Prerequisites for a Sustainable and Democratic Application of ICT (T7)

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Abstract

The paper is based on the assumption that the use of Internet and Communication Technologies (ICT) in government has the potential to increase citizen participation leading to greater transparency and more democratic decision-making. More democracy can lead to better governmental processes and more sustainable outcomes, which in turn influences the development of ICT towards a more sustainable knowledge-based society, a strategic EU objective to be implemented by 2010.
However, as ICTs are simply means to an end, the development of an equitable, functional and participative decision-making structure based on ICT has to address a variety of aspects. Consideration needs to be given to socio-cultural aspects, such as equal and easy access to ICT and the competence and motivation to use it, and institutional aspects, such as the necessity to reform governmental processes to foster citizen participation.
Within the scope of the eCommunity project in Narva, Estonia we researched conditions that enable a successful application of ICT in government. In this paper we present a conceptual framework for the development of participatory Internet tools and use lessons learned from case studies and related research to develop a broad set of prerequisites and resulting initial recommendations for a successful implementation.

1. Introduction

European Governments and the EU have started to use new information and communication technologies to revive the political sphere, which ideally would be characterized primarily by deliberative discussions on issues of common concern. Since the ratification of the Treaty of Maastricht in 1992 it has become evident that there is a fundamental deficiency of democratic principles within the European Union. The standard view of the European democratic deficit interprets this as a mixture of the institutional inadequacies of the EU when judged by standard liberal democratic criteria of accountability and responsiveness, and the absence of a substantial feeling of solidarity and community between the different peoples of the member states. Against this background, new technologies are perceived as tool for diminishing these deficits, as new spaces for participation and deliberation, since they enable digital communication and extend our understanding of civic engagement and planning processes.
E-government strategies have the potential to contribute to the EU goal of increased openness and transparency at all stages of decision-making, for example through the provision of up-to-date, on-line information. Building on the presumption that providing citizens with access to resources for participation will increase the influence of participatory processes on policy making procedures, governments can adopt “knowledge management” to become learning organizations that both import and export their knowledge in pursuit of their public mission. And, as an important answer to the above-mentioned deficits that are inherent to representative democracies, the use of ICT *can* enhance the quality of participation.

The content of this paper is based on research conducted within the context of the "e-community" project in Narva, an ongoing project within the EU-LIFE Program. The aim of "e-community" is to promote sustainable and democratic urban planning by using opportunities offered by information technology and the World Wide Web.
For this paper we extracted research findings that are relevant for the ongoing process of ensuring democratic, participative and meaningful access to and use of information and communication technologies.

2. e-government and e-democracy

e-government is broadly defined as the use of information and communication technologies (ICTs) to improve the activities of public sector organizations. It can take place in intra-governmental processes, processes between governments and other public or private organizations as well as interactions between governments and the citizens they represent and serve (eGovernment for Development, 2003). The term e-democracy relates primarily to the latter and is defined as "harnessing Information and Communication Technologies to enhance democratic processes and empower citizens" (Development Gateway, 2003).

For the purpose of this paper e-government will be used primarily to refer to the electronic relationship between government and its citizens to describe the range of applications from provision of information to democratic decision-making through online voting.

At present, e-government services can be categorized as follows with regards to the participation levels they represent:

- Passive information dissemination & provision of downloads (forms, etc.)
    - Content is entirely informational
    - Information flow is one-directional (government to citizen)
- Interaction between citizens and government through online forms, e-mail, forum, suggestion box, online polls, ordering capability, etc.
    - Transactional, for example filing taxes online
    - Information exchange
- Active citizen participation: channelled feedback in a variety of forms (through maps, e-mails, forum, online voting) that include a dialogue between the city and its citizens and fosters democratic principles (empowerment, involvement).
    - Participatory
    - Empowering

e-government and sustainability

The concept of sustainability is based on the interplay between several, sometimes conflicting aspects: environmental/ecological, equity (social justice, socio-cultural) and economic aspects. Increasingly, cultural aspects are included in the definition of sustainability and in roadmaps to achieving it. (European Commission, 2002) How does e-government and e-participation fit into the context of sustainability?

The introduction of e-government applications in general and e-participation in particular can impact sustainable development in two distinct ways: it can directly impact social and economic sustainability and at the same time constitute a tool to influence public knowledge and opinion about environmental sustainability. A potential for directly impacting environmental sustainability exists as well, if the availability of online services were to

decrease the number of motor vehicle trips taken, thus reducing traffic congestion and air pollution, and through a long-term move toward more resource-efficient production and consumption and an increasingly knowledge-based, less material economy.

According to INTELCITY (2002/03) the use of ICTs in e-government applications opens up opportunities for spreading knowledge, fostering cultural cooperation on a global level, facilitating access to markets, and pursuing more resource-efficient production and consumption. Important risks to be considered are related to security and protection of privacy.

Like any other type of technology, information and communications technologies (ICTs) are not a panacea to current problems, but have to be regarded as tools that have the potential to further or hinder the move toward a more sustainable and equitable society. In order to channel the effects of new technologies toward sustainability, administrators and politicians need to create corresponding political, legal and economic environments and frameworks. Potential barriers to ICT access, whether economic, socio-cultural or technological, need to be addressed to avoid creating or widening a digital gap and to take advantage of the opportunities ICT offers to narrow social and economic inequalities instead.

3. Participation

Participatory approaches have a long history in the resolution of complex social problems. Participation has been an element of anti-poverty and community development strategies since the UN decade of Development in the 1950s (Warburton 2002). Arnstein proposed a hierarchy of levels of participation, each associated with a different objective and implying a different role for participants.

Level 1	Manipulation	These levels assume a passive audience, which is given information that may be partial or constructed.
Level 2	Education	
Level 3	Information	People are told what is going to happen, is happening or has happened.
Level 4	Consultation	People are given a voice, but no power to ensure their views are heeded.
Level 5	Involvement	Peoples' views have some influence, but traditional power holders still make the decisions.
Level 6	Partnership	People can begin to negotiate with traditional power holders, including agreeing roles, responsibilities and levels of control.
Level 7	Delegated power	Some power is delegated.
Level 8	Citizen control	Full delegation of all decision-making and action.

Table 1: (AIRP-SD Project, 2002)

In order to reach the project goals and the principles of sustainable development, the participation level after Arnstein should not be less than level 6. As this is finally a political

decision, ICTs can only support by creating a good communication structure between all user groups.

Achieving high levels of participation requires a thorough stakeholder analysis, individualized approaches to reaching out to identified stakeholders and political commitment to the process. The steps below outline strategies for a successful participatory process:

- Participation has to be a gradually developed response to an actual and pressing collective need of the citizens. This is, in fact, needed as a rallying point for the community to come together.
- The benefiting target group of a participative action has to be clearly defined, in order to utilise the common interest and awareness in securing their position and improving their current conditions.
- It is of critical importance to inform the selected target groups, in a comprehensive manner, of all the relevant features of the programme or project for which participation is being sought.
- In order that communication links between the authorities and the target group be maintained, there should be a strong community organization within the neighbourhood, which could also seek the assistance of an external organization for information and motivation.
- A smoothly functioning citizen's organization structure ideally evolves through the collective efforts of the residents, with the aid of an accepted local leader. This is critical in representing the aspirations of the residents.

The local leader and other members should be trained in and made aware of the urban management process. Management is an important tool for reaching the desired aim of a collaborative project, for example, of monitoring and evaluation, or making responsible decisions in financial matters. Internet-based information technologies can be a helpful tool to support this form of communication and interaction, leading to a better and more integrated democratic decision-making process. Benefits of using Internet tools for participation purposes include low-cost dissemination of large volumes of information to a wide number of recipients, space and time independent presentation of information that is easily accessed and updated, and the ability to use a variety of formats to display the information. Commonly cited challenges to widespread implementation are technological shortcomings, such as inadequate bandwidth and limitations of web programming languages, limited access to computer hardware, software and Internet access as well as resistance of local governments and citizens to embrace computer and online technology.

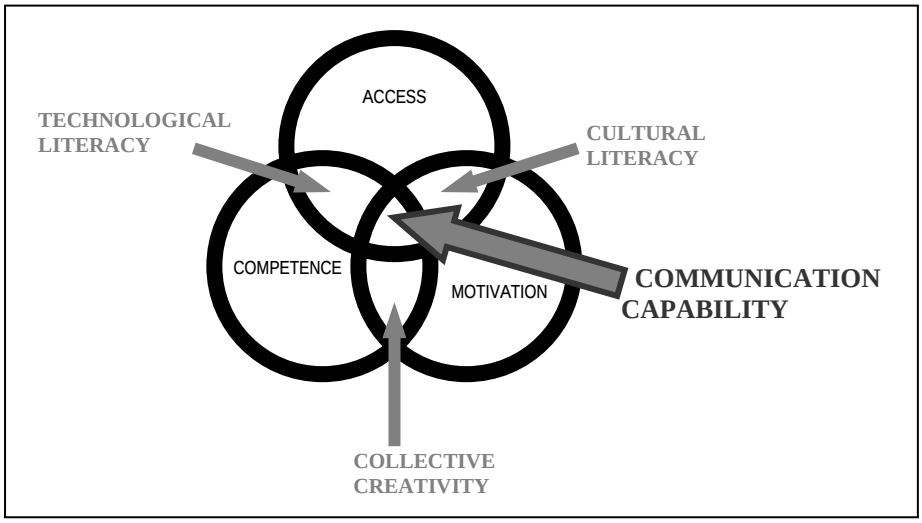
But it has been widely argued that the above problems and shortcomings are temporary and transient because computer and Internet technologies are constantly evolving, making it increasingly faster, easier, cheaper and more convenient to access the Internet.

The Internet’s most dominant advantage is its function as a decentralized communication system. It is virtually impossible to control or monopolize. For enhancing dialogue between government officials and the general public, the Internet is an optimal tool. As such it can serve as an important ingredient in the building of participatory democracy.

4. Communication Capability as a Basis for Internet-based Participation

An important challenge for the success of a participatory Internet tool is the creation of an environment that allows for and fosters a technology-driven democratic and participative decision making structure. The first step toward that goal is the creation of an ideal digital communication capability.

Digital communication capability can be seen as a mixture of easy and convenient access to all relevant information, adequate competence to receive, process and respond to information as well as motivation to consciously use it for different aims. In order for citizens to actively participate in communicational exchange, each of the components is necessary. The relationship between these different parameters is illustrated in the graphic below (Marsh, 2002).



Graphic 1: Digital communication capability

This suggests that a narrow focus on one or two of the components, as currently displayed in EU policies addressing access and competence, is not enough to create a communication capability that allows for increased citizen participation.

Access

By providing citizens access to necessary resources for participation and the development of procedures, which can strengthen the impact of participation processes on policy making, governments can become learning organisations that both import and export their knowledge in pursuit of their public mission.

Competence

Competence refers on one hand to the citizens' ability to use technology to communicate information and on the other hand to their ability to understand and process it. Thus, the promotion of technological literacy is paramount.

Motivation

Motivation to do something, in this case, to participate in the urban political process, is only possible, if the process and its subject matters are perceived as relevant to the life of the user. Equally important is the users' believe that her/his contribution will be taken into account and followed up on during the decision making process. Relevance of both the topic to the user's everyday life and her/his contribution to the process is a key ingredient to motivation.

Nevertheless there will always remain a number of people who will not be able to communicate in a digital way, due to a lack of motivation, competence or access. Implementing ICTs in order to enhance participatory processes should do exactly that: enhance and complement, not replace existing outreach methods and opportunities for participation, such as public meetings and the use of local mass media to disseminate information. As the ultimate goal is not the implementation and use of new technologies, but an overall increase in citizens' options to participate in democratic processes, it is of utmost importance that e-government strategies - and the tools used to implement them - are regarded as one of many integral approaches to building a comprehensive participatory process.

5. E-government case studies

To illustrate the points made above, the following section will focus on how award-winning and cutting-edge projects in Europe have approached the planning and implementation of e-government initiatives and on the lessons they learned during the process. The cases were selected to represent a variety of e-government applications and were chosen from a list of projects nominated or chosen as winners for high-level awards in order to ensure that the lessons learned extracted from them would indeed constitute meaningful steps toward success.

The three case studies focus on different pieces of or approaches to e-government. Bremen Online Services (BOS), one of the 2003 eEurope award winners, concentrates on the provision of secure transactions with public and private organizations through one portal. The Geneva e-voting case describes lessons learned from one of the first legal Internet vote in the world, and the Esslingen case focuses on technologies to achieve broad citizen participation within the context of an urban planning project. As visible from glancing at the 65 e-government projects that reached the second round in the eEurope awards in 2003, e-government can encompass a wide variety of activities. While pointing towards lessons learned and best practices, the case studies in this paper show that an e-government project invariably has to be very specific to the respective country, the level of government and to the goals hoped to be achieved by its implementation.

5.1 Bremen Online Service

Award Winner: The role of eGovernment for European competitiveness (eEurope Award)
Award Winner: 1999 Media@Komm national multimedia competition

Overview
Bremen Online Service aims to develop an integrated approach to e-government and e-commerce by offering online transactions and payment in a secure way. The project is based on a public private partnership between the City of Bremen and the private sector. Bremen Online Services Entwicklungs- und Betriebsgesellschaft, a GmbH&Co KG, where the city contributes 51% and the private partners contribute 49%, was founded to oversee and manage the project and facilitate cooperation between public and private entities. The major benefits resulting from this mutually beneficial approach are an increased range of offered services

through a single user interface, a wider variety of financial sources to fund the project, and a more integrative approach to developing a complex IT project.

At last count, Bremen Online Service was working with more than 50 external partners to offer over one hundred services to citizens, ranging from address changes and filing taxes to purchasing newspaper subscriptions or donating money to charity. In some municipal offices, the majority of transactions are now conducted online leading to significant cost savings.

A project of this magnitude and complexity requires significant administrative, political and financial support. Since 2001, Bremen's government includes a Department for New Media/e-Government situated in the department of Personnel and Administration. Overall project management is handled by BOS, which coordinates municipal participants and external partners.

The BOS e-government project offers the opportunity to develop new way of service delivery enabling long-term cost and time saving for all parties. The main challenge it presents is that it requires a large investment since infrastructure, access and applications have to be developed simultaneously. Integral factors that need to be addressed during the process include: Management, Political Support, Project Organization, Integration, Basic Services and Infrastructure, Security, Financing. The following success factors have been identified: Strategy/Vision, Organization/Change Management, Applications, Benefits & Costs, Technology, Qualification, Acceptance/Marketing, Cooperation, Resources, Legality.

Kubicek and Hagen (2001) point towards three principles derived from Bremen Online Services experience:

- "Electronic transactions must be more useful or less laborious than the present method of personal appearance, phoning or writing a letter"

- A common platform for public and private services is necessary to minimise unavoidable "additional burdens like special technical equipment, new skills, costs and changes of habits"

- "It is important to gather a critical mass of users in a limited period of time. This requires a strategic selection of attractive application bundles, an effective marketing and a professional moderation of the varied cooperation processes."

In addition they emphasize that a requirement for all e-government projects is to guarantee wide accessibility, to provide technical and non-technical options (multi-channel delivery) to avoid unacceptable service gaps for parts of the population due to the existing 'digital divide'.

Best practices

Relevance

- Organize services and applications around everyday situations, such as living & moving, mobility, finances & taxes and others to offer maximum benefit to the user.
- Integrate new online services into existing service structures to increase adoption levels and ease of use, decrease resistance to change and ensure that they complement each other.

Access and Training

- Enable free and easy to find access points (libraries, youth and community centres, internet cafes, banks, schools)
- Offer sufficient training opportunities for government employees and other users. In Bremen seminars were offered and employees and future users participated actively in the planning, design and implementation phases of e-government services. In addition, management showed an unusual progressiveness and motivation to support technology and the resulting changes.

Political and economic feasibility

- Garner sufficient political support to ensure the financial, political and social sustainability of the project. Bremen's financial senator Perschau has been a strong supporter and evangelist of e-government. He has represented his project locally, nationally and internationally and maintains strong ties with other e-government projects.
- Ensure long-term financial sustainability of the project (detailed plans for future funding sources, business plans to afford independence from EU or other project specific, temporary funding sources).
- Tie e-government projects to related initiatives within public administration. This increases financial feasibility, avoids duplication of efforts and allows for a more integrated approach to change management.

Technical

- Ensure compatibility of technology infrastructure (work with other e-government initiatives nationally & internationally towards standards) to allow for easy expansion, entry of new partners (industry, technology and government partners) and compatibility with existing and emerging technologies (smart card, digital signature, online banking technology, etc.)

Legal

- Investigate whether changes to the legal framework are necessary

During a presentation about digital information and services offered through E-government Bremen Gisela Schwellach (2001) mentions additional considerations: the need for quality design of technology to fulfil high user expectations; the fact that Internet and web services are tools and value is derived from content, transactional and communication capabilities; and the need for changing processes and procedures as well as new approaches to personnel and project management within government agencies.

5.2 E-voting Geneva

Nominee: eEurope Award 2003

Overview

Many local and national governments are offering information and to a certain extent interactive services to their constituents. However, e-voting and other forms of citizen participation are still in its infancy in European countries and most of the world. Supporters list a wide range of potential benefits, including increased voter turnout and more transparency leading to more democratic governments. Critics point towards inadequate

security and the lack of social and political structures that will enable a widespread implementation of e-voting across European countries. The European Union is sponsoring a variety of research projects and honours exemplary case studies with the eEurope award every year. This case study focuses on the e-voting pilot project in Geneva, one of the candidates for the 2003 eEurope Best Practices award. The election in January 2003 was one of the first legally binding Internet votes in Europe and globally.

The pilot project turned out to be a success. During the 2-week election period 44% of the population cast its vote via the Internet. By comparison, 50% of the population mailed in their ballot and 6% voted in person at a polling place. Internet voting was able to take over almost half of the votes formerly cast by mail.

The conditions for electronic voting are favourable in Switzerland - Swiss citizens vote on ballot initiatives on average 6 times a year and are always looking for less time consuming, efficient ways to cast their vote. Internet voting is seen as an evolution of postal voting, which since introduced in 1993 has reached 95% of voters. Additionally, 52% of the population has Internet access, either at work or at home. Results from the first e-vote in January of 2003 showed that 22% of Internet voters were not regular voters. Whether this high turn out of infrequent voters can be attributed to the ease of Internet voting or simply to the novelty factor and curiosity remains to be seen. Negating any thoughts on possible generational gaps, the surveys conducted show that the older the voters, the higher their confidence in e-voting (69% of 60+ year olds stated they were very confident as opposed to 28% of 18 – 24 year olds). In general voters were satisfied, 62% of e-voters stated they will always use Internet voting – if available – in the future and an additional 24% will often use it. (Chancellerie d'Etat, 2003)

Security is ensured through a more rigorous verification system than in postal voting. Voters have to enter a voter registration number they receive by mail three weeks before voting starts. In addition, they are required to proof their identity by submitting their birth date and place of birth.

Best Practices

Access and Adoption

- Cultural factors are very important: direct democracy and strong participation in postal voting facilitated e-voting
    - Support was strong from the start due to these factors
    - Actual use of the system increased support in test case
    - 52% of population has internet access
- Increased and easier access to voting for citizens living abroad and less mobile citizens with disabilities.
- Education, awareness, demonstration is necessary: Geneva project had a demonstration site on which voters could try out the process. Raises comfort level of users.

Technical/System Development/Security

- System was developed in-house to avoid dependency on large commercial interests
- Security is paramount in voting

    - Protection against identity fraught (voter card, required info re. birth date & place etc.). Protection of secret ballot through storage of ballot and voter identity in separate files.
    - Protection against hackers (robust system security, encryption)
    - Protection against abuse at political level (ballot box can only be opened with 2 keys held by different political parties)
- Need for constant updating and improving of IT infrastructure and processes in order to keep up with IT development and avoid IT threats.
    - Application development cost $1.35 million alone
- Social and legal contexts need to be taken into account during application development and implementation

5.3 Esslingen Citizen Participation

1999 Award winner MEDIA@Komm national multimedia competition

Overview
In the planning process around a highly controversial rezoning of an agricultural area for residential use, the city of Esslingen used internet-based tools as one form of citizen participation before carrying out a formal, legally regulated, planning process. 22 citizens participated in this pilot study with a total of 121 entries, which city officials summarized and presented to the decision-making body. In the future, the city would like to integrate online citizen participation into its standard planning procedure. The goal is not only to improve the outcome, but also the process itself by enabling participation of a larger audience.

The main components of the online tool are citizen information and citizen participation. Citizen information includes the following:

- Online availability of planning documents for download (land use and urban design plans, financials, environmental aspects, etc.)
- Background information about the planning area
- Information about the planning process to date (including prior citizen participation & opinions)
- Links to citizen groups and task forces

The citizen participation component consists of a moderated online discussion forum, in which users can voice their opinion and receive feedback from the city as well as communicate with each other.

The team also managed to integrate employee participation from the very beginning of the project. On a regular basis, employees were consulted with regards to internal development priorities. Task forces meet regularly to discuss progress and are open to all employees. An employee task force has also been involved in developing training and qualification concepts for the staff. Finally, municipal employees have been participating in public relation, educational events and workshops involving the general public.

Best Practices

Trust

- Citizens must have trust that their opinion is heard and acted upon
    - An online tool cannot remedy or replace an inadequate offline citizen participation process

Relevance

- Online participation must take place in the context of a larger planning process
    - It has the potential to reach a larger number of people, but not everyone has access to or prefers to communicate via online tools
    - Information should be disseminated through all available channels (traditional town hall meetings, phone, fax, media)
- Information and discussion topics must be presented in such a way that it highlights the relevance to the citizens' daily lives
- Level of contribution to the overall planning process must be clearly described

Processes and procedures

- Standard processes and procedures must be adjusted to allow for wider citizen participation via online tools
    - Probably prolongs the planning process
    - Might require more staffing (in case of Esslingen, moderation took place around the clock for 2 weeks, very time and cost intensive)
    - Need to process a large amount of data in a satisfactory and time sensitive manner

Visibility/Publicity

- Online participation only works when people participate!
    - Need for marketing/publicity/promotion
    - Active participation of expert community and city planning department
    - Active participation of decision makers (politicians)
    - Support of media (newspaper)

Discussion forum and its moderation

- Relevant questions to spur discussion
- Timely and personal feedback
- Encourage feedback about the online participation tool in addition to soliciting feedback about the subject matter
- "Paper trail" of feedback is an important feature

Employee Participation

- Involve employees, especially those who will be directly affected by changes in processes, procedures and their daily tasks

A similar pilot project allowing for online discussion forums with respect to specific urban planning related issues in Horn-Lehe (Bremen) performed in 2001, yielded comparable results and lessons learned.

6. Implications and Recommendations

The three case studies offer a variety of lessons learned: some offer solutions to very project-specific problems, while a surprising number point towards recurring themes and issues that are universally applicable to the development of participatory e-government services and tools. The matrix in appendix A summarizes challenges and issues encountered and recommendations on how to deal with them.

Three major themes recur across the case studies as prerequisites for success: access, trust and the capacity for institutional change. Addressing these issues will be an important challenge and a necessity in implementing a functional and truly participatory online tool. It should be mentioned that the best practices compiled for this paper by no means constitute a complete list but rather a starting point for any governmental institution aiming to incorporate e-government services into its public participation processes. The framework presented intends to portray the context in which the development, implementation and operation of Internet tools for e-government purposes takes place.

See Appendix A for Best Practices Matrix

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Appendix A

Aspects	Issues	Recommendations	Examples
Technical	Technology obsolescence	Plan and budget for periodic system upgrades and expansions and staff training	
	Old processes don't support egovernment/eparticipation	Be prepared to re-engineer business processes and procedures and involve employees and end users who will be using the system for best results	
	Privacy/Security	Ensure best possible security and privacy of data	Strong privacy policy, legal recourse for citizens
	Access for minorities (language, disabled access)	Design web portal according to latest accessibility standards and offer content several appropriate languages	
	Need for interoperability (present & future)	Develop an open system and plan for interoperability from the start	Plan for use by devices other than PCs (PDAs, cell phones). Since cell phone use is more prevalent than internet use, this could be a crucial factor for success
	New process must be more efficient & easier to use than old	Involve all types of users in the system design and development process and allow for extensive usability testing	
		Offer widespread access and training to manage change	
Social	Need for increased education & promotion to raise awareness and ensure access, especially for minorities	Plan and budget for IT education to provide access for all.	Offer free classes to qualifying low-income groups (work with existing educational institutions (schools and universities, adu education, corporate education)
		Integrate the planning tool into a comprehensive web portal that fulfills the user's needs in many different areas and becomes the first place to look for information.	
		Promote tool off-line	Through information sessions (schools, libraries, companies, clubs and other groups), traditional media advertising campaign, direct mail and e-mail campaign, demonstrations & trainings
		Overcome social and cultural barriers to access and participation by specifical targeting and catering to citizen groups that are not using the Internet	In order to overcome barriers to Internet use, web site should be in several appropriate languages and designed according t latest disabled accessibility standards. Develop targeted integrated campaigns toward certain groups (blue collar workers, older c
	Need for wide-spread Internet access	Create free access points	Offer free access points in libraries, schools, banks, post office municipality offices, social service organizations, etc.
	Need for customer centric approach	Involve users in the design and development process	
	Citizens need to trust governmen & process	Ensure that new processes are trustworthy and continuously work on gaining the citizens' trust.	Prove your trustworthiness with small demonstration projects and run awareness campaigns. View gaining trust as an ongoi process.
	Non-technical access must be maintained	Maintain or offer access and participation options that don't rely on technolog	Community meetings, direct mail information, outdoor advertising
	Content must be relevant, curren and "sticky"	Frequent site updates with new information, design the site with features that entice the user to come back	Updates, embed site into broader portal people will go to for information, news etc., offer incentives for participation
	Using ICT as means for increasing participation	Ensure relevance (see above), promote new tools, and prove that process is worthwhile	
	More transparency needed	Be prepared to make all decision-making processes public and share vital information and decision-making power with citizens	
Economic	High costs	Balance lower cost through increased efficiencies with higher cost due to infrastructure and organizational/management expenses.	
		Find a way to quantify and account for long-term savings and benefits (mater or not)	
	Funding needs to be available lon term	Build partnerships with private and public organizations, ensure sufficient funding ahead of time, maintain political support, be creative in finding fundin sources	
	Added expenses due to education and expanded internet access	View expenses as investment in country's future (work force development, IC infrastructure development) towards increased competitiveness in information society age	
Political	Good democratic basis & willingness to allow for government transparency	Technical tools can only enable, not transform political and participative processes. If necessary, push for reforms of bureaucratic structures in order t gain more transparency	
	Citizen trust in government and participatory planning process	If citizens do not trust the existing processes, reform and create transparent processes and continuously work on gaining the citizens' trust.	Prove your trustworthiness with small demonstration projects and run awareness campaigns. View gaining trust as an ongoi process.
		Ensure that information expresses different viewpoints	Link to outside resources & information and allow users to add their own
		Allow users to view and comment on other users' feedback	
		Clearly describe the process, the user's role in it and the time frame. Follow u with participants to communicate updates, clarify issues, etc.	
	Relevance of participation project	Clearly identify your target audience and make sure that their participation is relevant to their "world". Citizens will only participate if they perceive the proj to have an effect on their lives.	
		Offer sufficient educational content in those cases in which relevance might n be obvious (e.g. how might the project affect my life?). This is particularly important for higher level projects related to environmental/ecological issues.	
		Integrate the participation tool into a comprehensive web portal that fulfills th user's needs in many different areas and becomes the first place to look for information.	
		Ensure that citizens' input and feedback is treated as relevant to the planning process	
Organizational	High implementation costs, many departments and other organizations are needed to support changes	Build partnerships with third parties to gain access to additional funding sourc	
		Link projects to other initiatives to broaden funding possibilities	Link to projects in other departments or other initiatives, for example in order to secure EU funding
	Limited organizational capacity	Build partnerships with third parties	Partner with NGOs, private organizations, other governmental organizations
	Business processes must be re-engineered	Ensure sufficient political support first	
		Take advantage of opportunities to eliminate inefficiencies in order to streaml processes and procedures	
	Trained personnel is necessary	Involve staff in the process to achieve maximum cooperation and best possibl outcome	
		Prioritize employee training and ensure adequate technical support	
Legal	New processes might require lega modifications	Work with other municipalities on defining necessary legal modifications and lobbying for changes (copyright laws, legality of processes, electronic signatures, etc.)	

Table 2: Best practices