Understanding Citizens Needs

Can e – consultations meet citizen’s satisfaction in urban development plans?

Case Study: Providencia, Chile

Javier Carranza Torres,
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Abstract

Governance is defined in dictionaries\(^2\) as the system or manner of government. A recent trend has included this discussion in scholar circles of the (geo) information technology science. Government administrations, formal politics and citizens are increasingly using ICTs (information and communication technologies) to enhance the involved relationships inside the complex concept of governance. This refreshed concept has attracted the interest of local levels of governments, enriching the discussion of the role of technology in the making of the cities.

Municipalities of developing countries, take most of the urban spatial decisions at the higher level, taking for granted their inhabitants are satisfied by these decisions. The generalized usage of ICTs (Information and Communication Technologies) in urban communities, suggests that one the processes inside e-governance\(^3\), i.e. e – consultations, can be an effective manner of taking spatial planning decisions. ICTs can include more citizens when access is granted. ICTs can also match the needs, preferences and habits of the community when citizens participate. If access and participation are granted, then satisfaction of citizens needs should be straightforward.

In this research we will focus on analyzing a specific case of e-consultation considering its implications on citizen’s satisfaction when urban development plans are decided. First, we will review arguments that refer to the experiences and theory of the e-consultations. In order to link theory to practice, we will next model the e – consultation process in the light of the experience of Providencia, Chile, using the Actor Network Theory. Based on the same empirical base we will measure inclusion of citizens in the process, considering access and participation with ICTs in an index constructed with geo information tools. Finally, we will determine in selected administrative areas the degree of satisfaction that projects for urban development plans produces to citizens. Conclusions show that although citizens should be included further, they are generally satisfied with the formal outcome of the e-consultation. Policy makers should facilitate the development of methods of evaluation with accurate measures, such as indexes and standardized assessment tools.

Keywords: e – governance, e – consultations, online consultations, urban development plan, participation, Chile.

\(^3\) Literally defined as ICTs applied to the manner of government.
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Per
Il. Dio
Pater noster qui es in celis

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Montserrat; all the tears, all the laughs, all the muses, all the poems through your eyes
Nora & Ñato; the everlasting barbarian journey

I Dottori
Johan; the support, the respect, the challenge, the guide, the storm, the fifth column and my best professor ever
Yola; the determined passion and the warmest smile
Erik; the humblest attitude and the most insightful advices
Mike; the creative and constructive criticisms
Richard; oh, Richard!

I Cugini
Carlos; primus inter pares, including My Google!
John; the other side of the world with my last name…

Le Muse
Eva; the brilliant ebony
Saskia; the green and calm pond
Milli; my dreamt muse
Simone; the eternally flammable eyes
Ginella; Comm’on!
Janik; bewitched siren, all cherry and honey

Le persone belle
Marcela, Manuel and the kids
And …(…excuse me, I’m touched….besides, I’m no good with names…ah… ! Bekim, of course, well, you know…)
All the above; again

La poesia
What are we supposed to do
Through this stubborn research endeavor?
Of truths, of trusts, of me and you,
What do we know?
We know nothing but all we went together through!
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1. Introduction

Governance is defined in dictionaries\(^4\) as the system or manner of government. Moreover, governance can be seen from the point of view of information technology scholars (Gronlund, 2001) as the set of three fundamental relationships in the manner of government. In the IT scholars framework there are relations of formal politics to public administration, public administration to citizens and citizens to formal politics. ICTs (Information and Communication Technologies) are increasingly mediating these relationships, attempting to enhance them. If governance is mediated by processes based on ICTs, then we can visualize e – processes in an e – governance setting. In this research we will refer to e -processes as those used to mediate e -governance relationships. Some examples of them can be identified in Figure 1 below.

Figure 1-1: Processes in e - Governance

For the last 15 years, politicians, governments and also citizens have been using the internet and other electronic media to communicate, share, influence and express their ideas to each other. As a result, enhanced efficiency, improved communication and greater inclusion of citizens are claimed as the justifying reasons for this practice (Cook, M. et al. 2003). However, there is little evidence to state that the e – processes in which the referred parties are involved are working as an effective substitute to the traditional manners of government, i.e. traditional ways of governance.
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We are not interested in the economic side (improving efficiency, for instance) of the application of e – processes, neither on the political one (broadening participation, for example). Instead, we are interested in basically determining if a given e – process serves to the specific purpose for it was created. Moreover, it seems reasonable to try to prove if they are effective or not, before defining what is a more efficient e - process or one with a better participation. For effective we will understand that an e – process delivers the intended result for which it was created.

Zooming down to the core objective of this research we are particularly interested in those e - processes that relate the decisions taken in formal politics to the satisfaction of citizens. Many participative experiences mediated by electronic means are being implemented worldwide to strengthen the process of interaction between citizens and formal politics (Borge, R. 2004). Processes for e – participation can be considered as a special case of e – processes. According to the e - participation project database5 (RFO, 2002), a broad diversity of e – participation tools (also called democratic interventions by the project) are available: Blogging, e - consultation, e- engagement, e-mailing to law makers, e - petitions, e - referendums, e - voting, e- discussion and e- parliament. All these tools contribute to strengthen the relationship between citizens and formal politics. We will focus our attention on the specific process of e – consultations.

There is no unique definition for e - consultations. The nature of e - consultations differ according to the needs of the citizenry and to the level of government involved. Anyhow, this is an e - process that needs to define a problem, to deliberate about the problem and to choose a solution for the addressed problem. The present research is oriented to the local level of governments, especially municipalities, and basically to those problems addressed by urban development plans.

In a traditional urban development plan, formal politics take spatial decisions and actions. By general assumption, decisions are taken on behalf of the well being of the society. Paradoxically, they affect differently citizen’s interests and the interests of the society as a whole. For instance, when social or economic welfare decisions are taken, citizens are affected in different ways, depending on their income and other variables. One decision can benefit two individuals equally; benefit one on detriment of the other or simply not affect them at all. This problem has been largely studied in economics by Pareto (Pareto V., 1896) and others. However, few have considered the implications of affecting differently the interests of the society and the citizens individually. Formal decisions to solve problems in an urban development plan affect the satisfaction that citizens perceive regarding the space where they live.

Literature describing the use of e - consultations in cities is scarce but suggestive. There are well documented experiences in cities for developed countries. The literature cover various case studies from Eindhoven, Manchester and Amsterdam (van der Meer, A. and van Winden, W. 2003), urban development plans for the reconstruction of ground zero zone for New York (CivicAlliance, 2002), the Nordpol e -consultation in the County of North Jutland in Denmark and the pioneer Kalix online

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5 This project is part of the Hanse Passage, a Regional Framework Operation (RFO) within the EU community initiative, Interreg IIIIC.
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online policy exercise (Coleman, S. and Gøtze, J. 2001). The justifying argument to use these e-
consultations is that they invigorate democracy and revive interest in civic life (European
Commission, 2004). These experiences are indeed interesting and inspiring but not focused on the
problems of cities of the least developed world.

Nevertheless, the basic focus of this research is to study the satisfaction of citizens with the formal
outcome of urban development plans in Latin America. Unfortunately, literature studying involvement
of citizens in Latin America for development plans (Steinberg, F. 2006) does not consider the use of
ICTs for consultations. Furthermore, neither literature with lessons nor with case studies for e-
consultations focused on urban development plans in least developed countries are easily available.

Summarizing, in this research we will assume that when governance is mediated by electronic means
then the manner of government is e-governance. Considering e-governance a set of relationships, we
will focus in the relationship of citizens with formal politics. The strategy of this research is to first
study how e-consultations work and then to try to prove if they are effective to satisfy citizens with
their outcome. Inside the latter process we will study e-consultations theoretically and using an
empirical base. In brief, we will try to find out if e-consultations serve the purpose of creating a
satisfying final outcome for citizens in an urban development plan.

1.1. Motivation of the research

Experiences of local governments using e-processes in Latin America are becoming increasingly
popular (Esteves J., 2005). Most of them relate public administration to citizens. This is especially the
case for front end solutions, e.g. service websites, certificates issuing, tax payment information and
procurement notices portals, etc.). These experiences are mostly in an informational stage, i.e. most of
the experiences in cities are related and mostly devoted to inform citizens much more than working as
a manner of government. Few experiences in Latin America are in the interaction stage following the
Accenture6 service maturity definition (Accenture, 2002). More evolved stages permit the inclusion of
the citizen’s points of views.

The inclusion of all relevant actors is paramount for e-consultations for urban development plans. In
many developing countries, specially in Latin America, the institutional strengthening of local level
governments is especially related to land use planning (ordenamiento territorial, in spanish) and
spatial planning issues. For this reason spatial planning decisions require the involvement of all local
parties. This is partly because local governments need to assure that decisions would not be taken
back overtime. It is also due to the complexities of local level decisions (de Man, 2006). This
motivates local governments to seek involvement from citizens as, particularly at the local level,
citizens have commitment to and knowledge of their place and space (Scott, J. 2006).

6 Service Maturity measures the level to which a government has developed an online presence.
One typical concern of the local level of governments are NIMBY issues. If a certain decision over space is undertaken, there is a vital need that it matches the interests of all (or at least most) of the affected parties. Otherwise it will be opposed and finally rejected overtime, becoming obviously futile. Thus, the use of e-consultations are intended to outreach all parties so as to meet their needs and preferences regarding spatial decisions.

The referred e-consultations play an important role to assure public consent so as to meet needs and preferences from citizens. Public consent on urban spatial decisions can also be seen as the equilibrium of the urban demands and the supply of solutions from the planning authority. If there is no difference between the needs of people and the decisions taken so as to solve them in a certain urban setting then citizens are fully satisfied with the decisions.

Additionally, motivations for this research also have a demographic nature. New patterns of urbanization are arising specially in Latin America due to a growingly migrating, diversifying and demanding population (Jordan, R. 2003). Therefore, claims from a growingly organized civil society to be recognized and included (Khosla R. et al., 2005) are arising. This new demographic scenario raises again the question of how to deal with inclusion in the urban context. This demands an improved administration of the urban problems for a more involved population.

The above motivations can be studied in the light of a case study of an e-consultation that combines a development plan done in interaction with citizens, considering inclusion to ICTs, the need to cope with the interests of all parties and a migrating population in Latin America. The recent experience of Providencia for the urban development plan emerges as suitable. The objective of the e-consultation was to involve citizens in the selection of projects for the urban development plan. This plan is aimed for the citizens own well being and that of the unidad vecinal where they lived. Citizens could vote via internet from their homes or other specially equipped locations over a certain range of urban development projects. The projects considered general issues such as security, access to culture and the use of public spaces.

1.2. Justification of the case study.

The chosen case study takes place in Providencia Municipality, located in the central east area of the Metropolitan Region of Santiago in Chile. The so called “Providencia Participa” project is an input to design the communal development plan (CDP in english, PLADECO in spanish). The communal development plan is the main instrument for urban development in Providencia.

The purpose of the CDP is “to promote initiatives and execute projects intended for the social, economic and cultural development of the inhabitant’s of the commune” (National Interior Ministry

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7 NIMBY (an acronym for Not In My Back Yard). It is referred to the phenomenon in which residents oppose a development as being inappropriate for their local area but, by implication, do not have a consistent opposition to such developments elsewhere.
Law 18695 and PES – 006). It is a planning tool composed by a set of specific projects that include street lights, surveillance cameras, playgrounds, cycling paths, street security, cultural cafes, etc.

In order to make sure that these decisions are rational and consistent, CDP projects are supposed to be contrasted with other (Geo) Information Management systems. These are the Regulatory Plan (plano regulador), Quality Service and Environment and the Communal Strategic Projects and the Communal budget administered by the local authority.

A more vital need of rationality and consistency is implied in the original objective of the CDP. Simple rationality of development imposes that these projects meet needs and preferences of the citizens, satisfying them. For this purpose it is a mandate and also a normal practice that, not only in Providencia but also in other Communes in Chile, CDP projects are implemented after public consultations. The results of an e – consultation can match the needs and preferences of the citizens, given a proper ICTs infrastructure for the city. As access to ICTs and participation with ICTs are assured, the formal decisions of the CDP will be rational and consistent with citizen’s needs and preferences.

There are several reasons to choose this case study. At a general level, the central reason of the selection is that this is practically one of the first experiences in Latin America for e - consultation that allows people to vote from their homes, at the same time involving citizens in the urban development plan.

At a more specific level, four reasons are considered. In first place, this is a recent; state – of the art e -consultation experience done in Latin America from which we can raise lessons for other similar cities. In second place we chose this case because Chile has only started recently a tradition of decentralized practices for lower levels applying modernization of the state policies. This is particularly interesting as a unique characteristic of the Chilean modernization processes at the national government are leading cases for Latin America but has no yet offered any lessons for local levels. Chile’s tradition on modernization can help to build leading cases for local levels of government too.

A third reason of interest is that Chile stands as a really prepared country for ICTs. Nevertheless, ICTs don’t seem to be used for participatory purposes but instead mostly used for services provided by the national government, such as tax payments (www.sii.cl), or public procurement (www.chilecompras.cl ) and other e – processes relating public administration to citizens. According to Esteves (Esteves, J 2005), Argentina, Chile and Venezuela are evaluated as the countries with the less participation e services at the sub national levels. The fact that citizens are involved in an e -process relating formal politics to citizens, show a uniqueness from other experiences.

Finally, a fourth reason of interest is that the number of voters has decreased since the last consultation (without ICTs usage) was done in the chosen case study. When analyzing the figures of voting citizens in the e consultation, participation evidences a decrease of 56 %. The study of ICTs inclusion topics in the e – consultation can explain this surprising result.
1.2.1. **Background description of the case study**

The first communal consultation done in Providencia was carried out at the end of April of 1997. Citizens had to select projects in their own administrative area or “unidad vecinal” that they would like to be executed by the commune over a certain variety of choices. In that consultation 35,658 people voted, the results of this consultation guided the implementation of the CDP and the communal investments from 1997 to 2005.

In June of 2006 the consultation was implemented with information and communication technologies. In this consultation 15,629 citizens voted in 16 unidades vecinales, i.e. administrative areas of the municipality. A company related to a private local broadcast channel from the Catholic University of Chile was hired to process the data to ensure transparency in the digital voting. The interested citizens could reveal their preferences from their homes, places of work (via Internet). They could also go to the voting internet enabled premises internet access and also with classic ballot boxes.

The voting places were located in municipal facilities in each unidad vecinal. According to the place where they lived, citizens could choose out of 10 proposed projects. That totalized 160 projects in the whole municipality.

The final results of this voting process led to the prioritization of the 10 projects formulated and published in the e – consultation. For a spatial reference of the voting unidades vecinales, please see below Figure 1.2

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**Figure 1-2: Study area**

- Adm. Area: 14 Km2
- Pop: 120,874 (census 2002)
- Human Dev Index: 0.904 (PNUD-MIDEPLAN 2000)
- Quality of Life Ranking: 1 (ranking Seremi plan)
- Social Priority Index: -12.45 50 / 52 (social development compound index)
1.3. Research Problem

The traditional manner of government for urban development plans assumes that citizens are satisfied by the decisions taken. Due to many reasons, at the present there is a vital need that urban spatial plans consider the interests of all (or at least most) of the parties affected by these decisions.

The generalized usage of ICTs in urban areas, proposes e-consultations as a manner of making spatial planning decisions claiming that they bring a greater involvement of citizens. It is assumed that ICTs allow a broader inclusion of citizens when access is granted. It is also assumed that ICTs can match the needs and preferences of citizens when participation is granted. Summarizing, if citizens have access and participate through ICTs, the outcome of a CDP should show transparently their needs and preferences.

The research problem is that there is no evidence that e-consultations actually work for urban development plans. We will try to test this problem using methodologies and analysis to know if people are satisfied with the formal outcome of a given e-consultation. In this regard, we are assuming that satisfied citizens are the final purpose of the process.

1.4. Research Objectives and Questions

1.4.1. Research Objective

The main objective of this research is to know if e-consultations satisfy citizens needs and preferences.

1.4.2. Research Sub Objectives

- To analyze the fundamentals of e-consultations, with especial emphasis in the experience of Providencia.

- To measure quantitatively the level of inclusion of the citizens in ICTs in the communal development plan.

- To compare the formal outcomes of the e-consultation with the needs and preferences of citizens expressed in other forums such as workshops or street opinion polls.

- To provide recommendations about the implications of the use of e-consultations to assure citizens satisfaction. This is especially important to advice in the implementation of other communal development plans or other urban development plans in general.
1.4.3. Research questions

Table 1.1 formulates the research questions referring them to the data sources and data collection tools needed to answer them. This is done so as to detail the contents of each chapter and also to show the research structure in figure 1.5.

<table>
<thead>
<tr>
<th>Research question</th>
<th>Data Source</th>
<th>Survey or data acquisition tools</th>
<th>Chapter of reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Which are the main characteristics and how do e – consultations work, especially in the Providencia experience?</td>
<td>Primary and Secondary data</td>
<td>Literature review, officers interviews</td>
<td>One, two and three.</td>
</tr>
<tr>
<td>2. How to model the relationships of actors in the communal development plan?</td>
<td>Secondary data</td>
<td>Literature review, Model theory of ANT to CDP case study</td>
<td>Three</td>
</tr>
<tr>
<td>3. Which are the most important issues considered by the actors of the communal development plan?</td>
<td>Primary data</td>
<td>RUA, interviews to officers, interviews to presidents of the juntas, street survey</td>
<td>Four and Five</td>
</tr>
<tr>
<td>4. How can we know the level of inclusion of citizens in the use of ICTs?</td>
<td>Secondary data</td>
<td>Pivot census vs cadaster data, Geo DB, index design and calculation</td>
<td>Four and Five</td>
</tr>
<tr>
<td>5. How can we know if citizens are satisfied with the voted projects?</td>
<td>Primary data</td>
<td>interviews to presidents of the juntas, street survey</td>
<td>Five and Six</td>
</tr>
</tbody>
</table>

The answer to the above questions is complex. This shouldn’t be disturbing as the very nature of technology is complex and it is intended to deal with complex problems. There is a direct link between the complexity of decisions at lower levels of government (De Man, E. 2006), and the complexity of problems that technology has to deal with. In the context of a growing integration of ICTs, they seem anyway to be good instruments to solve urban problems.

However, a general answer to the research questions is that although inclusion in e – consultations needs to be stimulated, citizens are in general satisfied with the formal outcome of the CDP. Nevertheless, many initiatives form citizens are left out, discriminating the needs and preferences of minority groups. The richness of bottom up approaches to understand citizen’s needs and preferences
can help to motivate inclusion and formulate projects for urban development. Experiences of e-consultations are quite recent and only leading cases for other cities can be used for lessons. Policy makers should facilitate the development of methods of evaluation with accurate measures, such as indexes and standardized assessment tools.

1.5. Methodology

Several methodologies will be used in order to deal with the research objective. First, the research will conduct a profound literature review in order to analyze e-consultation in general and in particular. This method will be useful to draw conclusions about how the process was done, who participated in it and for what purpose. Second, a secondary data collection will be organized so as to measure levels of inclusion in the actual case study. Third, a primary data collection tool will be designed and administered to citizens in order to recognize the degree of satisfaction of the formal outcome of the process.

1.6. Research process

In order to organize the research process Figure 1.3 shows the structure of this thesis work. The opening chapter introduces to the topic of e-consultation, explaining the complex relationships inside e-governance. After this, the second chapter will discuss about the key issues found in the literature review. Literature review is needed so as to have an insight to the main topics of e-consultations and to compare the findings of other cases with the findings of this research. The third chapter will use the actor network theory to model the relationships of actors in the CDP. Chapter four will describe the set of methodologies used to collect data from primary and secondary sources and measure inclusion and needs and preferences of citizens in the area where they live. Findings of the measurements will be explained in Chapter five. Finally, chapter 6 will conclude about the findings and will try to drive lessons to other CDP in Chile or other urban development plans in Latin America.

8 Also called research design by Rajit Kumar (2005)
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Figure 1-3 Research structure by chapters

Research structure by chapters

Ch. 1
• Introduce topic
• Explain problem
• Formulate research

Objectives, sub objectives and questions

Ch. 2
Theoretical framework
Present discussion on e-consultations

Ch. 3
Modeling of Relationships in CDP

Ch. 4
Methodology
Define and explain method to calculate
• Index of inclusion
• in ICTs
• Measure of the satisfaction of citizens with CDP

Ch. 5
Processing of data
• Identify patterns
• Describe inclusion
• Find out if Citizens are satisfied With CDP outcome
• Give results

Ch. 6
Conclusion
• Answer research questions
• Drive lessons

Ch. 1 Ch. 2 Ch. 3
Ch. 4 Ch. 5 Ch. 6
2. Literature Review

2.1. Introduction

The topic of e-consultations is in its infancy (Dialogue by Design, 2003). It has been studied by several authors, basically studying e-participation or e-democracy issues. Theoretical abstractions or extrapolations of current political or technological trends lead the debate. Empirical studies are limited, reporting on pilot projects, case studies or surveys.

The basic idea behind the literature is that e-consultations are healthy for participation, although the outcome depends on the external environment where they are organized in. In this literature review we will refer to authors from different backgrounds due to two basic reasons i) This is a quite recent trend applied in policy making ii) The complex nature of the topic, i.e. socio-technical, needs the integration of knowledge from diverse disciplines. We will also try to focus our review in studies describing e-consultation experiences in sub national governmental, mainly municipal levels. When available we will describe experiences similar to our case study, i.e. e-consultations for urban development plans in Latin America.

The structure of this chapter aims to answer research question number 1. We will first focus, based on available definitions, in what we understand by the concept of e-consultation. Next, we will use an adapted framework for analyzing e-consultations, in order to organize the reviewed literature. Once highlighted the topics of interest for our research within the framework, we will refer to authors and case studies that partly answered the questions of

- How are e-consultations done?
- Who, what technology is used and to what extend should citizens participate in e-consultations?
- What are e-consultations done for?

Finally, we will conclude about the mainstreams of the literature. This is needed to relate our research focus to the findings of the literature.

2.2. Definitions of e-consultations

The concept of e-consultation is a relatively new one and therefore few definitions are found in the literature. All the reviewed authors define only consultation as a broad concept. As this is a review of e-consultation, we will understand that the adding of the “e-” implies the use of electronic means applied to the process described in the definition.
A London-based research institute, the Consultation Institute, defines public consultation as; “...the dynamic process of dialogue between individuals or groups, based on a genuine exchange of views, and normally with the objective of influencing decisions, policies or programs of action.” (Consultation Institute, the 2004).

The definition offered above gives a broad overview of what public consultation is. For our purposes, it is much too general as it does not specifically identify the individuals or groups involved in the process. It also does not establish what do “views” is understood for. A much more specific definition of consultation is constructed by Ann Macintosh (2002), from the International Teledemocracy Centre in Napier University. She defines it as “…a two-way relationship in which citizens provide feedback to government”. It is based on the understanding that information is exchanged by parties in a one-way relationship. In the view of this author, governments define the issues for consultation, set the questions and manage the process, while citizens are invited to contribute their views and opinions.

Macintosh’s definition is more useful for the purposes of our research. However, it is necessary to determine what is understood with “government”. Considering our research focus, governments consult people with a political purpose, i.e. to know if they are doing right or wrong according to what citizens need. Thus, a differentiation of the government’s roles inside the terminology should be pointed out. We will differentiate between formal politics and public administration. Simply stated, governmental institutions can at the same time conduct formal politics and administer public services and goods. Following the already defined e – governance concept, we will understand that an e – consultations is one specific process of e – participation that mediates the relationship between formal politics and citizens for the purpose of policy making.

2.3. Key issues in e – consultations

Macintosh, A. (2004) offers a comprehensive framework for characterizing e – participation. Since we defined e – consultations as one sub-type of e – participation processes, we can adapt the framework conveniently. According to this author, 10 dimensions constitute the core of what matters in the process of e – participation. The broad range of issues that e – consultations involve deserves the effort to consider these questions selectively for a more focused analysis. We will limit our review specifically to the “How?” the “Who?”, and the “What for?” questions derived from the dimensions, adapting the framework for the benefit of this research. The adapted dimensions and are explained in table 2.1 below. We will review the ideas that practitioners and scholars essayed guided by selected key issues.

We are interested in dimension 4 to answer the question of “How e – consultations are done?”. To answer the question of “Who, what technology is used and to what extend should citizens participate in e – consultations?” We are especially interested in dimensions 1, 3 and 7. Finally, when trying to answer to the question of “What are e – consultations done for?”, we will focus on dimension 9.
Table 2.1 Adapted dimensions for e-consultations

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Level of participation</td>
<td>What level of representation, or how far to include citizens?</td>
</tr>
<tr>
<td>2 Purpose of the decision making</td>
<td>What is to be consulted to citizens?</td>
</tr>
<tr>
<td>3 Actors</td>
<td>Who should be included and by whom?</td>
</tr>
<tr>
<td>4 Methods used</td>
<td>What methods are used to consult citizens?</td>
</tr>
<tr>
<td>5 Duration and sustainability</td>
<td>How long the e-consultation takes place and with which periodicity?</td>
</tr>
<tr>
<td>6 Rules of engagement</td>
<td>What personal information will be needed / collected?</td>
</tr>
<tr>
<td>7 Accessibility to technology</td>
<td>What technology issued to consult citizens?</td>
</tr>
<tr>
<td>8 Resources and Promotion</td>
<td>How much did it cost and how widely was it advertised?</td>
</tr>
<tr>
<td>9 Effect and Outcomes</td>
<td>What results and how accurate to the purpose?</td>
</tr>
<tr>
<td>10 Critical factors for success</td>
<td>What other political, legal, cultural, economic, technological issues should be considered?</td>
</tr>
</tbody>
</table>


The reason of only reviewing over these dimensions is related to the research objectives. As our purpose is to know if e-consultations satisfy citizens (who) needs and preferences (what for) effectively (how), these dimensions are crucial for the approach to the case study.
2.4. **How e - consultations are done?**

In practice, e -consultation experiences vary widely in their implementation. The methods involved are electronic versions of traditional research methods, such as surveys typically designed to extract attitudinal, behavioural and demographic information. Other innovative methods include telephone surveys, chat and on line with specific policy makers, forums with other citizens and web advertisements.

A main feature that arises from different experiences of e - consultations is that scholars and technology consultancy firms intermediate in the relationship between formal politics and citizens. Practitioners develop specific software and e – participation tools to mediate this process according to each case. These tools consist normally of automated methods of engaging, monitoring, mediating and analyzing discussions between formal politics and citizens. Whyte and Macintosh (2002) from Napier University conducted an electronic consultation with Scottish youth at the request of the Scottish regional authority. OECD (2003) highlights the value of the experience of a Swedish city, Kalix. A consultancy company, Votia, aided the local government carrying out two annual e – consultations on urban development issues in September 2000 and October 2001. Citizens were informed mostly via the internet, although traditional meetings to inform together with press releases and advertisements were provided to citizens.

Among the reasons that sustain the trend of intermediation we can mention, first, those related to the outsourcing of IT projects in local governments and, second, the organizational change claimed for rationalizing the structure of the state (Gronlund, 2001). A third reason is the increasing role of the so called “third sector”. This is related to the diminishing credibility of the party politics in western democracies and the consequential increase of reliability in other organizations, such as academia and NGO’s (Kendall, J. and Knapp, M. 2000). A fourth reason is the decline of engagement in politics (Busier, M. et al. 2003).

The rationale behind these reasons is that in a traditional consultation setting, governments of all levels are suspected to influence the outcome. The intermediation of neutral actors with effective technologies helps to make the outcome more transparent. The argument goes that the level of interest in local issues increases when facilitated by technologies such as the internet and mobile telephony. Thus, ICTs can reinvigorate democracy and revive interest in civic life (European Commission, 2004). This is specially the case when ICT enable to raise the turnout of voters.

The experience of Nordpol, Denmark, illustrates the above mentioned reasons. It portrays the important role of external organizations in e – consultations and educates about how other creative techniques helps to increase engagement of citizens.

In 1997, North Jutland experienced the lowest voter turnout in the Danish election. The County decided to open to debate the decisions made on a regional political level, and to involve the citizens in the process.
KMD, a large Danish IT consultant, designed in close cooperation with the County a web site (www.nordpol.dk) structured as a forum for debates. The design was based on the findings of focus groups designed by the firm. Focus groups were formed of politicians, elder citizens and first-time voters, aiming to include the views of the latter. This resulted on a friendlier image of the final output, which would not put off young people. Numbers show that the website had 23,000 visitors and 440 contributions to the debate. The debates, chatting and visits to the politicians’ profiles increased the website traffic.

In these case studies, the intermediary role of the third sector is valuable due to the use of pragmatic, bureaucracy-free techniques, applying knowledge from other disciplines, especially social sciences.

2.5. Who, what technology are used to and to what extend should citizens participate in e-consultations?

2.5.1. Who participates?

The basic idea behind the concept of participation is “being a part of” or “constituting a part of”. If we ask who should participate, we are referring to the actors of the process, basically formal policy makers and citizens, according to our research. Seen in this way, the very meaning of participation is to keep the parties of a community deciding about their reality. Unfortunately, in some empirical cases, citizens are considered not a living part of a community but no more than an input to a project.

According to Macinstosh (2004), it is necessary to identify clearly all stakeholders involved and the target audience. Stakeholders, in general terms, are decision-makers, leading practitioners and experts. The socio-technical nature of e-participation, the argument goes, needs a multi-disciplinary supporting team. For the author, it is important to define who “owns” the results and who has responsibility for communicating their impact on decisions. About the citizens, she refers to them as “target audience”, mentioning the need to be specific about features such as the geographical areas, interests in contents and technical skills.

Coleman and Gøtze (2001), referring to e-democracy, do not define who should participate. Instead, they inquire about the incentives that people have to participate. Their work inquires about their objectives and their need of skills and information in order to participate. They conclude about the need that governments acquire a friendly language, clear standards for citizen’s rights and reasonable clarification of expectations to the citizenry. In exchange they request from the citizenry deliberative skills and acceptance of civic responsibilities.

The e-consultation research project (http://e-consultation.org) offers a guide to practitioners in e-consultations to answer the question of who participates. This is an on-going project developed by Queen's University Belfast, the University of Maynooth and Limerick IT to study electronic consultation exercises and report lessons. Their answers to the “who?” covers mostly
technical and operative issues such as the recruitment of participants, the publicity of the e – consultation, access to technologies and the follow up. They postulate that the “first wave” of recruitment should be done with press and web site advertisements and if more participation is needed in a given e – consultation, a “second wave” with more direct methods (snail mail, e-mails, telephone, etc.) should be used.

To conclude, the reviewed insights are valuable but incomplete. As some authors classify the parties of an e – consultation, others consider the incentives that one of the parts (citizens) has to participate. Others seem to consider participants from a marketing perspective, i.e. as an input for information. There is a gap in the literature modeling the relationship of both parties and their interests.

2.5.2. What technology is used to participate?

Although there are a variety of tools used in e – consultations, the main one is the internet. Hilbert, M. (2003) raises this point, referring to local e – government case studies in Latin America, as “the digital city iceberg”. Although the base of the iceberg is composed by many electronic processes, the top of the iceberg is the internet. Thus, in this section we will review the insights of some authors about the value that internet has to include citizens to participate.

Research findings from Katz, Rice, and Aspden (2001) suggest that internet users interact more time with their peers. On the other hand, education relates little to participation using internet (Putnam, R. 2000). Studies of the social impacts of the internet find that when considering people with higher education levels, internet users are not so different from those that don’t use it regarding their civil involvement. Castells (2002) claims that the internet can establish and maintain the so called “weak” ties needed to sustain civic engagement.

Nevertheless, the use of internet to get involved is questioned. Mediating politics with ICTs is “ politics as usual” according to Margolis and Resnick (2000). Their argument is that internet is a new medium to maintain the status quo of the political parties or corporations whenever they impose internet usage. Wilhelm (2000) warns that although access to the internet is increasing, the online political debates are neither inclusive nor deliberative. Chadwick and May (2003) analyze e-governance experiences in the United States and Europe and observe that they have done more for project management than for public participation in debates.

The debate over the use of internet to participate exceeds the objective of this research. Nevertheless, a responsible use of internet to make effective e – consultations is a plausible argument to balance the referred points of views. Internet and ICTs in general are means for an end. Therefore, citizens and politicians are free to use them according to their needs. It is not clear neither from the literature nor the evidence how one party can influence the other in the use of internet.
2.5.3. To what extend should people participate?

The answer to the “who?” question includes answering to which extent participation should be. This means not only which are the population profiles to include in an e-consultation but also which system of democracy the process will adopt. Scott, J. (2006) differentiates three theories: representative, pluralist and direct. Although in an e-consultation the choice depends of the political context of the local community, a broader inclusion is implied the more directly involved in policy debates, decisions and actions actors are. However, the more directly the involved citizens are the more complexities a technology needs to deal with. A cautionary argument is raised by Whyte and Macintosh (2001) when discussing about the need for greater user involvement in e-consultations. For these authors, this is necessary ingredient, but not a sufficient condition of unanimously approved outcomes. Quoting Curtin (2001), they advise that citizen opinions should be previously organized in an institutional setting so as to allow them to bring their own issues to debate. Otherwise consultations in general are in the risk of being reduced to technical tools useful to strengthen bureaucracy.

On the other hand, Heeks (2005); when analyzing participative approaches in the design of information systems (IS)\(^9\), discusses about the role and value of participation in these projects. He points out that these projects aim to deliver development goals and they have frequently involved participation. He argues that participation fails in such projects because it ignores context; reality and other factors. He poses three critical questions that need to be answered before considering participation.

Firstly, inquiring about the political and cultural context he states that ICT development projects determine the technological outcomes more than the particular participative approach or other used techniques. He proposes that a previous analysis of political and cultural nature is of greater value than the details of participative or technical analysis techniques. Secondly, asking about the reasons and actors that want to introduce participation, he adverts that they may be motivated by the incentive of alleviating their own responsibilities or by demagogical ideas. Thirdly, he asks from whom participation should come from; trying to answer if the supposedly interested parties can actually participate. He inquires about the motivations and resources of potential participants so as to assure success. Finally, he concludes that operational constraints and inherent problems of participations should be carefully studied beforehand introducing participation in any development project.

Finally, thinkers that promote the use of e-democracy, such as Rheingold (2000) and Clift (2004), argue that to involve citizens the capacity to adopt ICTs should be stimulated. In this way politics will also be legitimated. Regarding the relationship of citizens and politicians of an e-

\(^9\) An e-consultation can also be understood as an information system that involves the exchange of information from politicians (proposals and projects) to citizens (validations and rejections).
consultation, it implies that both parties are compromised to embrace technology as an intermediate actor.

Literature intended to determine the extent of participation vary according to what is chosen as a democratic system, institutional settings, political context and attitudes towards the adoption of ICTs. This is much of a socio–technical issue that needs a comprehensive approach to be consented among parties.

2.6. What are e–consultations done for?

The answer to this question depends on who is asked. Parties involved in the process of e–consultation have different objectives to maximize their interest. Considering formal politics, there is well documented literature (The Consultation Institute, 2004, e-consultation research project and Macintosh, 2004) that is basically referred to the economic benefits and costs of an e–consultation. Guides and handbooks refer to different benefits of e–consultations such as; increasing the turnout, enhancing media and the message and improving the speed of response. Regarding the costs, they analyze the costs of access to technology, the costs of the e–consultation diffusion and the cost of hiring an expert crew.

In this section we are especially interested in the effects that e–consultations have on citizens. Bekkers, Homburg and Smeekes (2002) openly ask if the goals of a citizen-oriented government have any general effects. According to them, the effects are limited to the specific environment in which ICTs are introduced. They offer the case of Dutch public administration, where politicians chat with citizens about a wide range of topics, although these outcomes have no more power than merely being considered as public opinion polls.

It is important for citizens to perceive that their needs were considered in an e–consultation. This will determine their satisfaction. If citizens perceive that the process is neutral for their needs, their satisfaction is unmet. After a reviewing literature referred to economic benefits for citizens we will quote authors that refer to expectations

The e-consultation research project (http://e-consultation.org ) recognizes as benefits for the citizens the protection of privacy, the saving of time to debate, the easiness of collecting information and getting feedback more easily than in traditional consultation mechanisms. Scott, J (2006) agrees in his conclusions that web sites reduce the cost of information for citizens.

Regarding expectations, referencing the case of Nordpol; Coleman and Gøtze (2001)conclude that the citizens wanted i) to set the dialogue between citizens and politicians as the central element of the e - consultation ii) to stress the need of “getting to know the politicians” and iii) to be involved in the planning process in the regional level. The authors understand that the reason for participation indicated by amount of visits to the website is partly explained by the extensive involvement of the actors, particularly politicians running for the county council. The remaining of the explanation lies on the vast availability of information and the inclusive selection of participants.
The e-consultation research project (http://e-consultation.org) quotes a paradigmatic complaint from a focus group discussant in their guide:…” So you know, fair enough that’s grand, three years later there hasn’t been an inch of change (arising from) any of that consultation, and you might say “Well, there is budgetary considerations, or time or politics or whatever” but the simple fact is there are repercussions from that consultation that I see on a weekly or monthly basis … particularly in community workers and that’s where the cynicism is. We busted a gut! What for? It was a political move, they consulted us for political … political reasons!!…”. This describes in a direct way how can citizens react after e-consultations with dissatisfaction. To avoid this discontent, the guide proposes to i) make available clear and relevant information on the issue being consulted; ii). State clearly the relevance of the e-consultation; iii) A clear statement of what effect the consultation submissions will have on final outcomes and iv) To offer timely feedback on the consultation.

To conclude, e-consultations can rapidly fail to satisfy citizens. A virtuous circle of more involvement – hearing to people - more effect can be distinguished. The more citizens feel their needs and preferences are taken into account, the more involved in the process they get, and the more effective the process. Whatever the desired effects by formal politics, the e-consultation should include not only considering citizen’s satisfaction but also accountability to assure that the process is effective. One step forward can be to model the relationship and the incentives of all involved parties, citizens and formal politics, to find equilibrium. In order to assure the feasibility of e-consultations, mutually beneficial agreements are needed to involve the parties. Otherwise, e-consultations can be used as cathartic tools with no impact in the actual formal outcome of any policy (Macintosh, A. 2002).

2.7. Conclusions

In this literature review we arrived to the concept that e-consultations are a subset of processes inside e-governance. In our view, e-consultations relates formal politics and citizens for the purpose of policy making. Using an adapted framework, we focused in answering with the available literature how the process is done, who participates in it and for what end. We explained that e-consultations are processes mediated by third parties. We also found that there are good reasons to believe that the proper use of internet and a responsive participation from citizens can make work e-consultations. For a better understanding of the process, we propose to model the citizen – formal politics relationship considering the incentives of all actors.

In the overall vision of this literature review we conclude that scholars do not agree about the scope of the environment and political context in which a given e-consultation project works in. It is clear that intermediation from outside actors, such as technicians, techniques or ICTs; is valuable. It is not clear, for the extent of this research, what is understood by “political context” or “environment” in e-consultations. Finally, access and participation seem to be necessary conditions for effective e-consultations. If incentives of all parties are taken into account in the design of an e-consultations, this should constitute a sufficient condition for being effective.
Many of the topics that have to do with scholars disagreements are related to social sciences in general and public administration sciences in particular. These are the culture, bureaucracy incentive schemes, and the appropriation of technology from the different parties. Nevertheless, none of the above concepts are defined sharply in the literature to facilitate the design of practical solutions. The integration of sciences, such as those related to ICTs, those that deal with public administration and those that deal with society emerge as a tractable answer to the fuzziness of the debate.
3. Modeling the relationships inside an e–consultation.

3.1. Introduction

"One only understands the things that one tames,” said the fox.

"Men have no more time to understand anything. They buy things all ready made at the shops. But there is no shop anywhere where one can buy friendship, and so men have no friends any more. If you want a friend, tame me..."

"What must I do, to tame you? asked the little prince.

"You must be very patient," replied the fox. First you will sit down at a little distance from me -like that - in the grass. I shall look at you out of the corner of my eye, and you will say nothing. Words are the source of misunderstandings. But you will sit a little closer to me, every day..." (Antoine de Saint Exupéry, 1943)

The little prince is an adult tale. It basically describes the endeavor of life for an adult that has a perception of reality as if he were a child. After several deceptive lessons, he is at first apprehensive in addressing a new character in the tale, the fox. He says he does not have much time and that he is looking for friends. The fox says that if the prince wants a friend, he will have to tame him. The prince asks how such a thing is done, and the fox leads him through the ritual. The key is in understanding the interest of both sides. He explains that rituals are important because they allow focusing in one topic.

The above story can be read as an inspiring situation to model the relationships involved in an e–consultation process. Here, there are two different parties with different incentives, one for formal politics (metaphorically the “Little Princess”) and the other for the citizens (the fox). For one side, the fox is collaborative. He wants to get closer, but still needs that his interests are taken into account. The “getting closer” process has a rationale: the fox needs to be satisfied from the relationship; his interests have to be considered. Otherwise, he will never get closer. Finally, he admits that this process needs to be regular and it can take time and resources.

The structure of this chapter is composed by a detailed description of the stages of the case study. Once done some general considerations of the case study, the Actor Network Theory (ANT) is explained. Finally, once determined the scope of our study, we will apply the concepts from the reviewed ANT to the “Providencia Participa” project. The analysis of the project with this socio technical approach is meant to get i) gain insight to the research problem ii) to model actors and their relationships iii) to answer research question number 1 and 2.
3.2. The “Providencia Participa” project

The “Providencia Participa” project was conducted in the municipality of Providencia in almost 8 months from December 2005 to mid July 2006. Providencia municipality is populated by 120874 inhabitants, almost 13% of the citizens voted. The topic of the e-consultation was the Communal Development Plan. The project was designed and implemented during approximately 7 months, starting in December 2006 and ending in June 2006. The project budget was 120.000 U$$.

Citizens where consulted about three issues. Voters were asked for their choices about general communal projects and projects for the unidad vecinal where they lived. The third issue requested citizens to evaluate the quality of services delivered by the municipality. We will narrow our research to focus on the choice of projects in unidades vecinales, mostly local development projects.

3.2.1. Stages of the project

The project was designed, implemented and followed up in 5 stages. The criteria to identify the stages were extrapolated from case studies and literature review. The different stages are described below.

- Surveying projects for the e-consultation

This stage was completed in almost 5 months. In this first stage, the municipality surveyed the specific needs of the 16 administrative areas or unidades vecinales located within the boundaries of the municipality. The municipal website, (http://www.providencia.cl), documented the process. Citizens in general and presidents of the juntas vecinales (authorities of the administrative areas) were invited to formulate projects based on local needs during a certain period. Once all prospective projects were collected they were submitted for economic evaluation. A total amount of 300 projects was submitted with this procedure. Additionally, the municipality included in the evaluation about one thousand projects from the “Bank of Projects”, i.e. projects based on complaints of citizens. Hence, in principle a special committee appointed by the municipality evaluated around 1300 projects with economic and technical criteria. After the evaluation, only feasible projects remained. The 16 presidents of the unidades vecinales were asked to select 5 projects that best suited the needs of their area. These projects were completed with 5 other projects proposed by the municipality. This was done in order to consult citizenry about 10 alternatives in each unidad vecinal.
• Advertising the e – consultation

This stage began in mid April and lasted two months approximately, until the actual voting. The general strategy was to design a public image for the e – consultation with a friendly image of digital media to involve citizens. The promotion included the design of a website to inform citizenry, a general emailing campaign to 7000 citizens, posters in bus stops, a special issue in a local newsletter for neighbors, leaflets and other printed media. At the end of this stage, when the e – consultation was implemented, the municipality organized a strong media campaign including TV, radio and national press to remind citizens. The municipality press department conducted this stage.

• Designing the e – consultation

The design was prepared almost simultaneously with the previous stage. It began on mid April and ended with the testing of the systems on the 10 th of June. A private company related to the Universidad Catolica de Chile, “Medios Australes”, designed 5 modules of functionalities. This included information, registration, voting, help and result modules. These modules were designed i) to explain the choices of the available projects to vote, ii) to register citizens in an electoral database, iii) to verify, capture and collect votes, iv) to guide citizens in the process of voting and v) to process the final results. The modules were designed basically by website developers with the assistance of the ICT department of the municipality.

• Implementing the e – consultation

The implementation was done following several steps. First, starting in mid May citizens had to register as voters. With the national identity number as a primary key (RUN), the municipality checked the residence of voters with a database prepared with processed data from the electoral registry, driving licenses registry, plates and permits registries. The system also allowed non residents working in Providencia to register, asking them their personal data based on the national identity number. The second step was to train almost 200 assistants to aid voting citizens in 26 facilities (among others, schools, elder centers, libraries, etc.) distributed in the 16 unidades vecinales. In these facilities the organization of the e – consultation provided internet access and also traditional ballot votes. Finally, the third step, the actual poll, took place from the June 17 th to 20 th 2006. The web site was enabled for voters to vote form their homes and also from municipal facilities. To allow participation of every kind of voter in municipal facilities, weekend days were intended for residents and week days for non residents. For each unidad vecinal, citizens could vote 3 out 10 projects available in the website menu. A total number of 15,789 citizens voted and 88% of them did it through the internet.

• Feed -backing the results of the e – consultation

The results of the e – consultation were published in the web site of the municipality. The web site disaggregated data and ranked the data of the most voted projects in each unidad.
vecinal. The website also displayed other demographic and general data of the turnout in the e-consultation. A newsletter was also available in the municipal facilities. The Mayor personally compromised himself to include the projects in the design of the CDP. This plan was in the design stage when the data collection of our research ended.

A first general approach to the case study offers some answers to the basic questions of Chapter 2. The how? question is particularly easy to answer. There is no mediation of the process as formerly reviewed in other case studies. Although here technologies, such as internet, are involved the mediation is not executed by a third sector in a strict sense. The who? question is related to the how? question. The lack of an external mediator leaves the municipality as the main articulator of the e-consultation. Citizens participate following the rules of the municipality, not being able to discuss them. Finally, referring to the what for? question, it is not straightforward that the interest of people per se are taken into account. It seems reasonable to infer that participation from people is sought as an end and not as a mean to satisfy their needs and preferences.

Before articulating ANT to the case study, the 5 stages can be analyzed with more detail. The first is the least documented of the stages. So far, there is no evidence about how the municipality invited citizenry to submit projects. Neither guides, nor forms of how to formulate the projects were found in the available documents. Furthermore, there is no reference about how the economic and technical evaluation was carried out. However, it is a more documented fact that this stage was mediated by departments of the municipality and the presidents of the juntas vecinales. In this regard, local needs were considered with spatial criteria, but with some mediation of intermediate actors. The second stage produced an impressive amount of information. Most of it was done in printed and other non electronic media. In the third stage, the hired company, Medios Australes, developed several information programs using municipal databases. It is noticeable that the intervention of this actor was limited to programming activities, without further socio technical considerations.

In the fourth stage the municipality had to manage to involve citizens to increase the turn out in the e-consultation. A large number of assistants were needed to guide citizens into the actual polls. This is understandable because i) this is the first time an e-consultation was introduced ii) some citizens can be poorly familiar with the internet. Finally, the fifth stage has little feedback. Although some information was available, the degree of satisfaction from citizens about the formal outcome of the e-consultation is not documented.

A general overview of the case study shows that first, in contrast with other e-consultations, the process was not mediated by a third party. The process was basically driven by one of the involved parties. Second, a large amount of resources was used to engage citizens. Third, participation was important and mostly done via internet.
3.3. Actor Network Theory (ANT)

In order to gain a better understanding of the e-consultation process, we will review the ANT. The reason to use this framework is meant to analyze the problematic of our case study. In the “Provindecia Participa” project, ICTs are supposed to mediate a desirable organizational change, namely the use of an e-consultation to consult the community about the CDP. From this point of view, the CDP can be understood as an organization by itself, in the sense that its formal outcome is done in an organized way.

As reviewed, literature relies on the environment of the organization (community) for an effective use of ICTs. In general, specialized literature avoids referring to the causality between the use of ICTs and social effects. This is especially important as our research endeavor is oriented to determine if e-consultations (use of ICTs) satisfy (provide to) citizens needs and preferences (a better social environment). Although social sciences search for tendency knowledge, i.e. human behavior is not guided by deterministic rules, the consideration of technologies in the social interplay can be a rewarding task.

ANT belongs to a multidisciplinary field with a relatively short history, originally developed in the early 1980s. Many scholars, mainly from biological and technological backgrounds studied the question if knowledge is socially constructed. This is the field of science and technology studies that has developed conceptual constructs to deal with the processes through which technologies are developed and influence societies. Thinkers of this theory have developed not only empirical but also theoretical studies. Departing from an empirical basis, the theory was developed to understand the processes of science implementations. The benefits of these efforts lead to the understanding of the role of technology in society.

A definition of key terms of the ANT follows. The theory’s language is an integral part of the concept and needs to be contextualized. Due to the lack of space, we will present the theory and the definitions altogether.

The general framework was developed by Michel Callon, Bruno Latour and John Law the mid 80s. They recognized actors that built networks combining technical and social elements. Those actors are also constituted and shaped within the networks where they belong. An actor, for instance, can be the designer of the network. His role is not neutral, as he is also influenced by the network. Technology is also considered an actor. The theory claims that technologies do not evolve under a scientific logic or in a deterministic way. They are not taken by society in a neutral way. In this regard, technologies are a mirror of the society as they are continuously shaped and reshaped by the interplay of actors and their actions within the networks.
Can e-consultations meet citizen’s satisfaction in urban development plans?

Case Study: Providencia, Chile

ANT tradition develops arguments in an empirical context, such as the story of the Domestication of the Scallops and the Fishermen of St Brieuc Bay from Callon (1986). The tales tend to be epical. The rationale behind this method is that properly told stories show how actors manage to constitute themselves and their networks. ANT perceives reality as a set of related pieces not bounded with any rigid social order. It is interested in the attempts at ordering through the formation and stabilization of networks. Tracing the history of a given experience is more useful that a static description of facts, due to the richness of the processes generated by power relationships. Also called the “sociology of processes” (Law, 1999), ANT strength remains in trying to understand power relationships when technology is used. This means that when describing the way in which actors are defined and associated, this discloses the incentives to force them to remain in the network, which in turn constitutes equilibrium. The actual problem is how long that equilibrium is maintained.

Theorists of ANT contend with social scientists in that they understand power as a consequence and not as a cause of collective action. Power makes powerless to those who have it in potentia but don’t actually use it. It makes powerful to those that actually use it in actu. The translation model of power (Callon, 1986) depicts the actions of a chain of agents, who translate or shape power according to their own incentives. Those who are powerful are not those who hold power in principle but those who practically define or redefine what holds the network as one. This shift from principle to practice allows the vague notion of power to be treated not as a cause of people’s behavior but as a consequence of an intense activity of enrolling, convincing and enlisting.

In ANT, translation is the mechanism by which the networks progressively take form, resulting in a situation where certain entities control others. It explains how a few obtain the right to express and to represent the many silent actors they have mobilized. There are four moments of translation; “problematisation”, “interessement”, “enrolment” and “mobilisation”. These moments are defined by a principal actor that convinces other parties to enlist and contribute to the project defined by the latter.

3.4. The CDP in the light of the ANT

Before introducing into the actual modeling of the relationships with the ANT inside the e-consultation, we will break down the problem of the CDP in areas of knowledge. A general abstraction of the areas of knowledge involved in the decision of the CDP is shown in figure 3.1. The figure distinguishes the spaces where the plan takes place, whether public or private. The figure identifies fields of knowledge that influences the CDP, such as the spatial planning of the municipality, local development and land use. Within the scope of these three general fields of knowledge, we will focus in the process that decides over the space (administrative areas) on
projects intended to pursue development. In other words, we are interested in the way the community decides local development issues over the space.

In the CDP the state proposes and projects for the consideration of civil society, which in turn can validate and produce judgments about the effect and impact of those projects. This is a process where a network of actors interplays relating from “the above” (State) passing through “the middle” (CDP as an organization, including technology) and the below (Citizens). These actors are involved in the decisions within a certain urban plan or any other decision taking process.

**Figure 3-1 Communal Development Plan**

Once defined the areas of knowledge we will define the interplay of the actual actors that participate in the e – consultation process in order to gain insight and zoom into the problem. Figure 3.2 is based on the previous abstract schema and shows of how the e – consultation was done and who is involved in it, giving names to the real actors.
The schema shows actors in green ovals (dark grey) are those that are related to the citizenry and representative institutions that are shaped by the process but are vital constituencies of it as their needs and preferences are supposed to be satisfied. These actors, following ANT, have the power in potentia. As long as they don’t exercise an effective pressure on other actors or networks, they are powerless. However, these actors mediate their involvement in the process by other actors, with which they interact, such as their home PCs and the network of municipal facilities, resumed by the use of internet. The interactions of this level of decision in the process are indeed of a diverse nature. Although important actors, they are integrated in networks by other actors. The effects of their influence can be postulated to be little as they are just being consulted but don’t really have a mayor shaping role influencing the proposed projects. These ovals are nested, i.e. they are actors with their own networks, but still suffer translation from other actors. The projects proposed by the presidents of the juntas vecinales are restricted by the economic and technical evaluation done by the municipality, therefore their perceptions of needs can be translated.

Citizens, in turn, have little or very limited access to the proposal of projects as they are also translated in the availability of projects by the choice of the presidents of the juntas vecinales. Citizen’s needs and preferences are voiced by two other mutually influenced actors: presidents of juntas and the municipality.

On the upper side of the circle, the actors with yellow ovals (light grey) are the engineers of the network and have the power in actu. These actors produce the actual translation over the lower level of actors as they are the ones that finally will have the last word in the decision process. This is so as the Mayor’s office has taken the main initiative of the consultation to produce an organizational change in the CDP. Effects of the translation can be seen in the establishment of
the procedure to propose projects, imposing rules, such as the evaluation of proposals and limiting the available choices of half of the available choices to presidentes for each unidad vecinal.

Other relevant actors are the internet and the design of the actual e-consultation website. As ANT proposes, technology can be considered an actor by itself. These actors are basically powerless, or at least cannot display the full action of their power due to the fact that the municipality has already imposed their role. The use of internet is already defined as a voting tool and the design of the website was translated to the developers of the modules. As introduced, the network inside the e-consultation is mainly composed by a private company and facilitators in the municipal facilities. These networks are not open and are translated by the municipality as well. Being open means that they are able to translate power with other actors to voice their interest. One of the most noticeable facts that exposes that the use of internet has been translated is that in contrast with other e-consultation experiences, there are no deliberative tools designed. On line chats, discussion forums or other techniques were absent in the design of the website and the e-consultation itself.

A previous “deliberative stage” to the implementation stage is missing when compared to other case studies. The deliberative stage is one of the main healthy aspects of socio-technical approaches for the design of e-consultations. More deliberative involvement can help in the process as already done in other developing countries (Yuen, B and Soh E. Y., 2006). An interesting lesson can be driven from Singapore’s experience of deliberative citizen participation in the Master Plan 2003. This project attempts to promote participation through citizen’s forums and focus groups. The rationale of this approach is that in the absence of a strong civil society, a government-aided focused deliberative method offers one way of including the community in the planning process. Finally, there are other reasons that determine the power translation of the process. The municipality is a bureaucracy. Even if really innovative projects were translated by other actors and voted, then it is needed to fit their viability into the existing bureaucratic processes.

3.5. Concluding remarks

The use of ANT for the “Providencia Participa” experience is quite enlightening regarding the relationships of the involved actors and the networks they design. It seems clear that in contrast with other e-consultations, the experience of Providencia concentrates power in the designer of the network, i.e. the municipality. Nevertheless, translation of power to the municipality is not necessarily an obstacle to attain the main purpose of the CDP. If properly articulated, citizens can be satisfied with the formal outcome of the organization of the CDP.

This chapter already reviewed that organizations are highly dependent on environmental influences in order to be effective. Although there is a misbalanced translation of one of the actors of the global network, it should be admitted that this is the case in many developing countries with little built capacity for civil society. Anyhow, deliberative instances could be included for more balanced relationships of power. However, authors like Chakravarthy (1986) defend the idea that the ultimate objective of any organization is the satisfaction of the serviced individuals.
Therefore, once understood the relations of powers within the e-consultation, we will address on an empirical basis the satisfaction of the main actor in the e-consultation; citizens.
4. Methodology

4.1. Rationale of a field study

The methodology of this research is composed by a qualitative analysis and by a quantitative analysis of e-consultations. As the qualitative analysis has been already done in chapters 2 and 3, this chapter introduces the methods used for the quantitative analysis. These include the description of the structure of the used data sets to measure inclusion, the method to elicit the main interests of the citizenry and finally the data collection tool used to know the needs and preferences of citizens. The establishment of whether citizens are satisfied or not with formal outcome of the process is assessed in following chapters.

For a general recognition of the location and the collection of secondary and primary data a field study was needed. Due to timeline limits and administrative restrictions the research relied heavily on electronic communications, from e-mails to video conferences, aided by institutional networking to procure data.

The field study was conducted using efficiently available resources and supports from different interested institutions from Chile. The United Nations agency at Santiago de Chile, the municipality of Providencia, ESRI Chile, the Chilean Chamber of Construction, the Metropolitan University of Technology and the Engineering faculty of Geography of the Santiago de Chile University offered generous support to this research.

Data collection was carried out during almost one-month field study period, arriving to satisfying results between end of October and mid November, 2006. A comprehensive collection of primary and secondary data was carried out during the field study period. Secondary data were requested and collected mainly from the municipality. These data were used basically to analyze the e-consultation including answers of how the process was conducted, who took part in it and which were their roles. The local cadastre also provided digitalized maps to link census data to administrative data for the geo database. Specific secondary census data facilitated by UN CELADE agency were collected using special software in order to construct a personal geo database. Once measured the concept of inclusion in all unidades vecinales with the resulting database, the research administered a poll in selected administrative areas to measure needs and preferences of citizens in order find out if they were satisfied with the formal outcome of the e-consultation.

Figure 4.1 displays, based on Figure 3.2 depicting actors of the e-consultation, the different levels of sources where information was gathered from. The planning department of the municipality (SECPLA) and other Municipal departments provided secondary data in the form of memoranda and documents with information about the e-consultation. They also suggested a prospective agenda to
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interview the mayor and other officers and actors involved in the process. In order to identify the main issues that citizens were interested in, NGOs were invited to a Rapid Urban Appraisal (RUA) meeting. Finally, the research surveyed selected administrative units with a specially designed poll. A trained team of surveyors posed questions related to profile, needs and preferences to citizens.

4.2. Background of the field study location

The municipality of Providencia was created in Chile on February 25, 1897. It was then a sub urban rural neighborhood established by Presidential decree of President Errazuriz Echaurren. It belonged originally to the municipality of Nuñoa which was divided due to the fact that it had to serve to growingly demanding areas. It was named after the sisterhood of the Holly Providence, a catholic order originally established in Canada. It’s metropolitan location makes this municipality a obliged way to other municipalities and gives to the local economy an important role in transport, services in general and particularly in finances.

Providencia is an urban area. It is delimited by Santiago Centro municipality to the west, Recoleta to the northwest, Las Condes and Vitacura to the northeast, La Reina to the east, and Ñuñoa municipality to the south. It has an administrative division of 16 “unidades vecinales” (see Figure 4.2) Home to a large upper-middle-class population, Providencia contains a combination of skycraper apartment buildings, single-family homes and a significant number of commercial buildings. The commercial area is mainly located along Providencia Avenue, the municipal backbone of the municipality that carries traffic from down town, namely coming from Bernando O’ Higgins Avenue, the main street of Santiago Centro. Providencia’s collective transportation systems are composed by more than 30 bus lines, almost 60 taxi regular services and 3 metro subway lines distributed in 8 different stations.
In the north-east of Providencia, the economic activities related to services are located close to the financial and commercial areas. Crossed by the Providencia Avenue, commercial and financial activities are vital for the flow of citizens and businesses back and forward downtown. Most of the transport heads to or comes from other municipalities in the northeast (so called “the orient”; mainly Las Condes and Vitacura). Providencia Avenue is an important shopping street with major retail stores, fast food restaurants, pubs, and also some luxurious restaurants. Many highly-priced residential developments can be found around these service areas. Noticeable areas of interest within the municipality include the Metropolitan Zoo, the Teleférico (an aerial kind of gondola that transports tourists from Pedro de Valdivia Avenue to Cerro San Cristóbal), networks of open air television, radios and other media. The municipality is also home to many embassies including those of China, Italy, Peru, Russia and Uruguay. Finally, Barrio Suecia, an area packed with pubs and discos, is an interesting cultural area. Also cultural, Barrio Bellavista is a bohemian area populated with artisans and street art performers. Barrio Bellavista is located beneath the Cerro San Cristóbal, a prominent hill and important city landmark in the city, crowned by a 22m statue of The Virgin Mary.
The municipality has an area of 14.4 km² and a population of 120,874 following the 2002 census. According to this census people in this area live in 51,138 households. Almost 9500 are houses and 40,850 are building apartments. Most of these apartments were constructed in the south eastern neighborhoods, mainly in the last 5 years following economic booming in Chile. Many nation wide sub national indexes distinguished. Providencia as an urban area of higher quality living standards. Among others, the Human Development Index: 0.904 (PNUD-MIDEPLAN 2000), the Quality of Life Ranking: 1 (ranking Seremi plan) and the Social Priority Index: -12.45 (50 / 52 social development compound index).

Providencia has a high concentration of adults (38.9% of the population has 30 to 59 years old). This fact can support the observation that a great deal of floating population has a residence in Providencia but works in other parts of Santiago metropolitan area, producing high mobility. Only 36.5% of the local population studies or works in the same boundaries. Almost 60% studies or works in other destinations. The proximity to Providencia Avenue is one of the main reason that allows this mobility.

### 4.3. Steps of the field study

As introduced, the field study research was conducted with the aid of external actors and assistants that provided resources and support. This external network played a central role in assuring good data quality and a diversified local perspective on local urban development problems. In order to organize the field study efforts, several steps were taken so as to gain a closer understanding of the research problem and to be familiar with the location:

1. Consulting references with advisors, ITC experts and academics from nearby Dutch universities on governance issues, measurement methodologies and survey experiences.

2. Contacting the Providencia municipality and other local references about the key issues of the e-consultation. Requesting and collecting documents and consulting local experts and advisors.

3. Requesting and collecting secondary data from UN ECLAC agency and the municipality (cadastre, planning secretary and press department) to measure physical, spatial and socio-economic characteristics of Providencia Municipality in general and each *unidades vecinales* in particular, especially in those data that indicated inclusion in the e-consultation.

4. Identifying and inviting actor organizations to participate and asses the urban development plan main topics. These actors were included in a Rapid Urban Appraisal (RUA) format with NGO’s participation.

5. Selecting 3 *Unidades Vecinales* for a street survey

6. Gathering primary information from 93 citizens of the 3 selected *unidades vecinales*. This was done with the purpose of measuring needs and preferences of citizenry in different spaces with different problems.
Many tools were used for the field study. In this chapter, only the important ones will be explained, due to the lack of space and because some are accessorital to the others. Steps of the field study were performed using the following tools:

- Literature review and check list interviews with experts and advisors.
- 2 Video conferences Enschede – Santiago to present the research plan, objectives and preliminary findings to interested research organizations. This was useful to collect insights, questions and criticisms. A final video conference was arranged so as to present some preliminary findings and feedback original questions from the first videoconference.
- Semi structured interviews to officers.
- A combined geo data base query for a compound index calculation.
- RUA meeting.
- Street survey questionnaire.

Steps from 1 to 3 in the field study were basically accomplished by literatures review, secondary data collection and interviews prepared with a check list. The descriptions of these tools are of common knowledge in the practice and need no further details. Steps from 4 to 6 were approached with primary data collection; consisting primarily in the methodologies of a rapid urban appraisal and a street survey. The above steps led naturally to the production of different data sets. Combining different tools and methods, primary and secondary geo spatial data were collected, processed and stored. This was done to answer research questions 3, 4 and 5.

### 4.3.1. Secondary data

In order to answer question 4; “**How can we know the level of inclusion of citizens in the use of ICTs?**”, a data base was constructed with two other existing data bases. Data tables were retrieved from the Chilean census 2002 data base Redatam+SP and linked together with cadastral municipal geo data bases.

Before answering question 4 we need to explain what we understand by “inclusion”. This is a general concept that includes two other concepts. These are the concepts of access to ICTs, i.e. the possibility of citizenry to use internet, and the actual concept of participation, i.e. that citizens exercising their rights when ICTs are used. Part of the definition of the concept of inclusion is based in our framework analysis done in chapter 2. The definition of the concept is related to the question of **who**, **what technologies is used by and to which extent (citizens participate)?**. The answer to **what technologies are used?** was the use of internet. The variable that will be used to measure this concept is access to the infrastructure of internet in homes in each administrative unit. The answer to the question **to which extent people should participate?** was referred to the attitudes of people towards internet usage. The concept of participation will be measured with the actual level of turn out of citizens in the e –
consultation. The variable consists in the percentage of total inhabitants that voted via internet in each *unidad vecinal*. This information was obtained from the consultation website.

The concept of inclusion is defined in a compounded index of two variables with 50% weight each; i.e.

\[ II_i = 0.5 * A_i + 0.5 * P_i \]

Being \( II \) the index of inclusion, \( A_i \) the variable measuring “access” and \( P_i \) the “participation” variable. The sub index “i” ranges from 1 to 16, i.e. each of the *unidades vecinales*.

To measure the level of access we will combine the census data sets and the geo database from the local cadastre. The census is organized into data sets comprising different census administrative units, starting with the higher entity region (REGION), formed by provinces (PROVINCI) having communes (COMUNA) in a district (DISTRITO) within a certain division on rural/urban areas (AREA) located in a rural or urban zone (ZONALOC) which have blocks (MANZENT) that are divided in census registry units (SECTOR) which contains buildings or houses (VIVIENDA) that in turn have households (HOGAR) where persons (PERSONA) live in. The retrieval of data was done using Redatam + SP Process, a package of software designed by a local UN agency, CELADE, used to process census data from countries from Latin America. The above detailed census three is shown below in Figure 4.3.

**Figure 4-3 Census entities tree**

The Redatam + SP software has a functionality that allows to select from all communal data sets the one the user is interested in. First we copied with due authorization from the UN agency the data library of the dataset for the Providencia commune. We organized the data by census blocks (MANZENT). As the e-consultation was opened to all persons of age 18 and more, we performed a filtering in the data base so that the data sets only contained information coming from individuals older than 18 years old.
Once selected the level of census blocks (MANZENT) and filtered by age profile, attributes in the entities “HOGAR” and “PERSONA” were retrieved. At the “HOGAR” level, the selected variable was internet access as shown below. At the “PERSONA” level many attributes were chosen and recorded in a personal data base for further analysis. This attributes were “ANHOEST” (total amount of years studied) “CURSO” (last level of education attained) “EDAD” (age) “EDQUINQ” (age by 5 years) “LUGTRAES” (Commune were the person works or studies) “LUGVIV” (if the person lives in the Commune regularly).

After a careful consideration, two attributes from the chosen entities were preferred for the measurement of inclusion; “HOGAR.INTERNET”, i.e. households with internet, for being an explanatory value for access to ICTs referred to the access concept and “PERSONA.AHNOEST”, i.e. persons with a certain level of studies, for being an (proxy) explanatory variable of the level of participation also referred to the participation concept. The fundament to test this last variable as a proxy for participation comes from the theory the more education a person has the more used to participation he or she is (Anderson, D. and Verboorn, A., 1983). Other census data attributes showed to be useless for the measurement of participation or other concepts related to inclusion. The former variable was finally ignored to define participation and replaced by figures of the actual turnout per administrative units or “unidad vecinal” in the e-consultation. (see chapter 5 and Figure 4.4).

Finally, a manual process was followed to identify the obtained home and person data in census blocks belonging to a certain administrative unit “unidad vecinal”. The reason to construct manually the linkage between the two databases is explained because of limitations of the census itself and technical restrictions.

The original census data are organized in different units from the municipal administrative units. This is crucial for the research as the “unidades vecinales” were the spatial units considered for the e-consultation. The data bases produced an outcome table organized by the entity “MANZENT” using the primary key “MANZENT_ID”. Once retrieved the data for this level, the cadastral geo data base can be related to them, as the census blocks are identifiable in the cadastral maps with a convenient
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In order to match and identify census blocks that had processed data with those of the municipal cadastre, two layers were considered: the cadastre blocks and the census blocks. The census blocks were identified in the layer “manzanas_censales_INE” and were overlaid with those of the cadastre “manzanas_catastro”.

Technical restrictions showed that this couldn’t be done with the regular pivotal table tool from ARC Map due to the fact that the municipality did not produce the layer’s data in another format than Autocad that proved to be unmanageable with the typical ARC GIS features. Therefore a manual browse of the layers was performed, overlaying the two sets of blocks; only those blocks that contained home and person data were included in the tables for the calculation of the inclusion index. A new entity “UNIDAD_VECINAL” took the place of the before called entity “ZONALOC” in the census dataset. Each unidad vecinal was primarily identified by its number, following the number of administrative units in the municipality with the secondary key being the “MANZENT_ID”.

4.3.2. Primary data

The field study produced also data sets of information to measure the needs and preferences of citizens in order to understand if they were satisfied with the outcome of the e-consultation. These data sets were produced with information coming from NGO’s from Providencia in general and 93 citizens of 3 selected “unidades vecinales” considered as sub case studies. The resulting data base was designed to answer research questions 3 and 5: “Which are the most important issues considered by the actors of the communal development plan?” and “How can we know if citizens are satisfied with the CDP decisions?”

The survey aims to portray the perception of actors with less power focusing in the level of unidad vecinal, recording with different data collection tools problems raised by citizenry. The tools used to collect data were a Rapid Urban Appraisal and a street survey. The street survey contained two questions referred to main issues in the CDP. In each unidad vecinal the survey asked about the benefit expected from the most voted project in the e-consultation in that area. Additionally, the street survey asked citizens about their needs and gave alternatives from were to show preferences about the main urban development issues. These questions were formulated based in the main problems raised in a previous RUA meeting.

The questions were intended to capture their perception about the more relevant problems of the corresponding “unidad vecinal”. Once processed the answers, the preferences will be compared to the data base of the formal outcome of the e-consultation. To simplify the assessment, preferences will be compared to the first project most voted in the e-consultation for each of the 3 selected unidades vecinales.

To illustrate the questions, an example for Pedro de Valdivia Norte follows. Questions were formulated in Spanish using local jargon. In this example they are translated to English. The questions intended to elicit needs were the following
Another insight to the different perceptions according to the different stakeholders is the following question, also to crosscheck the consistencies of answers (also sampling Pedro de Valdivia Norte):

**in Spanish**

7 De los siguientes problemas de este sector, según usted cuales son los de mayor prioridad para resolver?

a) Mejorar la seguridad.

b) Incrementar la medidas de reforestación y control ambiental.

c) Construcción de espacios públicos.

d) Incrementar medidas de seguridad vial.

e) Mejoramiento de la infraestructura vial.

f) Recuperar y potenciar la utilización de espacios públicos

**in English**

7 From the following list of problems in this area (understood as unidad vecinal), according to your point of view, which are those with higher priority to be solved?

a) Enhance security.

b) Increment regulations for reforestation and environmental control?.

c) Construction of public spaces

d) Increment regulations on transport security.

e) Enhance transport infrastructure.

f) Recover and boost public spaces use

g) Others (What?)

### 4.3.2.1. RUA meeting

This tool was basically used to design question number 7 in the street survey. Its rationale was to elicit local knowledge about urban development problems of the municipal area in general.

A local team of assistants supported by the Chilean Chamber of Construction, invited 15 days in advance a total number of 38 NGOs. The selection of the invited organizations was guided considering local interests and problems, such a transport, elder care, arts craft and culture, sports and other local development issues. The final turn out in the meeting was a total of 10 participants, including sports, arts craft and transport interests. The meeting took place in early October 2006 in the building of the Chilean Chamber of Construction located in the heart of Providencia Avenue.
The first part of the meeting consisted in introducing ITC as a Dutch institution networking with local universities and research institutions such as the studies dept of the Chilean Chamber of Construction. A detailed explanation of the scope and objective of the research followed. The core of the meeting consisted to answer, using a problem tree technique the following questions:

- Which are the most important problems in Providencia?
- Why?

The second part was used to define the relevant problems, trying to discuss searching for agreement about common perceptions. The technique was designed to allow the participation of all attendants. According to each interest; culture, sport and transport, color cards were distributed to participants. Each group of interest wrote the main problems they considered relevant. Using a whiteboard, cards were pasted forming the “roots” of the tree. Each card contained a specific problem. Trying to be as clear as possible, each group explained to the other participants the problems they had formulated. The next step was to invite participants to discuss and choose which problems had something in common with others. According to a new debate, participants arrived to an agreement and reformulated the problems of the “roots”, merging and forming the “trunk” of the problem tree. Finally, each group was invited to propose solutions for the posted problems. Participants were asked to be as specific as possible. The resulting cards formed the “crown” of the tree. Once the process finished, a general a discussion was conducted to confirm and approve the obtained results. A leader from each group or organization was chosen to summarize the fundaments of the solutions and how were they linked to the problem. A report of the RUA was given to the participants, in order to detect possible misunderstandings and to validate results.

![Figure 4-5 Photographs of the RUA meeting](image)

### 4.3.2.2. Sub case studies

3 sub case studies were carried out to describe, assess and compare the citizen’s preferences in selected unidades vecinales. The chosen cases were Santa Isabel, Pocuro (Los Leones) and Pedro de Valdivia Norte. Several criteria were considered for the choice of sub case study areas. The rationale of the technique was to survey with an exploratory purpose selected areas. The aim of the sub case study selection is to represent properly the needs and preferences of the resident and non resident
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citizens. These criteria were referred to spatial location of the area, population profile and the existence of problems identified previously in the RUA.

These criteria were:

1. Age of the population
2. Existence of participation centers
3. High rate of stable residents (Proximity to Providencia Avenue)
4. Availability of green areas
6. Internet access to homes

The characteristics of each of the three unidades vecinales with respect to these criteria are outlined in Table 4.1.

Table 4.1 Characteristics of sub case study unidades vecinales by selection criteria

<table>
<thead>
<tr>
<th>Characteristics of the selection criteria</th>
<th>Unidad vecinal 6 Santa Isabel</th>
<th>Unidad vecinal 8 Pocuro</th>
<th>Unidad vecinal 12 Pedro de Valdivia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age profile of the population</td>
<td>Older and middle age</td>
<td>Middle age</td>
<td>Middle Age / young families</td>
</tr>
<tr>
<td>Existence of participation centers (elder centers, schools, HEIs, etc.)</td>
<td>2 elder centers 3 public schools (total 8) 2 HEIs</td>
<td>1 elder center 1 public school (total 4) No HEI</td>
<td>No schools 1 HEI</td>
</tr>
<tr>
<td>High rate of stable residents (Proximity to Providencia Avenue)</td>
<td>832 mts from centroid</td>
<td>13532 mts from centroid</td>
<td>643 mts from centroid</td>
</tr>
<tr>
<td>Availability of green areas</td>
<td>2 small plazas No or few house gardens Some street trees</td>
<td>2 medium plazas Narrow house / front gardens Plenty street trees</td>
<td>2 medium plazas Wide front and backyards Plenty street trees</td>
</tr>
<tr>
<td>Buildings external quality.</td>
<td>Good / old lower constructions</td>
<td>Very Good / higher buildings</td>
<td>Very good / Luxurious-Big houses</td>
</tr>
<tr>
<td>Internet access to homes</td>
<td>33% has internet at home</td>
<td>43% has internet at home</td>
<td>53% has internet at home</td>
</tr>
</tbody>
</table>

The tasks in each of the three sub cases were:

1. Identify the main participation centers and usual places of meeting in each unidad vecinal, presidents of the Juntas vecinales and general profile of its population.
2. Design and administer a questionnaire.
3. Produce a general overview of other topics in the area that were not considered beforehand in the questionnaire.
The methods used for the surveying each subcase study were short interviews conducted within the boundaries of the \textit{unidades vecinales}. These interviews were designed to make full use of local knowledge and experience and assisted by locals. The procedures used for the interviews are described below.

\textbf{4.3.2.3. Street survey}

\textbf{Design}

The objective of the street survey was to identify needs and preferences of citizens related to the main topics voted in the e-consultation.

The questionnaire ("sondeo de opinion" in Spanish) had two parts:

1. Part I – (structured questions - 1 to 4) General profile of the voter

2. Part II – (semi structured and open questions - 4 to 7)

This distinction was made because Part II contained questions that required a personal point of view from the respondent. It was assumed that not all the respondents would be willing to give a neutral viewpoint so semi structured questions guided the open question to answer those questions.

The full questionnaire is shown in Appendix 1. One questionnaire was prepared per each \textit{unidad vecinal}, as problems and projects differed for the e-consultation.

Some basic issues considered for the questionnaire design were:

- Listing questions in order of increasing difficulty and place sensitive questions at the end of the questionnaire sections
- Posing open questions as clearly as possible, based on the local knowledge of words from the two local assistants.
- Limiting the number of questions to those that are essential for the purposes of the research
- Providing enough writing space for open questions

\textbf{Administration}

The surveyed individuals for the purposes of measuring satisfaction were citizens. This was done as an exploratory study in selected \textit{unidades vecinales} that were located in different parts of the study area. The questionnaire was preferred because it was less expensive and can be used to collect data from a wide range of respondents in a short time.

The administration of the questionnaires was done in the main streets of the \textit{unidades vecinales} close as possible to participation or massive meeting points. It took from the respondents about twelve minutes to cover all the questions. This mode of distribution gave to the respondents time enough to answer, in some cases while they were undertaking their daily activities or walking to work as the assistants completed the questionnaires. The questionnaires were administered on a voluntary basis.
also with a first come first served method and the respondents were free to determine the extent to which they would participate in the questionnaire survey.

Out of 120 questionnaires originally prepared for the three *unidades vecinales*, 93 were completed and checked as satisfactorily answered for the purposes of the research.

**4.3.3. Limitations of field data collection methods**

As introduced, the field study was conducted with the support of the municipality and local research organizations. Although this is valuable contribution, the selection of external actors with their own economic and technological interests can introduce bias.

Other technical limitations and sources of bias can be found:

- The census data of internet usage is referred to a snapshot in year 2002. Being the use of internet a dynamic phenomenon, it is likely that the access to ICTs has grown since that year.

- In the RUA, representatives of NGOs may give politically correct answers, under pressure of colleagues.

- The street survey could be used as a catalyst for complaints, sometimes with exaggerated contrasts.

- In the case of Pedro de Valdivia sub case study, many respondents adduced lack of time for not answering. This self selects respondent of a certain profile, biasing the quantity and quality of answers.
5. Results

5.1. Introduction

This research intends to come up to the research objective with qualitative and quantitative analysis. A great deal of qualitative analysis has been done reviewing the existing literature. The qualitative analysis was performed to define and discuss the underlying key concepts. Thus, the endeavor of this research departs from the results and findings of state-of-the-art practices and theories. Chapters 2 and 3 draw results of this analysis in the concluding paragraphs. Also further literature review, i.e. memoranda and documents from institutions involved in the case study, was necessary to gain background knowledge of the study area. The results of that effort are shown partially in chapter 4.

The objective of the present chapter is to apply the methods described before, so as to perform a quantitative analysis of the research problem. Levels of inclusion, main interests, needs and preferences of citizens will be established. This will be done to finally determine the degree of satisfaction of citizens with the formal outcome of the e-consultation.

In order to answer research questions 3, 4 and 5, we will proceed as follows. First, we will show the results and analyze the measurement of the concept of inclusion. The measurement of inclusion of citizens will be done in all administrative areas of the municipality characterizing the local ICT infrastructure and citizenry participation in the e-consultation. Secondly, once arrived to a conclusion about the index of inclusion in all *unidades vecinales*, we will address the results that the RUA meeting offered. This method was intended to identify in an efficient and spontaneous way the most important issues considered by the citizens.

Thirdly, the next step in the research process will be to link the results found in the workshop to the questions posed to citizens in a street survey. Using the introduced exploratory technique, we will narrow down the analysis to only 3 sub case studies. This will suffice to reveal needs and preferences of the resident and non resident citizens of different areas. The street survey results will be finally displayed. The final paragraphs will discuss about needs and preferences of citizens in order to recognize their degree of satisfaction. These results will finally be compared with the formal outcome of the e-consultation.

5.2. Results from secondary sources data sets

The measurement of the concept of inclusion is based on data sets from secondary sources. The figures used came from the module of “results” published in the “Providencia Participa” e-consultation website and the 2002 census of Chile. For simplicity, the results were tabulated.
following the numerical classification of the *unidades vecinales* from 1 to 16. The location of the *unidades vecinales* is shown in figure 1.2. Access and participation figures are displayed respectively in tables 5.1 and 5.2 below.

### Table 5.1 Access: Percentage of households with internet access in 16 *unidades vecinales*

<table>
<thead>
<tr>
<th>Administrative Unit</th>
<th>% of Access</th>
<th>Administrative Unit</th>
<th>% of Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unidad Vecinal 1</td>
<td>0.34</td>
<td>Unidad Vecinal 9</td>
<td>0.49</td>
</tr>
<tr>
<td>Unidad Vecinal 2</td>
<td>0.38</td>
<td>Unidad Vecinal 10</td>
<td>0.53</td>
</tr>
<tr>
<td>Unidad Vecinal 3</td>
<td>0.35</td>
<td>Unidad Vecinal 11</td>
<td>0.32</td>
</tr>
<tr>
<td>Unidad Vecinal 4</td>
<td>0.40</td>
<td>Unidad Vecinal 12</td>
<td>0.33</td>
</tr>
<tr>
<td>Unidad Vecinal 5</td>
<td>0.43</td>
<td>Unidad Vecinal 13</td>
<td>0.53</td>
</tr>
<tr>
<td>Unidad Vecinal 6</td>
<td>0.33</td>
<td>Unidad Vecinal 14</td>
<td>0.32</td>
</tr>
<tr>
<td>Unidad Vecinal 7</td>
<td>0.44</td>
<td>Unidad Vecinal 15</td>
<td>0.43</td>
</tr>
<tr>
<td>Unidad Vecinal 8</td>
<td>0.43</td>
<td>Unidad Vecinal 16</td>
<td>0.31</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>0.40</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Chilean census 2002

### Table 5.2 Participation: Percentages of voters from the population in the e-consultation

<table>
<thead>
<tr>
<th>Administrative Unit</th>
<th>Population</th>
<th>%</th>
<th>Voters</th>
<th>%</th>
<th>% of Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unidad Vecinal 1</td>
<td>3273</td>
<td>2.71%</td>
<td>609</td>
<td>3.86%</td>
<td>19%</td>
</tr>
<tr>
<td>Unidad Vecinal 2</td>
<td>7541</td>
<td>6.24%</td>
<td>1053</td>
<td>6.67%</td>
<td>14%</td>
</tr>
<tr>
<td>Unidad Vecinal 3</td>
<td>7746</td>
<td>6.41%</td>
<td>1028</td>
<td>6.51%</td>
<td>13%</td>
</tr>
<tr>
<td>Unidad Vecinal 4</td>
<td>8752</td>
<td>7.24%</td>
<td>1337</td>
<td>8.47%</td>
<td>15%</td>
</tr>
<tr>
<td>Unidad Vecinal 5</td>
<td>14233</td>
<td>11.78%</td>
<td>1700</td>
<td>10.77%</td>
<td>12%</td>
</tr>
<tr>
<td>Unidad Vecinal 6</td>
<td>8408</td>
<td>6.97%</td>
<td>1193</td>
<td>7.56%</td>
<td>14%</td>
</tr>
<tr>
<td>Unidad Vecinal 7</td>
<td>12150</td>
<td>10.05%</td>
<td>1800</td>
<td>11.40%</td>
<td>15%</td>
</tr>
<tr>
<td>Unidad Vecinal 8</td>
<td>13107</td>
<td>10.86%</td>
<td>1730</td>
<td>10.96%</td>
<td>13%</td>
</tr>
<tr>
<td>Unidad Vecinal 9</td>
<td>9400</td>
<td>7.78%</td>
<td>1103</td>
<td>6.99%</td>
<td>12%</td>
</tr>
<tr>
<td>Unidad Vecinal 10</td>
<td>7412</td>
<td>6.13%</td>
<td>942</td>
<td>5.97%</td>
<td>13%</td>
</tr>
<tr>
<td>Unidad Vecinal 11</td>
<td>2187</td>
<td>1.86%</td>
<td>394</td>
<td>2.50%</td>
<td>18%</td>
</tr>
<tr>
<td>Unidad Vecinal 12</td>
<td>3615</td>
<td>3.00%</td>
<td>476</td>
<td>3.01%</td>
<td>13%</td>
</tr>
<tr>
<td>Unidad Vecinal 13</td>
<td>3806</td>
<td>3.15%</td>
<td>427</td>
<td>2.70%</td>
<td>11%</td>
</tr>
<tr>
<td>Unidad Vecinal 14</td>
<td>5240</td>
<td>4.34%</td>
<td>509</td>
<td>3.22%</td>
<td>10%</td>
</tr>
<tr>
<td>Unidad Vecinal 15</td>
<td>8606</td>
<td>7.12%</td>
<td>1006</td>
<td>6.37%</td>
<td>12%</td>
</tr>
<tr>
<td>Unidad Vecinal 16</td>
<td>5263</td>
<td>4.36%</td>
<td>482</td>
<td>3.05%</td>
<td>9%</td>
</tr>
<tr>
<td><strong>Total Communal Pop.</strong></td>
<td>120739</td>
<td>100.00%</td>
<td>15789</td>
<td>3.05%</td>
<td>13%</td>
</tr>
<tr>
<td><strong>Average population per unidad vecinal</strong></td>
<td>7546.19</td>
<td><strong>Average</strong></td>
<td>13%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Chilean census 2002 and www.providencia.cl

Using the formula explained in chapter 4 for the measurement of the index of inclusion,
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\[ II_i = 0.5 \times A_i + 0.5 \times P_i \]

Where;

- \( II = \) index of inclusion,
- \( A_i = \) variable measuring “access”
- \( P_i = \) “participation” variable.
- “i” = 1… 16, number of unidad vecinal.

Combining results from tables 5.1 and 5.2, we arrive to the following results in table 5.3

<table>
<thead>
<tr>
<th>Unidad vecinal</th>
<th>Inclusion Index ( = 0.50 A_i + 0.50 P_i )</th>
<th>Unidad vecinal</th>
<th>Inclusion Index ( = 0.50 A_i + 0.50 P_i )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>16.62%</td>
<td>7</td>
<td>19.11%</td>
</tr>
<tr>
<td>14</td>
<td>17.31%</td>
<td>9</td>
<td>19.40%</td>
</tr>
<tr>
<td>4</td>
<td>17.36%</td>
<td>5</td>
<td>19.54%</td>
</tr>
<tr>
<td>11</td>
<td>17.67%</td>
<td>2</td>
<td>19.82%</td>
</tr>
<tr>
<td>3</td>
<td>18.33%</td>
<td>6</td>
<td>19.87%</td>
</tr>
<tr>
<td>16</td>
<td>18.52%</td>
<td>15</td>
<td>20.61%</td>
</tr>
<tr>
<td>8</td>
<td>18.67%</td>
<td>12</td>
<td>20.65%</td>
</tr>
<tr>
<td>13</td>
<td>18.97%</td>
<td>10</td>
<td>21.30%</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td></td>
<td>19.99%</td>
</tr>
</tbody>
</table>

Source: Tables 5.1 and 5.2

Access shows in table 5.1 quite high figures, compared to the average of connectivity in Chile, according to the 2002 census. The average access in 115,000 households in the 10 most connected municipalities in Santiago is 31.8%. The average of the Providencia municipality is 40%. This indicates that Providencia is a prepared environment for general experiences that need the use of ICTs in Chile. However, the percentages are underestimated as already referred, due to the increasing number of internet ISP providers and higher demand for internet connections in recent years.

On the other hand, an overview of the results in table 5.2 suggests that an average of 13% of participation is low but still an important one. Considering that this is the first time an e-consultation is done, this is good news even for international standards. In Porto Alegre, Brazil, the average participation for a similar process in 1996 - the Pluriannual Investment Plan elicited with ICTs in a participatory poll - was around 8%. Although rates of voting turn out in Chile were 72.8% in the last general elections, the gap between both national and local turn outs is reasonable considering the decisions these two processes involve. One is a president that rules a whole country for a period of 5 years, the other a local plan for the same period of time.

The table 5.3 is organized to display results of the calculation of the index of inclusion from all unidades vecinales. It ranks all levels of inclusion starting with the administrative unit with less inclusion and ends with the one with higher inclusion. The table shows in bold figures the index corresponding to the study case selection. Although there is no clear pattern of between the location of the unidades vecinales and the index of inclusion, some interesting insights can be pointed out. All
first four units; 1, 14, 4 and 11 that have the lowest index are limiting with Providencia Avenue. Units that have the highest index; 6, 15, 12 and 10 are located in units with no boundaries with Providencia Avenue.

This finding shows that residential units have a higher access to internet and a higher level of participation. This result matches with the observation pointed in section 4.2. We observed then that Providencia has a high mobility of people. Therefore, it is much likely that the central areas close to the main avenue are “non resident areas” due to the fact that most commercial areas are located there. Therefore, we can conclude that the higher the index higher is the possibility of a given areas to get more involved in e-governance processes, especially in this kind of e-consultations about the CDP. Indexing inclusion for urban plans can be useful in order to gain better understanding of the process that engage citizens in the making of cities.

**Figure 5-1 Histogram of the index of inclusion**

Finally, a histogram of the index is shown Figure 5.1. In this graph, observations of all 16 administrative units were divided into quartiles, choosing as the label of the class the average of the values included in each class. The distribution of values suggests that most of the areas have an inclusion index below 20.65%. Basically, 81.25% of the observations are between 18.6% and 20.65%. The histogram confirms that the selection of the 3 sub case studies is representative enough. Checking table 5.3 we can see that all values of the sub case studies fall between those values. This means that *unidades vecinales* 8, 6 and 12 can be good choices.

### 5.3. Results from primary sources data sets

#### 5.3.1. Results from the RUA meeting

Before analyzing needs and preferences of citizens in the selected 3 sub case studies we needed to establish which issues of urban development are considered most important by citizens. For this
purpose, organizations representing different interests; such as sports, arts crafts, culture and transport were invited to a RUA meeting. In this meeting the problem tree technique was used.

In the roots of the tree, the problems mentioned by participants are shown in figure 5.2.

**Figure 5.2 Trunk and roots of the problems tree described by RUA participants**

<table>
<thead>
<tr>
<th>Lack of public spaces</th>
<th>Lack of security</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Greenery</td>
<td>• In the street</td>
</tr>
<tr>
<td>• Sportive</td>
<td>• Personal</td>
</tr>
<tr>
<td>• Cultural</td>
<td></td>
</tr>
</tbody>
</table>

Lack of public spaces for participation for the youth
Lack of sport facilities
Lack of spaces for artisans and arts craft sales
Sub utilization of public spaces
Neighborhoo d security
Street security

Other accessory needs were mentioned, such as noise pollution, little communication with authorities from citizenry and the bureaucratic structures of the municipality.

After an insightful discussion, participants agreed that 2 main issues were the most important:

- Lack of public spaces
- Lack of security

The “crown” of the problem tree was not included as the exercise was meant to identify only the main problems considered by citizens. However, the RUA showed a great deal of involvement of participants, producing themselves many solutions. For the sake of space we will not display the proposed solutions.

To conclude, the RUA meeting showed efficiently that the most important problems of the urban area perceived by the citizens were; i) public space (of all kinds) and ii) security (in the streets and personal). The exercise proved to be fruitful to have an insight of the general problems of the municipality form the point of view of the NGO’s. These results elicit in a spontaneous way the needs and preferences that can be consulted to citizens. They are useful to compare the projects originally proposed in the e – consultation to find consistencies or discrepancies. This introduces us to the street survey.

**5.3.2. Results from the street survey**

As already introduced, the street survey was conducted in 3 different administrative units. We will use the referential names of the *unidades vecinales* to assess the sub case studies of Santa Isabel (number 6), Pocuro (number 8) and Pedro de Valdivia Norte (number 12). In Santa Isabel 41 citizens were
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surveyed, in Pocuro 35 citizens and Pedro de Valdivia’s sample size was of 17 individuals. The sample size is not directly related to the population size as table 5.2 shows. Its representative value is much related to the sampling technique described in 4.3.2.2 and mostly to the available resources to survey.

As introduced in that section, the administered questionnaire consisted in two sections. The first contained profiling questions posed to gain knowledge of spatial habits related to the e–consultation in the 3 selected areas. The second section contained questions specifically referred to needs and preferences. The former were selected from a list of urban development issues using ad hoc techniques.

The main objective of characterizing the profile of the citizens of the surveyed areas is intended to recognize patterns of awareness and behavior towards the e–consultation. A clear majority of 57% of the interviewed recognized that they were aware of the “Providencia Participa” project. However, as already observed, only 13% of the actual population voted. This already constitutes interesting information; revealing a frictional attitude towards the process. The sample figures confirm this finding. Results show that on average only 10% of the surveyed voted with a standard deviation of only 0.0161. This also suggests that the exploratory selection of the areas were correctly sampled.

<table>
<thead>
<tr>
<th>Place →</th>
<th>Using internet at home</th>
<th>Using internet at a relative – neighbor’s home</th>
<th>Using internet in a cyber café</th>
<th>Using internet at your work or place</th>
<th>Using internet at a voting facility close to your home or work</th>
<th>Using internet at a different voting facility</th>
<th>In paper in the closest ballot box facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where did you vote?</td>
<td>44%</td>
<td>0%</td>
<td>11%</td>
<td>22%</td>
<td>22%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Place →</td>
<td>Home or Neighbors home</td>
<td>In the bar, market, liquor store</td>
<td>Work, primary School High School University</td>
<td>Social Club (mothers group, elder centers or similar )</td>
<td>Sport Club</td>
<td>Neighbor Committee / Junta de Vecinos</td>
<td>Other national Organisms</td>
</tr>
<tr>
<td>Where do you meet to discuss? (to all surveyed)</td>
<td>45%</td>
<td>5%</td>
<td>39%</td>
<td>1%</td>
<td>0%</td>
<td>5%</td>
<td>6%</td>
</tr>
</tbody>
</table>

Source: Field study surveys produced together with USACH

Results of other profiling questions related to spatial habits in the use of to internet and participation are shown in table 5.4. Selecting those cases of people that voted, on average 44, 44% of them did it from their homes. The fact that the average of access to internet in homes is 30% is closely related to
the logic of this behavior. The other two places most used by citizens to vote were work (22%) and the facilities organized by the municipality in their own administrative areas (22%). None of the surveyed declared voting at the home neither of a relative’s or a friend nor in other municipal facility far from their area. These patterns suggest a certain individualistic behavior of the surveyed considering inclusion spatial habits. It also reveals spatial rationality to the voting centers.

This intuitive insight is supported by the fact that when asked to all surveyed in which places did they discussed urban problems, 45 % answered that they did it at home or in the neighbor’s house. In second place (39%) people discuss the problems of their area at work or in educational facilities. Finally; bars and markets (5%), juntas de vecinos or local level committees (5%) and national organizations (6%) are secondary places chosen by these citizens to discuss. The bottom line seems to be that inclusion, at least for the e –consultation purposes, is being exercised with little mobility of citizens in the space to deliberate. In simple terms, people walk little the talk.

The second part of the questionnaires addressed the core of our research; needs and preferences of citizens regarding urban development. In order to understand needs and preferences we will refer the concept to the economic science. A need is something that an individual lacks to pursue utility, i.e. to feel well. Considering urban development, this means that needs are the absence of goods or services producing utility in the living environment. According to Mas-Colell, A. et al (1995) a preference is the revelation of how individuals organize their needs in their minds. To determine the preference without measuring actually having to measure the level of utility, an ordinal method is normally used.

The ordinal approach does not require consumers to say how much utility they get in absolute terms from consuming a particular good. Instead, it asks them to indicate the relative utility they get from consuming one item compared with another i.e. if they prefer one set of goods to another, or are indifferent between them.

Table 5.5 shows the most important urban development needs surveyed in the 3 selected areas. The selection of the needs asked to citizens in the survey was based in the results coming from RUA meeting. Some convenient adaptations according to local issues were included based on considerations suggested by the presidents of “juntas vecinales” in each sub case study. Also citizens could spontaneously mention the needs they perceived for the area.

The original questions of the survey were referring to projects that citizens could select. Questions were posed with a positive formulation ( e.g. “to enhance security in the area”, “to increment control”) because projects are suppose to satisfy needs Therefore, what originally was consulted as a prospective solution for the area, table 5.5 formulates it as a need, among other reasons, because projects are not yet implemented.
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### Table 5.5 Ranking of urban development needs

<table>
<thead>
<tr>
<th>Santa Isabel Unidad Vecinal 6</th>
<th>Pedro de Valdivia Norte Unidad Vecinal 12</th>
<th>Pocuro Unidad Vecinal 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of security</td>
<td>18</td>
<td>5.5</td>
</tr>
<tr>
<td>Flaws in transport infrastructure</td>
<td>7.4</td>
<td>3.9</td>
</tr>
<tr>
<td>Need of public spaces use</td>
<td>4.9</td>
<td>3.0</td>
</tr>
<tr>
<td>Failure in regulations on transport security</td>
<td>4.6</td>
<td>2.7</td>
</tr>
<tr>
<td>Lack of sport practice infrastructure</td>
<td>4.4</td>
<td>0.9</td>
</tr>
<tr>
<td>Lack of resources to strengthen the neighborhood management</td>
<td>1.6</td>
<td>0.8</td>
</tr>
<tr>
<td>Others</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Others</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Others</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Poor transport service coverage</td>
<td></td>
<td>0.6</td>
</tr>
</tbody>
</table>

### Source: Field study surveys produced together with USACH

The ranking of these needs in the survey was done based on a simple method that distributes a total utility of a symbolic unity to all needs of an individual. When a citizen revealed only one need, the value was one. If he preferred one more than the other, then 0.6 is value of the most wanted and 0.4 the less preferred. If he reveals preference for three needs, the values are 0.5 for the first, 0.3 for the second and 0.2 for the third. Citizens had to choose out a maximum of 3 needs.

In order to compare the general results of the survey with the formal outcome of the e-consultation, table 5.6 displays the 3 most voted project in each surveyed unidad vecinal.
Can e-consultations meet citizens’ satisfaction in urban development plans?

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Table 5.6. Three most voted projects in Santa Isabel, Pocuro and Pedro de Valdivia

<table>
<thead>
<tr>
<th>Santa Isabel Unidad Vecinal 6</th>
<th>Pedro de Valdivia Norte Unidad Vecinal 12</th>
<th>Pocuro Unidad Vecinal 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>770</td>
<td>275</td>
<td>1014</td>
</tr>
<tr>
<td>2. Enhance street lights in the administrative unit</td>
<td>2. Construction of bike paths in Conquistadores Ave.</td>
<td>2. Enhance side walk paths</td>
</tr>
<tr>
<td>464</td>
<td>196</td>
<td>714</td>
</tr>
<tr>
<td>409</td>
<td>183</td>
<td>698</td>
</tr>
</tbody>
</table>

Source: www.providencia.cl

The final step of our quantitative analysis will relate the needs and the respective order of preferences in each *unidad vecinal* with the solutions voted in the e-consultation. This is what in economics would be called the process, that it to say, to maximize a certain function subjected to certain limitations. In our research the problem at stake can be stated as to which extent citizens are satisfying their needs with the available solutions or resources.

Preferences in our view are organized in an ordinal way, so little mathematical measurements can be arranged in functions or in a continuous field. Nevertheless, we will try to use intuitive criteria to find similarities that could represent the match between needs and proposed projects. A matrix of 3 per 3 will be used to compare needs and preferences with the projects. As preferences are organized in an ordinal way and projects will be given priority in the CDP according to their votes, the more matches between needs and projects, the more close to the principal diagonal of the matrix matches will be. The less satisfied citizens are, the farthest from the principal diagonal matches will be. The matrix could be extended to other voted projects, but the lack of information prevents us of doing so.

Table 5.7 Unidad Vecinal 6 Match of needs and preferences with available projects

<table>
<thead>
<tr>
<th>Need-Voted Project</th>
<th>Lack of security</th>
<th>Flaws in transport infrastructure</th>
<th>Need of public spaces use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Setup of surveillance security cameras</td>
<td>Match</td>
<td>No match</td>
<td>No match</td>
</tr>
<tr>
<td>2. Enhance street lights in the administrative unit</td>
<td>Match</td>
<td>Match</td>
<td>No match</td>
</tr>
<tr>
<td>3. Refurbishment of Santa Isabel gymnasium</td>
<td>No match</td>
<td>No match</td>
<td>Match</td>
</tr>
</tbody>
</table>

Sources: Tables 5.5 and 5.6
In the sub case study of Santa Isabel we can “visualize” satisfaction in the principal diagonal. There are four coincidences between needs and the voted projects. The principal diagonal has relationship one to one between needs and voted projects. Other needs are also satisfied with some of the other voted projects. This means that a project is useful for more than one need, which shows also efficiency.

<table>
<thead>
<tr>
<th>Need – Voted Project</th>
<th>Lack of security</th>
<th>Lack of transport security and bicycles paths</th>
<th>Misuses of public spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Construction of cultural space in Pedro de Valdivia Plaza</td>
<td>No match</td>
<td>No match</td>
<td>Match</td>
</tr>
<tr>
<td>2. Enhance side walk paths</td>
<td>Match</td>
<td>Match</td>
<td>Match</td>
</tr>
<tr>
<td>3. Construction of bike paths in Pedro de Valdivia Ave.</td>
<td>No match</td>
<td>Match</td>
<td>Match</td>
</tr>
</tbody>
</table>

Sources: Tables 5.5 and 5.6

In unidad vecinal Pocuro the total matches are 6. Although the most voted project does not match the most important need of the area, the voted projects fit quite well in the preferences of citizens, mainly along the principal diagonal.

Finally, Pedro de Valdivia Norte shows the following situation regarding the e – consultation:

<table>
<thead>
<tr>
<th>Need – Voted Project</th>
<th>Lack of security</th>
<th>Failure in regulations on transport security</th>
<th>Misuses of public spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Enhance side walk paths lighting in Pedro de Valdivia Norte</td>
<td>No match</td>
<td>Match</td>
<td>No match</td>
</tr>
<tr>
<td>2. Construction of bike paths in Conquistadores Ave.</td>
<td>No match</td>
<td>No match</td>
<td>Match</td>
</tr>
<tr>
<td>3. Construction of concert auditorium in the Metropolitan Park</td>
<td>No match</td>
<td>No match</td>
<td>Match</td>
</tr>
</tbody>
</table>

Sources: Tables 5.5 and 5.6

This unidad vecinal seems to be the most “conflicted” of all. Only three needs are partially met with the voted projects. Only the third project “Construction of concert auditorium in the Metropolitan...
Park” meets the measured preferences. This warns us to define properly the needs behind when projects are formulated. It is noticeable that most of the projects are referred to the use of public space, when apparently the community is more concerned with security issues.

5.4. Conclusions

A general overview of this chapter suggests that in general citizen’s needs are satisfied with the outcome of the e-consultation. Inclusion, composed by access to internet and participation done using internet, is meager but more recent data are needed so as to arrive to a more accurate conclusion. However, when citizens are directly asked about their needs, e-consultations acquire a different perspective. This brings the important finding that the deliberation and processing of needs can indeed help to walk the talk about participation in urban development plans.
6. Conclusions and recommendations

6.1. Conclusions

ICT scholars like Richard Heeks (2002) argue that one third of e-governance experiences such as e-consultations fail, especially in developing countries. This observation is attributed to the fact that technology is scarce and administrative officers in governments are difficult to influence. In our case study this is not the case, indeed it is not yet time to assess if the e-consultation failed. Failures and successes are subjective concepts, in this regard. Actually, our research question addresses the question if the e-consultations really work, meaning that if they can deliver the purpose for which they were created.

The answer to our research title is: “Yes, but…” We will go further into the research structure essaying sharp answers to the research questions and providing insights about the “but” statement. Many of the insight to the “but” can be also found in the concluding paragraphs in each of the chapters. We will end with some recommendations for similar experiences in the future.

1. Which are the main characteristics and how do e-consultations work, especially in the Providencia experience?

The characteristics are that i) they are mediated by third parties, ii) they use internet in a deliberative and participative manner and iii) according to the available experiences they are still in its infancy. Specifically in the “Providencia Participa” experience, the e-consultation was i) mainly conducted by the municipal government, ii) deliberation of citizens was not included and, iii) according to this research, the formal outcome of the process satisfied the citizenry.

2. How to model the relationships of actors in the communal development plan?

This was done with the ANT approach, focusing in the understanding of the relationships and the incentives behind the actors. The main actor is the municipality and many intermediate actors play secondary roles. Citizens participation, compellingly one of the main actors, were considered basically in the latest stages of the process, basically for voting. Citizens satisfaction will the available choices needs to be developed further so their commitment with the formal outcome of the e-consultation is met.
3. Which are the most important issues considered by the actors of the communal development plan?

The most important issues, regarding the unidades vecinales level, were i) the lack of security in streets and in transport and ii) the need to provide a proper use of public space, especially for greenery and sports purposes.

4. How can we know the level of inclusion of citizens in the use of ICTs?

After defining the concept behind inclusion, we proposed an index compounded by the percentage of citizens connected to internet combined with the percentage of internet voting citizens. For a proper calculation of this index, we used geo information tools in combination with other sources such as the census.

5. How can we know if citizens are satisfied with the voted projects?

Eliciting information about their needs, organizing the needs according to preferences and finally comparing the results with the projects aimed to satisfy their needs.

A straight answer to the research questions is that although inclusion and deliberation in e – consultations needs to be stimulated, citizens are in general satisfied with the formal outcome of the e - consultation. Nevertheless, many initiatives from citizens are left out, discriminating the needs and preferences of minority groups. The richness of more inclusive approaches to understand citizen’s needs and preferences can help to motivate inclusion and formulate projects for urban development. Experiences of e -consultations are quite recent and only leading cases for other cities can be used for lessons. Policy makers should facilitate the development of methods of evaluation with accurate measures, such as indexes and standardized assessment tools. The “answer to the but” statement still relies heavily on the decision takers hands.

6.2. Recommendations

Although there are different ways to consult citizens about urban development plans, e – consultations seem to be a useful one. It is cumbersome to select the right model of e - consultation for the right environment.

- Deliberative stages are fundamental to assure a proper understanding of citizens needs. In an environment such as the Chilean, it is probably better to stimulate deliberation and raise compromise from citizenry. This could done in either an institutional framework or relying on the use of internet. The core of the challenge is to elicit and share in a balanced way preferences from citizenry, rather than influencing it.

- Many are skeptics about involving citizens to deliberate in e – consultations, mostly justified by political culture and environment. As the environment is a dynamic entity by definition, policy makers should get closer to citizens and not the way around. Trusting
citizen’s ability to represent its own views in an informed fashion can also provide effective outcomes for urban development plans.

- In order to build trust and credibility, e–consultations should be conducted by neutral and balanced third parties. Mediation of ICTs, as with any other technology, is unavoidable and a transparent participation of a fair expert can provide effectiveness.

- Geo information tools can be a powerful instrument to elicit local needs. The strengthening of the wise use of this tool can bring understanding from parties with interest in space. Policy makers in Chile, and probably other developing countries, need to be advised to use o standardized indicators of topics such as inclusion and the processing of local needs to gain effectiveness in their policies.

- Governments should not use e-consultations for every spatial planning decision. On the contrary; e–consultations about the main problems can support and strengthen local governments if a committed citizenry is integrated to the decision process beforehand.

- Feed backing citizens and providing evidence about the decisions taken is a responsible and necessary step to build confidence in decision making processes.

Finally, if a proper tool, such as internet grants access and the design of the e–consultation process assures participation, necessary conditions are met. It shouldn’t be taken for granted that satisfaction comes exclusively from inclusion, i.e. access and participation. Satisfaction can be met after necessary conditions are fulfilled. Bottom up approaches can help to include more citizens. They also are useful to understand citizen’s needs more closely.
## 7. Appendix 1

### Table: Consulting Response Analysis

<table>
<thead>
<tr>
<th>Opinion Pool</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>1. Do you live in the area? If yes, then name?</td>
<td></td>
</tr>
<tr>
<td>2. Do you regularly use public transportation?</td>
<td></td>
</tr>
<tr>
<td>3. What is your opinion on the current urban development plan?</td>
<td></td>
</tr>
<tr>
<td>4. What is your opinion on the future urban development plan?</td>
<td></td>
</tr>
<tr>
<td>5. Have you seen the Citizen Consultation Plan?</td>
<td></td>
</tr>
<tr>
<td>6. If yes, what is your opinion?</td>
<td></td>
</tr>
<tr>
<td>7. Would you vote for this plan?</td>
<td></td>
</tr>
<tr>
<td>8. Would you vote against this plan?</td>
<td></td>
</tr>
</tbody>
</table>

### Questions/Problems

1. If you had the opportunity to participate in the project, how would you rate the current plan? (on a scale of 1-10)
2. What are the biggest challenges facing urban development in your area?
3. How do you think the current plan will address these challenges?
4. What are some potential improvements to the current plan?

<table>
<thead>
<tr>
<th>High Benefit</th>
<th>Low Cost Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>13</td>
</tr>
<tr>
<td>15</td>
<td>41</td>
</tr>
</tbody>
</table>

### Elamine Security

- Immunity factors
  - Migrant regularization
  - Incidence of crime and violence
  - Access to public services
  - Recurrent transport issues
  - Unemployment and underemployment
  - Incidence of crime and violence
  - Migrant regularization
  - Access to public services

- Other (What) Source

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Can e-consultations meet citizen's satisfaction in urban development plans?  

Case Study: Providencia, Chile

### Opinion Poll

| Question                                                                 |  
|------------------------------------------------------------------------|---|
| If you live in the area limited by the above map, did you use e-consultations? (Please mark if you did or did not use e-consultations.) | A  |
| If you regularly work in the area limited by the above map, (Please mark if you did or did not use e-consultations.) | B  |
| 1. Which institutions did you use in the area limited by the above map? (Please mark if you did or did not use e-consultations.) |  
| 2. Have you heard about the Digital Consultation Provincia de Santiago? | C  |
| 3. Did you vote? (Yes/no) | D  |
| a) Chile's Ministry of Communications | E  |
| b) LOCAL GOVERNMENT | F  |

### Questions/Programa

1. Which is the most important problem in your city that needs to be solved? (Please mark if you did or did not use e-consultations.)
2. How do you rate the effectiveness of the government in solving these problems? (Please mark if you did or did not use e-consultations.)
3. What is the most important problem in your city that needs to be solved? (Please mark if you did or did not use e-consultations.)
4. How do you rate the effectiveness of the government in solving these problems? (Please mark if you did or did not use e-consultations.)

### High Priority

- Security
- Transport
- Education
- Infrastructure
- Environment
- Health
- Housing
- Economy
- Social Services
- Cultural

### Balance

- High Priority
- Low Priority
- Unknown

### Satisfaction

- Security
- Transport
- Education
- Infrastructure
- Environment
- Health
- Housing
- Economy
- Social Services
- Cultural

### Additional Information

- Number of respondents: 41
- Response rate: 100%

**Note:** The data provided is a summary of a survey conducted in Providencia, Chile, to assess the satisfaction of citizens with urban development plans and the effectiveness of e-consultations in meeting their needs. The questions are designed to gather information on various aspects of urban planning, including security, transport, education, infrastructure, health, housing, economy, social services, culture, and satisfaction levels. The responses are categorized into high priority, low priority, and unknown, allowing for a detailed analysis of the most pressing issues facing the community. The balance of satisfaction with urban development plans is also assessed to determine areas that need improvement. The survey was conducted to evaluate the impact of e-consultations on citizen satisfaction and to identify areas for potential improvement in future urban development initiatives.
### Opinion Poll

**Institute of Public Information (ICT), National University of Vina del Mar, Chile**

**Case Study: Providencia, Chile**

**Profile / Análisis**

<table>
<thead>
<tr>
<th>Question</th>
<th>Option A</th>
<th>Option B</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Do you live in the sector limited by the above area?</td>
<td>5</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>1.2 Do you regularly move in the sector limited by the above area?</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.3 Do you feel that the development is limited?</td>
<td>12</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>2. Have you heard about the Digital Consultation Procedure?</td>
<td>10</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>3. Did you vote?</td>
<td>2</td>
<td>10</td>
<td>12</td>
</tr>
</tbody>
</table>

**Questions / Preguntas**

1. Do you think the ongoing project improve the public illumination in the sector of Vina del Mar? (You can say yes or no, you can choose two options)
2. Do you feel that the development is limited? (You can choose two options)
3. Have you heard about the Digital Consultation Procedure? (You can choose two options)
4. Did you vote? (You can choose two options)

**Ratings / Calificaciones**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of security (injuria in agrupación)</td>
<td>5</td>
</tr>
<tr>
<td>Decrease in public spaces</td>
<td>3</td>
</tr>
<tr>
<td>Increase in public spaces</td>
<td>27</td>
</tr>
<tr>
<td>Lack of public spaces</td>
<td>3</td>
</tr>
<tr>
<td>Decrease in public spaces</td>
<td>6</td>
</tr>
<tr>
<td>Increase in public spaces</td>
<td>3</td>
</tr>
</tbody>
</table>

**Note de Vina del Mar**

- Lack of security: 5
- Lack of public spaces: 3
- Increase in public spaces: 27
- Decrease in public spaces: 3
- Increase in public spaces: 3
- Other: 4
Can e – consultations meet citizen’s satisfaction in urban development plans?

Case Study: Providencia, Chile

References


Can e-consultations meet citizen’s satisfaction in urban development plans?

Case Study: Providencia, Chile


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Regional Framework Operation Hanse Passage (2002). e -participation project database http://www.eparticipation.info/ (cited on 28/12/06)


Can e-consultations meet citizen’s satisfaction in urban development plans?

Case Study: Providencia, Chile