart communities" by Komminos' definition, provide a detailed look at the interplay between technology and residents on the community level, with a specific view toward the impact on planning.

The worldwide publicity around the launch of the Helsinki Virtual Village created a unique opportunity to study technology implementation and use in Arabianranta. Although the Virtual Village may have fallen short of the initial hype, this developing neighborhood presents an interesting case of a specific type of ICT network. Maunula's status as a relatively low-income and aged area makes public participation and citizen power in decision-making vital in promoting its local interests. Maunula is the type of neighborhood which could have fallen on either side of the digital divide. Thus, the neighborhood's success in creating and expanding its technology initiative makes it a unique area to study.

In looking at these types of communities, it is important to note the different nature of the systems. I found that the technology leaders in both Arabianranta and Maunula

designed their systems specifically to fit into their neighborhoods—neither neighborhood was the beneficiary of a one-size-fits-all approach. I observed that the approaches and applications which were developed from a community-driven, "bottom-up" seemed to spur the most user-involvement in the planning process. This was a result of the greater participation by the residents of Maunula, compared to Arabianranta. Specifically, in determining whether a network could be characterized as bottom-up (or top-down), I studied who conceived of the network, financed the project, organized the initial installation, created the webpages, is able to add content, and what types of processes are in place for updates and changes. Though both Arabianranta and Maunula have top-down and bottom-up elements, the Maunula model is more community-driven – leading to greater community investment and use.

As always, technology is rapidly evolving. As described in the literature review, though desktop and notebook computers are the dominant hardware today for community networking, the trends are moving towards increased use of mobile devices. The key elements for success with mobile devices will depend on the integration of applications. While mobile phones, including many with advanced functionality, are widespread in Finland, the creation of social network-building applications for them is not. As important as creating the applications for the next-generation of Internet- and mobile device-based communications, will be ensuring that all segments of the population, including seniors and the poor, have access to these services. As the neighborhood ICT toolkit will be changing, Arabianranta and Maunula will need to keep up in order to meet their technological goals.

Arabianranta

Infrastructure

Arabianranta has the benefit of state-of-the-art infrastructure installed from the initial development stages. This was, of course, more efficient, and less expensive than a later

retrofit. Arabianranta's network was designed to allow capacity for additional services such as IP television.

Hardware

Arabianranta, owing to its income demographics, does not appear to have hardware access as a major issue for its residents. Those without a computer are able to use public terminals at the centrally-located public library branch. Additionally, students are able to access computers at the school campuses.

Software

ADC Helsinki has done a good job of creating web-based services that are useful and utilized. It seems to be particularly useful to have adaptable apartment house webpages. On the flip side of this, the house webpages are only as good and detailed as the chosen E-House Moderator wants to make them. It is ultimately the neighborhood residents, as well as the students and companies, who will make Arabianranta a thriving area, including in the ICT arena. Thus, the opportunity exists to have these stakeholders build lasting relationships as they build and personalize their neighborhood network. The emphasis, thus far, has been on applications that are scaled to the individual apartment house level. The discussions on these electronic boards tend to focus on house business, as opposed to neighborhood-wide issues. There are opportunities in the future to adjust elements of the neighborhood network in order to encourage greater participation in government and planning.

Social networks

An emerging neighborhood generally leads to newly developing social connections, as seen in Arabianranta. This may be part of the reason the Arabianranta network is not used significantly for planning. However, another reason for the lack of use of the neighborhood network for this purpose relates to a lack of pressing planning and other social problems in Arabianranta. Since the area is still in the development phases, it is

fortunate that residents seem excited about the plans. As there are many services in the area cropping up, Arabianranta may first see people become interested in information about other government services, including child care, schools and libraries, before spatial issues. However, Arabianranta needs to create mechanisms through which residents can give feedback and see the effects of their comments on any type of public issue.

Analysis

While, for a variety of reasons, the Virtual Village concept was not implemented as originally conceived and marketed, it does not seem to have doomed the neighborhood to obscurity or to being an unplanned mess. Quite the contrary, residents report their primary reasons for choosing to move to Arabianranta were not for the technological promises, but rather to live in a place which has public art, natural environment and adequate living space. This explains the high proportion of young families with one or two children. With these types of demographics, there is an opportunity to build long-term social ties and connections in Arabianranta. ICT can be used to nurture the social networks that are already developing. Additionally, ICT can be expanded from the apartment house to the neighborhood scale to build these social networks throughout Arabianranta. The development of neighborhood social networks can help facilitate community organizing and involvement when faced with planning decisions. This represents a clear opportunity to use the Internet as a way to start (but not finish) the task of building a community that is involved in the neighborhood planning process.

From my study, I have found that the Arabianranta case illustrates the results if any elements of infrastructure, hardware, software or social networks are missing. So far, a lack of long-term social networking (and pressing planning problems) has led to very little ICT use related to neighborhood planning. However, Arabianranta appears to be on its way to success and this is likely to change in the future. Importantly, it already has the network backbone necessary to stay current with applications in the 21st century.

But, related back to the literature, in order to be a thriving neighborhood, Arabianranta's social networks need to be continually developed if the "Virtual Village" is ever going to experience the full potential of its infrastructure, hardware, software and community.

Maunula

Infrastructure

As described previously, it takes more than just infrastructure to make a successful electronic network. In Maunula, the infrastructure was addressed through affordable, shared partnerships to wire apartment buildings. It also has included some wireless infrastructure in the rowhouse area. As a next step in the project, as mentioned by several community leaders, there is room to develop faster connection speeds.

Hardware

Maunula addressed the hardware need through a program which refurbished old computers to be provided to those who could not afford one. Also, their initiative smartly has involved having Internet terminals available at several locations in the neighborhood, including the Mediapaja and the library. The video recording hardware was installed in the church so that meetings could be recorded and archived. However, should Maunula's ICT initiative move in a more mobile direction, the neighborhood will need to ensure access to such devices.

Software

Since the project's inception, the software applications used by Maunula have been primarily web-based. This means that residents, and those interested in the area, can access the information from anywhere in the world. It also has created a source of pride for the neighborhood, which wants to put its best face forward toward the world through the Internet. Additionally, the recording software at the church allowed many decisions to archived and accessible from the Maunula website. These software applications are evolving, as evidenced by the three web software changes since the project's inception. This is important because the Maunula constantly needs to be looking toward the future to avoid technological stagnation.

Social networks

Throughout it all, there have been people who are committed to every aspect of Maunula's future. This was reinforced when pressing public transportation and spatial issues arose during the Nettimaunula project. When Maunula felt that negative outcomes were being imposed on it by the City government, Maunula's leaders began experimenting with its new ICT tool to supplement traditional methods of helping mobilize the active citizen base. The Maunula leaders found that their better coordinated and more quickly mobilized population was able to effectively advocate for their neighborhood interests in the larger City context. This was consistent with the findings from my interviews, from which I found that people believed that an active group of residents was able to act quickly using their new web resources. The challenge is, as in all technology projects, ensuring that everyone has (and retains) the opportunity to access the Maunula infrastructure, hardware and applications.

Analysis

According to Hannu Kurki and everyone else I interviewed, Maunula is a very special neighborhood to start with. This makes it an "extreme" case in itself. This is derived from its active citizen base and shared experience in overcoming obstacles. The technology project that was implemented complements the people in the neighborhood. People in the neighborhood stated that the website and Internet resources do not create the community, and as shown in the literature review it is the people who do that and the Internet serves as a supplement to this. One of Maunula's biggest successes through Nettimaunula has been further developing the area's strong community ties. This supports the literature which shows that increased neighbor ties lead to reduced crime and increased housing values – both of which have been said about Maunula (Kurki).

There are also some opportunities that came out of my interviews to take Maunula to the next level. One of the recommendations that came out of a meeting with Kimmo Kamppari was the creation of a physical community space targeted toward the younger

people in Maunula. This would be a way to leverage the area's growing tech saavy, while also serving as a recruiting feature for new residents to the neighborhood. Leadership development should be continued – fortunately there is a strong group of established neighborhood leaders who can help train the next generation of Maunula leadership.

From the Maunula case, there appear to be some specific circumstances in which ICT use and social networks spur public participation in planning. These circumstances, while unique, included having a small core group of people who built the initial momentum and kept it going at critical ventures. This group created content and began the interaction process. Then, pressing planning problems at short notice, such as the announcement that Maunula's bus service would be reduced or the lease on the shopping center would be renewed for another thirty years, these leaders jumped on an opportunity to use ICT to mobilize the community quickly. These examples show that ICT initiatives, or the surprise planning issues to which they are used to react, are not necessarily planned or static. A community needs to be ready to react to change, or ideally, approach opportunities for positive change from a proactive stance. The most critical lesson from Maunula is it is possible for a working class area to overcoming the "digital divide" through a combination of technology and people-based solutions – and use ICT as a tool in advocacy in the planning process.

Conclusions

Based on the existing literature and my analysis of Arabianranta and Maunula, I have shown that ICT initiatives alone do not automatically lead to greater involvement in the planning process. Instead it is the utilization of ICT in developing community social networks that leads to positive neighborhood benefits, including catalyzing a more effective voice in the planning process. Arabianranta and Maunula are different types of neighborhoods and they illustrate how different combinations of infrastructure,

hardware, software and social networks lead to different neighborhood involvement outcomes.

It is important for planners to understand this role that ICT can play in a neighborhood. Traditionally, most planning has involved a one-way flow of information from the planning agency to the citizens. However, the new participatory model necessitates a true two-way flow of information. While early planning websites simply posted plans for the citizens to read, as seen in Maunula, there are opportunities to create a transparent process with citizens actively involved in the plan-making through ICT. Thus, when planners are creating public participation plans, they should consider using existing neighborhood networks to give and get feedback – truly using ICT for its interactive potential.

Beyond this thesis, there are significant opportunities for study of Arabianranta, Maunula and the Finnish ICT model. While this thesis has demonstrated the relationship between ICT, social networks and public participation in planning, other research could involve further detailed analysis of both neighborhoods. Because both of these ICT initiatives are relatively new, there are chances to follow them and track their progress over time. Arabianranta should be studied to see how its ICT and social networks develop – and to see how these impact the planning process. Maunula should be studied to understand how citizen power builds and the ability of the neighborhood to keep ahead of technological innovation. Finally, outside of these neighborhoods, there is a chance to analyze the community implications of ICT initiatives in suburban and rural Finnish communities. Fortunately, it can be guaranteed that ICT will evolve and there will be other cases that can help us better understand the relationship between ICT and community development.

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