Evaluating e-Participation Projects and Lessons Learnt

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Abstract

Local, regional and national governments of many countries invest significant amounts of money in various types of e-participation projects, aiming to engage citizens in public policy-making and decision-making exploiting the information and communication technologies (ICT). However, they do not pay sufficient attention to evaluating these efforts, while a widely accepted methodology for this purpose is missing. This paper initially reviews the frameworks and methodologies that have been developed from previous research for the evaluation of information systems (IS), traditional off-line public participation and also e-participation. Then based on them a synthetic methodology has been developed for evaluating e-participation projects. Furthermore, an alternative simpler methodology is presented for the same purpose, in order to be used in cases of limited resources and big time pressure. Also, we present a methodology for conducting more focused evaluations of significant innovative components, such as the 'structured e-forum', which enables a more structured electronic discussion on a public policy or decision. Finally, the conclusions and lessons learnt are outlined.

1. Introduction

The high potential of modern information and communication technologies (ICT) for supporting citizens' engagement in the democratic processes of modern representative democracy has been for long time recognized by academics and practitioners (OECD 2001a, 2001b, 2003a, 2003b, 2004, 2005, 2009, Macintosh et al 2002, Timmers 2007). The high diffusion of ICT, and especially the Internet, which offer a new interactive, cheap, inclusive and unconstrained by time and distance environment for public political communication, and at the same time the trend towards more participation of citizens in the processes of public decision-making and policy-making, and in general towards the establishment of stronger relations between citizens and institutions of governance, have been the main drivers of the emergence and development of e-participation (Coleman & Gotze 2002). The most recent relevant report of OECD (2009) argues that ICT-supported public engagement of citizens can improve not only governments' "democratic performance" (=the degree to which government decision-making processes live up to democratic principles) but also their "policy performance" (=their ability to deliver tangible positive outcomes for the society) as well. For these reasons local, regional and national governments of many countries invest significant amounts of money in various types of e-participation projects, aiming to engage citizens in public policy-making and decision-making using ICT (OECD 2003a, 2004, 2009, Macintosh 2004, European Commission 2006, Timmers 2007); in this way they try to extend citizens public participation with the establishment of an additional effective channel of communication with civil society based on innovative usage of ICT for supporting open and transparent democratic processes.

However, it is widely accepted that despite the significant investments made in e-participation there has been limited attention to the systematic evaluation of these efforts. OECD (2004) concludes that 'There is a striking imbalance between the amount of time, money and energy that governments in OECD countries invest in engaging citizens and civil society in public decision-making and the amount of attention they pay to evaluating the effectiveness of such efforts'. OECD (2003a) calls for more activity in the area of e-participation evaluation arguing that 'As governments increasingly support the development of ICTs to enable citizen engagement on policy-related matters, there is a corresponding

need to know whether online engagement meets both citizens' and governments' objectives' since '...The benefits and impacts of applying technology in opening up the policy process to wider public input have yet to be evaluated and articulated'. More recently OECD (2009) based on surveys of its member countries draws similar conclusions and states that 'we have established rights, we have active citizens and a commitment to engage them in policy making but we face challenges of resources, time and a lack of evaluation'. At the same time Aichholzer and Westholm (2009) acknowledge that it is necessary to close the existing 'evaluation gap' in the area of e-participation by analyzing its processes and outcomes against predefined criteria.

Taking into account that e-participation is a relatively new approach, so its practices and processes have not reached high levels of maturity yet, it is necessary to evaluate it carefully, in order to understand it better, acquire more knowledge about it and identify both the advantages and benefits it offers, and also at the same time its disadvantages, shortcomings and problems. The evaluation of e-participation efforts and pilots is of critical importance for identifying successful e-participation practices, processes and systems, which are appropriate for achieving specific participation objectives in specific situations and contexts, and also for improving e-participation practices, processes and systems, and in general for achieving a higher maturity of it. The knowledge acquired through evaluation will be very useful for e-participation sponsors, organizers and participants.

However, a widely accepted practical methodology to be used by government organizations for evaluating e-participation projects, which would allow the evaluation of large numbers of e-participation efforts in a similar manner using the same criteria, and therefore the systematic generation of a significant amount of knowledge in this area, is missing. Such a methodology on one hand should provide rich information on various important aspects of e-participation, but on the other hand should not be too complicated, impractical and costly. This chapter initially reviews the frameworks and methodologies that have been developed from previous research for the practical evaluation of information systems (IS) (section 2), traditional off-line public participation (section 3) and also e-participation (section 4). Then based on them a synthetic methodology is developed for evaluating e-participation projects (section 5). Furthermore, another simpler methodology is presented for the same purpose, in order to be used in cases of limited resources and big time pressure (section 6). Also we present a methodology for conducting a more focused evaluation concerning a significant innovative part of several advanced e-participation projects, the 'structured e-forum', which enables a more structured electronic discussion on a public policy or decision (section 7). Finally lessons learnt and conclusions are outlined (section 8). We believe that this chapter, both the review of existing evaluation frameworks and methodologies and the ones we have synthetically developed, will be highly useful to e-participation practitioners (e.g. public servants dealing with such projects), and also to researchers and ICT and consulting firms active in the area of e-participation.

2. Information Systems Evaluation

Taking into account that e-participation is public participation based on IS, it is useful initially to review previous research on IS evaluation (discussed in current section) and public participation evaluation (discussed in section 3). Extensive research has been conducted in the last 30 years concerning the methodology of IS evaluation (Land 1976, Hirschheim & Smithson 1988, Farbey et al 1995, Smithson & Hirschheim 1998, Farbey et al 1999, Irani et al 2001, Irani 2002, Love et al 2005, Irani et al 2006, Irani et al 2008), motivated by the big IS investments being made by private and public organizations, which necessitate an investigation of the value they produce. This research has concluded that IS evaluation is characterised by a number of inherent difficulties and complexities:

i) The benefits and in general the value created by most categories of IS are complex and multidimensional, both tangible and intangible, so it is difficult to decide "what to measure" for the evaluation and "how".

ii) Different IS categories have quite different objectives and produce different types of benefits and value, so they require different kinds of "measurements" and evaluation methods. For this reason it is not possible to develop a generic "best IS evaluation method" suitable for all IS categories; so the optimal approach is to develop specialised IS evaluation frameworks for particular types and categories of IS reflecting, which can be customized and elaborated for each particular IS evaluation we have to perform.

iii) As IS usually affect multiple stakeholders (e.g. various levels of management, various groups of users, IS experts, project team, etc.), with different concerns, value systems and agendas, IS evaluation has to take into account all these different perspectives, and examine both the positive and the negative

impact of IS on each group of stakeholders.

There are many IS evaluation methods proposed by the relevant literature, which can be divided into two basic categories (Smithson & Hirschheim 1998). The first category consists of 'efficiency-oriented' methods, which have been influenced mainly by engineering approaches, and evaluate the performance of an IS with respect to some detailed specifications, being concerned mainly with the question 'is it doing things right?'. The second category consists of 'effectiveness-oriented' methods, which have been influenced mainly by management science approaches, and evaluate how much an IS supports the execution of business-level tasks or the achievement of business-level objectives, being concerned with the question 'is it doing the right things?' as well. Farbey et al (1999) provide a framework, named the 'benefits evaluation ladder', for classifying IS according to the method required for evaluating the benefits they offer. It consists of the following eight categories of IS, named 'ladder rungs': mandatory IS, automation IS, direct value added IS, management information and decision support systems (MIS - DSS), infrastructure IS, inter-organizational IS, strategic IS and business transformation enabling IS. Moving up the ladder the potential benefits increase, but at the same time increase the uncertainty of outcomes, the risk of failure and the difficulty-complexity of benefits evaluation. For each of the above rungs a different evaluation method is proposed: while in the lower rungs (e.g. for mandatory or automation IS) the evaluation is based on the precise quantification of benefits and costs, in the higher rungs (e.g. for strategic or business transformation enabling IS) the evaluation is mainly judgemental. Subsequent research literature in this area (Irani 2002, Love et al 2005, Irani et al 2006) emphasizes the need for IS evaluation methods specialized to specific types of IS, which take into account their particular objectives and characteristics.

Also, extensive research has been conducted on IS acceptance by users, regarding it as a major measure of IS value, and aiming to identify the characteristics and factors that affect the attitude towards using an IS, the intention to use it and finally the extent of its actual usage. It is based on the Technology Acceptance Model (TAM) and its various subsequent extensions (Davis 1989, Venkatesh and Davis 2000, Venkatesh et al 2003). According to the initial TAM the attitude towards using an IS, which finally determines the intention to use it and its actual use, is determined mainly by two characteristics of it: its perceived 'ease of use' and 'usefulness' (Davis 1989); each of these two factors can be elaborated into a detailed set of variables for each particular type of IS we want to study. Based on this framework extensive research has been conducted for understanding better and predicting user acceptance of various types of IS (e.g. see Schepers and Wetzels (2007), Hsiao and Yang (2010)).

At the same time considerable research has been conducted on IS success, leading to the development of IS success models; the most widely used of them is DeLone and McLean model of IS success (1992, 2003). It proposes seven IS success measures, which are structured in three layers: 'information quality', 'system quality' and 'service quality' (at the first layer), which affect 'user satisfaction' and also the 'actual use' of the IS (at the second level); finally these two variables determine the 'individual impact' and the 'organizational impact' of the IS. Seddon (1997) proposed a re-specification and extension of this model, which includes the 'perceived usefulness' instead of 'actual use'.

Therefore, based on the conclusions of this research stream, for evaluating e-participation projects it is necessary to include their 'efficiency' and 'effectiveness', both properly defined and adapted to the generic objectives of public participation and e-participation, and also to the particular objectives and characteristics of the e-participation project under evaluation. Also, it is necessary to examine the ease of use and the usefulness of the technological platforms and tools employed, focusing on information, system and service quality.

3. Public Participation Evaluation

Row and Frewer (2004) define public participation as 'the practice of consulting and involving members of the public in the agenda-setting, decision-making and policy forming activities of organizations or institutions responsible for policy development'; they view it as a move away from an 'elitist model', in which managers and experts are the basic source of regulations and public policies, to a new model, in which citizens have a more active role and voice. Participatory democracy attempts to give a solution in the so called "deficit of democracy" and the abstention and disengagement of citizens from politics. From several OECD studies (OECD 2001a, 2001b, 2004, 2005, 2009) it has been consistently stated that governments of many countries make considerable efforts in order to apply and realize the above ideas in practice, promote public participation and strengthen their relations with the citizens, regarding them as sound investments in better policy-making and as a core element of good

governance. For achieving these objectives governments use several mechanisms designed to inform, consult and involve those affected by particular decisions and public policies (Rowe and Frewer 2000); the most widely used of them are public hearings/inquiries, public opinion surveys, citizens' juries/panels, focus groups, citizen/public advisory committees, consensus conferences, negotiated rule making and referenda.

It has been recognized that the evaluation of public participation projects is important for all involved parties: the sponsors that initiate them, the organizers running them, the participants and also the uninvolved but affected public. For these reason there are many previous studies that report evaluations of public participation in various public policy domains (e.g. environment, transport, biotechnology, services for ageing population, etc.) using various criteria; comprehensive reviews of these studies are provided by Chess and Purcell (1999), Rowe and Frewer (2004) and Laurian and Shaw (2009). However, beyond the research world, in government practice limited evaluation of public participation projects is conducted. OECD (2005) identifies an 'evaluation gap' in the area of public participation and proposes various directions for this purpose; also, Laurian and Shaw (2009) more recently stated that 'Despite considerable attention given to public participation in planning practice and research, the field of participation evaluation lags behind'. Furthermore, although there have been some attempts for specifying complete sets of criteria for evaluating public participation, it is acknowledged that there are no established evaluation methods and criteria in this area (Rowe & Frewer 2000, 2004).

It is interesting and useful to review the most important of the public participation evaluation frameworks reported in the previous literature, as they include elements that can be useful for the development of e-participation evaluation frameworks and methods. Webler (1995) proposes a public participation evaluation framework consisting of criteria along two basic dimensions: 'fairness' (assessing to what extent it is perceived by the public as fair and democratic) and 'competence' (assessing to what extent the conclusions have been drawn in an effective manner). Petts (1995) evaluates community involvement and consensus building concerning waste management based on five criteria: impact on decision process, knowledge achieved compatibility with participants' objectives, representativeness and effectiveness of method and process. We should also mention the study of Coglianese (1997), which compares the negotiated rulemaking to the 'traditional' rulemaking process, using two criteria: i) the decreased time to develop regulations (calculating the number of days for completion of rules for negotiated rulemaking and traditionally derived rules) (i.e. an 'efficiency' measure) and ii) the reduction or elimination of subsequent judicial challenges (collecting data on litigation of negotiated and traditionally derived rules) (i.e. an 'effectiveness' measure).

It is worth describing in more detail the generic framework for evaluating public participation developed by Rowe and Frewer (2000) taking into account previous research in this area. It includes two categories of evaluation criteria: the 'acceptance' criteria, which are related to the public acceptance of the procedure, and 'process' criteria, which are related to the implementation and effectiveness of the procedure. The particular criteria of each category are:

I) Acceptance Criteria

- Criterion of representativeness (the public participants should comprise a broadly representative sample of the affected population).
- Criterion of independence (the participation process should be conducted in an independent and unbiased way).
- Criterion of early involvement (the public should be involved as early as possible in the process as soon as value judgments become salient).
- Criterion of influence (the output of the procedure should have a genuine impact on decisions and policy).
- Criterion of transparency (the participation process should be transparent, so that the public can see what is going on and how decisions are being made).

II) Process Criteria

- Criterion of resource accessibility (public participants should have access to the appropriate resources to enable them to successfully achieve their objectives (information resources, human resources, material resources and time resources)).
- Criterion of task definition (the nature and scope of the participation task should be clearly defined, so that there is no confusion or dispute concerning the scope of the participation, the expected output and the procedure).
- Criterion of structured decision making (the participation procedure should include appropriate mechanisms for structuring and displaying the decision-making process.
- Criterion of cost-effectiveness (the participation procedure should in some sense be cost-effective).

An improved version of the above public participation evaluation framework has been used by

Rowe, Marsch and Frewer (2004), for assessing 'process' and 'outcome' of citizens participation in a deliberative conference on sponsor's policy concerning radiation doses in food.

Laurian and Shaw (2009), based on previous literature on the goals of public participation, developed an evaluation framework that focuses on degree of achievement of three types of goals: 'process-based' (adopting a different perspective of process than the previously mentioned framework of Rowe and Frewer (2000)), 'outcome-based' and 'user-based' goals. In particular, the evaluation criteria it proposes per category are:

A) Process-based goals achievement criteria:

- Increase of public awareness about the issue under discussion, the stakes, and the decision-making processes.
- Increase of government agency awareness of public views, concerns, and preferences.
- Transparency concerning the decision-making process and the issue under discussion
- Inclusiveness, so that all stakeholders and views are given standing, expressed, heard, respected, and considered.
- Fairness (concerning ground rules, decision making, decisions and implementation) and power sharing (no dominating group -shared decision-making power)

B) Outcome-based goals achievement criteria:

- Meeting statutory requirements.
- Finding an acceptable solution and reaching consensus.
- Reaching a high quality decision that integrates broad knowledge base and public input.
- Increase of government agency legitimacy.
- Increase of legitimacy and acceptability of decision.
- Avoidance or mitigation of conflict.
- Facilitation of solution implementation.
- Building of institutional capacity to participate and act in the future.
- Building of social networks, mutual understanding among participants, trust and lasting relationships, social capital, sense of citizenship (among citizens and with administrators).
- Improvement of outcomes for the most disenfranchised groups.

C) User-based goals achievement criteria:

- Overall satisfaction of participants with process and outcomes.
- Degree of achievement of other goals defined by participants.

This stream of research on the evaluation of public participation has created significant foundations for evaluating public participation projects, both 'off-line' and 'on-line', and can provide useful evaluation dimensions and criteria.

4. e-Participation Evaluation

It is widely acknowledged that there are no established complete methodologies for the evaluation of e-participation (e.g. see (Whyte & Macintosh 2006, Rose and Sanford 2007, Saebo et all 2008). However, there are some frameworks suggesting dimensions and criteria that should be taken into account for evaluating e-participation; they are combining evaluation dimensions and criteria from previous research on public participation evaluation and on IS evaluation. In this section the most important of them are briefly reviewed.

Whyte & Macintosh (2003) proposed a framework for evaluating e-consultation from three perspectives: political, technical and social. In particular:

- The political evaluation is based on the following criteria: clarity concerning the e-consultation objectives, the roles and responsibilities of both the participating citizens and the competent government organizations, the extent of influence of participating citizens, the owners and the actors; also to what extent the targeted participant groups have actually participated, how accessible and understandable was the information provided to the participants before entering the e-consultation, and whether the e-consultation took place early enough in the policy lifecycle so that it can influence decisions; and finally adequacy of time, adequacy of financial, human and technical resources and extent of giving feedback to the participants during and after the e-consultation.

- The technical evaluation assesses whether the ICT system that has been used was easy-to-use and appropriate for the targeted participants groups; it is based on software usability and accessibility frameworks and its main criteria are: clarity, organization and consistency of screens, informative feedback, simple error handling, easy reversal of actions, appropriate language, user control of the pace of interaction, adequate shortcuts for the frequent users, accessibility by people with disabilities, etc.

- The social evaluation assesses to what extent the social practices and capabilities of the participants have affected the consultation outcomes.

The OECD (2003a, 2004) has developed a framework consisting of seven 'issues for the evaluation of online engagement', each of them having the form of a basic question further analysed into a number of sub-issues/sub-questions:

1. Was the e-consultation process conducted in line with best practice? (Ask stakeholders if they are satisfied with the process, assess whether adequate resources were in place to conduct the consultation, check whether process followed best practice guidelines, assess whether the choice of an online tool was appropriate for the consultation.).

2. Were the consultation objectives and what was expected of the citizens made clear? (ask stakeholders if they understand what is being asked, assess whether the participants' contributions were appropriate)

3. Did the consultation reach the target audience? (assess the adequacy of the promotion of the e-consultation, identify who and where potential participants are, in terms of demographic and geographic characteristics)

4. Was the information provided appropriate and relevant? (assess how easily the participants can access the information, assess whether the participants' contributions were informed by it)

5. Were the contributions informed and appropriate? (assess to what extent the contributions address the consultation issue, assess how easily the participants can access contributions from others, classify contributions according to whether they provide information, ask questions or make suggestions, assess to what depth contributions respond to other contributions)

6. Was feedback provided both during and after the consultation? (assess whether questions are answered by government during the consultation, assess the extent to which the government feedback relates to the contributions)

7. Was there an impact on policy content? (check to what extent a change of policy is possible given the stage in the decision-making the consultation occurred, assess to what extent contributions are reflected in the revised or newly formulated policy)

Henderson (2005) also provides an 'e-democracy evaluation framework', which consists of a set of key evaluation dimensions that address the issues of:

- Effectiveness (Do the initiatives deliver intended outcomes? To what extent are designated objectives met?)
- Equity (Is there equitable access to the benefits of the initiatives?)
- Quality (What is the level of user and stakeholder satisfaction? Are relevant benchmark standards met?)
- Efficiency (Do the initiatives provide value for money?)
- Appropriateness (Are the e-democracy initiatives appropriate for the particular context at this time? Do they provide a relevant response to identified needs and/or opportunities in this area?)
- Sustainability (Do the initiatives provide a durable and generalizable approach to achieving the desired outcomes?)
- Process (How can the current initiatives be enhanced to provide better outcomes?)

A framework for the evaluation of e-participation initiatives, focused mainly on local government, has been developed by Macintosh and Whyte (2006, 2008). It includes three evaluation perspectives: democratic, project and socio-technical. In particular:

I. The democratic perspective includes criteria associated with the effect of the initiative on the involved representative institutions (supporting, complementing and enhancing them, and not undermining them), the transparency of the decision making processes, the political equality and inclusiveness, the community control by the citizens, and on consensus building (among divergent views and opinions).

II. The project perspective concerns the extent of accomplishment of the aims and objectives of each particular e-participation initiative, as set by its project management team. Criteria of this perspective can be the extent of engaging with a wider audience, obtaining better informed opinions, enabling more in-depth consultation, providing feedback to citizens and cost-effectiveness of contributions' analysis.

III. The socio-technical perspective includes criteria of usability, usefulness and acceptability of the employed ICT tools. The usability criteria are related to the navigation capabilities and the whole organization of them, their efficiency and flexibility from the user's viewpoint, and also the error recover capabilities they provide. The usefulness criteria are related to their accessibility (level of compliance with Web Accessibility Initiative (WAI) guidelines), appeal, content clarity and responsiveness. Finally the social acceptability criteria are related to the accuracy, completeness and reliability of information provided to the citizens, and their trust that the information they provide is handled securely; also, they are related to the relevance and legitimacy of the employed ICT tools.

An more detailed and elaborated version of this framework is preseneted by Aichholzer and Westholm (2009).

Also, Bicking and Wimmer (2009) developed, as part of the MOMENTUM project (www.ep-momentum.eu) financed by the European Commission, a framework for assessing the impact of 21 projects funded under the eParticipation Preparatory Action. The main focus of this framework is to investigate how much sustainable interest of end users has been achieved through the project under evaluation; this is measured in a scale including the following five levels:

- Level 4 – Very High Impact: End users actively participate, and it is likely that they will sustainably use the e-participation system provided.
- Level 3 – High Impact: Majority of the end users actively participates while a minority just visits the e-participation system.
- Level 2 – Medium Impact: End users are reached but majority just visits the e-participation system instead of actively participating.
- Level 1 – Low Impact: The project could raise public awareness. Majority of the end users knows about the existence of the e-participation system, however, end users are not visiting it.
- Level 0 – No Impact: The project could not raise awareness.

Additionally, four important dimensions of the project, which are regarded as main determinants of end users' sustainable interest, are evaluated as well:

a) Tools and Technologies: the tools and technologies employed by the project are evaluated as to their suitability and relevance for the different citizens' groups addressed, and also their usability, appropriateness, appeal, and attractiveness.

b) Processes Supported: it is evaluated to what extent the project takes place in sufficiently early in the policy cycle (regarded as consisting of the following five stages: agenda setting, policy formulation, decision making, policy implementation and policy evaluation), so that it can have a considerable impact on the policy under discussion; also, it is evaluated to what extent the e-participation processes adopted attract the respective target groups and meet their requirements and expectations with regard to course, development, progress and impact of target group's participation.

c) Topic discussed: it is evaluated to what extent the topic under discussion is important, interesting, and appealing to the target groups.

d) Policies supported: it is evaluated to what extent the project addresses and supports existing policies, and also to what extent it has been influenced by them (e.g. as to the choices made for the above three dimensions: tools and technologies, processes and topic).

5. A Synthetic Methodology for Evaluating e-Participation Projects

By combining elements from the abovementioned frameworks and methodologies developed from previous research for the evaluation of IS, traditional off-line public participation and e-participation, a synthetic methodology for evaluating e-participation projects was developed (for more information see Loukis et al (2010a)). It incorporates views and concerns of the three main groups of stakeholders of such a project: affected citizens, competent government agencies and politicians.

From the review of the previous research on the evaluation of public participation it is concluded that the main evaluation dimensions are the process adopted and also the outcomes from various viewpoints (e.g. of the citizens, the involved government agencies, the politicians, etc.). The review of of the previous research on the evaluation of e-participation revealed an additional evaluation dimension: the usability and technical quality of ICT platform employed. For these reasons the proposed methodology is organized around three evaluation perspectives: Process (PRO), System (SYS) and Outcomes (OUT); each of them includes a number of evaluation criteria. It assesses all the three basic dimensions of both 'traditional public participation' and e-participation according to OECD (information provision, consultation and active participation) (OECD 2001a, 2001b, 2003a, 2003b, 2004, 2005) in the legislation formation context. Furthermore, it assesses all the evaluation dimensions proposed by the model of information systems success of Delone and McLean (2003): information quality, systems quality, use, user satisfaction, individual impact and organizational impact, adapted to the context of e-participation.

The Process (PRO) perspective aims to evaluate the process that has been followed in the particular e-participation project. It is based on the 'efficiency evaluation' proposed by Smithson and Hirschheim (1998) and the 'process'-related dimensions that most 'traditional' public participation and e-participation evaluation frameworks include. Also, it incorporates part of the 'political evaluation' concept of the Whyte & Macintosh (2003) framework, and the 'information quality' of the Delone and

McLean (2003) information systems success model. The Process perspective includes 16 criteria shown below in Table 1.

Table 1: Evaluation criteria of the Process perspective

- PRO1: Clarity of objectives
- PRO2: Clarity concerning the participants and the roles and responsibilities of each
- PRO3: Clarity concerning the main political sponsor
- PRO4: Adequacy of time
- PRO5: Adequacy of resources (human, technical, financial)
- PRO6: Appropriate promotion to potential participants
- PRO7: Participants' personal data protection
-PRO8: Quantity and quality of the background information provided to the participants (how complete, objective, correct, reliable, relevant, useful and clear/understandable this information was)
- PRO9: Quality of the facilitator/moderator
- PRO10: Analysis of contributions of participants
- PRO11: Publication of the results and conclusions of the analysis of contributions
- PRO12: Feedback to the participants concerning how their contributions will be (or have been) used and integrated in the government decision-making process
- PRO13: Commitment of the competent politicians and public servants
- PRO14: Adequacy of the whole e-participation project design
- PRO15: Time required to complete the process in relation to the time previously needed
- PRO16: Multiplicity of channels for participation provided to stakeholders

The System (SYS) perspective aims to evaluate the ICT system that has been used in the particular e-participation project. It is based on the 'ease of use' concept of the 'Technology Acceptance Models' (TAM) (Davis 1989, Venkatesh and Davis 2000), which is an important determinant of IS acceptance and use, the 'system quality' dimension of the Delone and McLean information systems success model (2003), and the 'technical evaluation' concept of the Whyte & Macintosh (2003) framework; it constitutes another aspect of the 'efficiency evaluation' proposed by Smithson and Hirschheim (1998). This perspective includes 11 criteria shown below in Table 2.

Table 2: Evaluation criteria of the System perspective

- SYS1: Appropriateness of the ICT system for engaging the targeted participants
- SYS2: General ease of use of the ICT system by the participants
- SYS3: Organization, simplicity and clarity of screens
- SYS4: Simple error handling
- SYS5: User control of the pace of interaction
- SYS6: Easy reversal of actions
- SYS7: Accessibility by people with disabilities
- SYS8: Ease of accessing the background information provided to the participants
- SYS9: Ease of posting a contribution in the forum
- SYS10: Ease of accessing the contributions of the other participants in the forum
- SYS11: Technical quality (response time, downtime, etc.)

Finally the Outcome (OUT) perspective aims to evaluate the outcomes from a political viewpoint of the particular e-participation project, with main emphasis on stakeholders' extent of participation, contributions, interaction and satisfaction, and also on the impacts on the quality, the acceptance and the applicability of the legislation under development. It is based on the 'effectiveness evaluation' concept proposed by Smithson and Hirschheim (1998), the 'use', 'user satisfaction', 'individual impact' and 'organizational impact' dimensions of the Delone and McLean (2003) information systems success model, and the 'usefulness' concept of the 'Technology Acceptance Models'(TAM) (Venkatesh et al., 2003), which is an important determinant of IS acceptance and use. It is also based on the objectives of the governments adopting public participation and e-participation according to OECD (2001, 2001, 2003a, 2003b, 2004, 2005), the 'outcomes'-related dimensions that most public participation and e-participation evaluation frameworks include and part of the 'political evaluation' concept of the of the Whyte & Macintosh (2003) framework. The Outcomes perspective includes 18 criteria shown below in Table 3.

Table 3: Evaluation criteria of the Outcome perspective

- OUT1: Extent of participation of citizens affected by the policy/decision under discussion

- OUT2: Extent of participation of the main interest groups affected by or associated with the policy/decision under discussion
- OUT3: Extent of participation of less politically involved groups (e.g. young people, minorities, lower socio-economic classes, etc.) affected the by policy/decision under discussion
- OUT4: Extent of participation of public servants from the competent government agency
- OUT5: Extent of participation of independent experts
- OUT6: Informed contributions
- OUT7: Quality of contributions
- OUT8: Pluralism of contributions
- OUT9: Extent of interaction among participants' (number of contributions on other participants' contributions)
- OUT10: Extent of conflict management and consensus building
- OUT11: Generation of useful information, knowledge and views concerning the policy/decision under discussion, which can be useful for improving it.
- OUT12: Impact of citizens' contributions on the policy/decision under discussion
- OUT13: Impact on acceptance and applicability of this policy/decision
- OUT14: Impact on perceived transparency and trust to government
- OUT15: Satisfaction of the citizens who participated
- OUT16: Satisfaction of the public servants from the competent government agency who participated
- OUT17: Satisfaction of the independent experts who participated
-OUT18: Willingness of stakeholders to reuse the system

For collecting data concerning the above evaluation perspectives and criteria we should use both quantitative and qualitative techniques (e.g. both surveys and focus-group in-depth discussions). This methodology can provide rich information on a wide variety of aspects of the project under evaluation, which enables the formation of a rich picture concerning the value created by the project and also its main strengths, weaknesses and improvement needs. However, its practical application requires much effort and considerable human and financial resources and time. So it is possible in cases of limited resources and/or time to focus for each perspective on a subset of the proposed evaluation criteria, which are more relevant and important for the particular project under evaluation. Also, an alternative simplified methodology was developed, and is described in the following section

6. A Simplified Methodology for Evaluating e-Participation Projects

A simplified methodology for evaluating e-participation projects was developed for the evaluation of project FEED ('Federated eParticipation Systems for Cross-Societal Deliberation on Environmental and Energy Issues' - www.feed-project.eu) (Loukis et al (2009)), which has been co-financed by the European Commission. The FEED project was based on an advanced e-participation platform that allows citizens and government agencies to share quickly and easily multimedia content through a map interface (e.g. pictures or video, produced even through simple mobile phones, which show problems or document opinions/positions concerning particular geographical locations or areas). Every user of this platform (citizen or government agency) can upload a multimedia document on the topic under discussion and associate it with a particular geographical location or area, and also can search (based on the digital map or/and the semantic annotation of all documents) for content provided by other citizens or government agencies. Beyond this powerful interaction mechanism, the platform offers additional capabilities for interaction between citizens and government agencies, and also among citizens, through various forum and petition functionalities.

This simplified evaluation methodology (for more information about it see Loukis et al (2010b)) focuses on citizen's viewpoint (but does not examine other stakeholders' viewpoints), and is based on the Technology Acceptance Model (TAM) (Davis 1989, Venkatesh and Davis 2000), which is a mature and widely used framework for evaluating various types of IS. Therefore the main evaluation dimensions are usage, ease of use and usefulness; each of them is further elaborated and adapted to the objectives and capabilities of the particular e-participation platform. For the case of the above FEED project platform:

I) The usage of the platform was evaluated by assessing the extent of using it for getting information on the topic under discussion and for contributing postings about it in the forum.

II) The ease of use was evaluated by assessing how easy it was for the users to use the platform in general and also its the main capabilities: to search for and find information using the map, to access

the postings of the other users and to add a new multimedia posting.

III) The usefulness dimension, taking into account that a user of such a platform has both functional objectives (e.g. read information and postings on the topic under discussion, and enter his/her own contributions) and political objectives (influence decisions and public policies on the topic under discussion), was divided into sub-dimensions: the 'functional usefulness' and the 'political usefulness'. The former was evaluated by assessing to what extend the users find that the map interface and the information uploaded on it enabled them to get better informed on the topic under discussion and to contribute more informed postings in the forum discussion, and also to what extend the forum postings of others increased their knowledge on the discussion topic. The latter was evaluated by assessing what level of e-participation the users believe that has been achieved (information provision from government to citizens, consultation with citizens (aiming at simply collecting their opinions), engagement (meant as consultation affecting government decisions) or citizens' empowerment), and whether they believe that the visions and ideas they entered in the forum will be further considered by the government, and also their general satisfaction.

Furthermore, taking into account that the value for the citizens of e-participation conducted through such a platform depends also on the importance of the discussion topic, we used it as an additional evaluation sub-dimension. It was evaluated by assessing how important the users find the topics discussed, and also to what extent they attract the users to use the platform again in the future (sustainability). Each of the above evaluation dimensions and criteria should be assessed using both quantitative and qualitative techniques. In the following Table 4 we can see the questionnaire used for the quantitative evaluation, which shows the evaluation dimensions and their corresponding evaluation criteria.

Table 4: Evaluation dimensions and criteria of the simplified methodology for evaluating e-participation projects

1. Usage
U1. How often did you visit the platform in order to get information (e.g. search for documents, etc)?
U2. How often did you contribute, e.g. by posting an opinion, by participating in an opinion poll, etc.?
2. Ease of use
EOU1. Do you think the platform (all tools and information provided online) is easy to use?
EOU2. Did you find the use of the maps provided in the platform helpful in order to find or add information regarding the topic under discussion?
EOU3. Did you find the use of the forum module of the platform easy to use in accessing the postings of other forum members (participants) or adding a posting of your own.
3. Usefulness
US1. What level of engagement with the topic under discussion did you reach through the online participation?
US2. To what extent did the map and the information appended (uploaded) on it helped you to get better informed on the topic under discussion?
US3. To what extent did the map and the information appended on it help you to make a better and more informed posting and participation in the forum discussion?
US4. To what extent did you learn new things on the topic under discussion from the postings of other participants of the forum?
US5. Do you think your visions and ideas you expressed in the forum discussion will be further considered?
US6. How satisfied were you with the whole e-consultation/e-participation process?
US7. Does this e-consultation/e-participation process attracts you to participate again?
4. Topic
TO1. How would you judge the importance of the topics discussed?
TO2. Does the topic attract you to return to the portal and online participation/consultation?

This methodology is applicable to all types of e-participation projects by adapting the evaluation criteria of each of the above four dimensions (use, ease of use, usefulness, topic) to the particular objectives, capabilities and characteristics of the project under evaluation (i.e. use as main evaluation criteria the extent of use, the ease of use and the functional usefulness of the main capabilities provided to the user, and also the political usefulness of the whole system and process). Its main advantage is that it allows the assessment of the most important aspects of an e-participation project from citizen's viewpoint using a small number of evaluation criteria (only 14 for the case of the FEED project) and therefore has low requirements for human and financial resources.

7. A Methodology for Focused Evaluations

Very often, in addition to the evaluation of the whole e-participation project, there is a need to conduct as well more focused evaluations of significant innovative components, for which more knowledge has to be gained. In this section we describe an evaluation methodology for this purpose, which aims at the evaluation of a 'structured e-forum' component, developed as part of the LEXIS project ('Enabling Participation of the Youth in the Public Debate of Legislation among Parliaments, Citizens and Businesses in the European Union' -www.lex-is.eu) (Loukis, 2011), which has been co-financed by the European Commission. The structured forum requires from the participants to annotate semantically each new posting as 'issue', 'alternative', 'pro argument', 'contra argument' or 'comment'; also, it requires each new posting to be associated with a previous one according to some predefined rules: for each issue participants are allowed to enter other issues, alternatives or comments, for each alternative they can enter pro arguments, contra argument or comments, for each argument (pro or contra) other arguments (pro or contra) and finally for each comment other comments. This guides the participants to think in a more structured way about the topic under discussion (i.e. to think which are the main issues, what are the main alternatives for addressing each of them, which are the main advantages and disadvantages of each alternative, etc.), make more mentally processed and focused contributions; this increases the quality, focus and effectiveness of the discussion.

The proposed methodology for evaluating the structured forum also focuses on citizen's viewpoint, but, as it has to go into more depth, it includes not only subjective evaluation criteria (subjective measures,), like the evaluation methodologies described in sections 5 and 6, but also objective ones as well (objective measures) (for more information about it see Xenakis and Loukis (2010) and Loukis (2011). In particular, it includes three evaluation stages:

I) Analysis of the discussion tree formed by the postings of the participants, which includes the calculation of the following objective metrics:

- number of postings entered by the participants in total,
- number of postings per type, for each of the allowed types (i.e. key issues, comments, alternatives, pro-arguments, contra-arguments),
- number of postings per level of the discussion tree (for assessing the depth of the discussion)
- percentage of the postings assigned a mistaken type (as an objective indicator of the ease of use of the structured e-forum)

II) Quantitative Evaluation, based on the statistical processing of participants' responses to an evaluation questionnaire we formulated and distributed electronically to them, which included questions asking participants to assess two basic dimensions of the structured e-forum, its perceived ease of use and usefulness, adopting Technology Acceptance Model (TAM) (Davis 1989, Venkatesh and Davis 2000).

III) Qualitative Evaluation, based on a semi-structured focus-group discussion with typical participants in the e-consultation, aiming at a more deep understanding of the above two main aspects, ease of use and usefulness of the structured e-forum, and identifying its main strengths and weaknesses.

In the following Table 5 we can see the questionnaire used for the quantitative evaluation, which shows the evaluation criteria for each of the abovementioned two evaluation dimensions (ease of use and usefulness).

Table 5: Evaluation dimensions/criteria of the methodology for focused evaluation of structured forum

1. Ease of use
EOU1. How easy it was to use the structured forum, i.e. to correctly characterize your idea as an issue, an alternative, a pro-argument, a contra-argument, or a comment, and then correctly enter it in the structured e-forum?
EO2. How easy it was to access, read and understand the postings of the other participants (issues, alternatives, pro-arguments, contra-arguments, comments) and the connections among them in the structured e-forum?
2. Usefulness
US1. Does the structured forum provide appropriate mechanisms for structuring the online discussions?
US2. How do you assess the quality of the contributions (postings) entered by the participants in the structured e-forum?
US3. What is your general assessment of the structured e-forum as a tool for important electronic discussios in comparison to the normal forum tools (where you do not have to characterize your posting as an issue, an alternative, a pro-argument, a contra-argument, or a comment, and then enter it correctly)?

This methodology is applicable to various types of significant innovative components of e-participation platforms that need a more focused in-depth evaluation, so that more knowledge can be generated, by adapting the evaluation criteria of each of the above two dimensions (ease of use and usefulness) to the objectives, capabilities and characteristics of the particular component. Such a focused and in-depth evaluation necessitates the use of both objective and subjective, and also quantitative and qualitative techniques, and a triangulation and combination of their findings.

8. Conclusions and Lessons Learnt

Despite the growing investments of local, regional and central government organizations of many countries in various types of e-participation projects, there is not similar attention to the evaluation of these efforts, so that knowledge can be systematically created on the value they generate to various stakeholders, their strengths and weaknesses, and also the required improvements. This 'evaluation gap' increases due to the lack of a widely accepted practical methodology to be used by government organizations for evaluating systematically and uniformly e-participation projects. This chapter contributes to filling the above gap by initially presenting a review of frameworks and methodologies developed from previous research for the practical evaluation of IS, traditional off-line public participation and also e-participation, which propose evaluation dimensions and criteria. Then based on them a synthetic methodology is developed for evaluating e-participation projects from three fundamental perspectives: process (assessing various aspects of the process that has been followed in the e-participation project), system (assessing the usability and technical quality of the ICT platform that has been used in the project) and outcomes (assessing the outcomes from a political viewpoint concerning stakeholders' extent of participation, contribution, interaction and satisfaction, and also impacts on the quality, the acceptance and the applicability of the policy decision under discussion). Also, an alternative simpler methodology for the same purpose is presented, in order to be used in cases of limited human and financial resources and big time pressure, based on the main dimensions proposed by the technology acceptance models (ease of use, usefulness and use). Furthermore, in addition to the evaluation of the whole e-participation project, there is often a need to conduct more focused evaluations of significant innovative components, for which more knowledge has to be gained. In this direction we developed a practical methodology for conducting a more focused evaluation concerning a significant innovative part of several advanced e-participation projects, the 'structured e-forum', which enables a more structured electronic discussion on a public policy or decision; it can be applied to various types of significant innovative components of e-participation platforms with appropriate adaptation of the evaluation criteria.

From the review of existing frameworks and methodologies for the evaluation of IS, off-line public participation and e-participation, and also from the above evaluation methodologies we developed and applied in various EU projects, useful lessons have been learnt:

- A first lesson is that existing evaluation methodologies differ in the evaluation dimensions and criteria they propose, and also in the evaluation detail (some provide guidance only for high-level evaluation, while some others for more detailed evaluation as well). However, they converge in three main aspects that have to be investigated in the evaluation of an e-participation project: the process and the whole organization of the project, the ICT platform used for it and the outcomes at various levels and for various stakeholders. Also, they converge in the need to investigate both the 'efficiency' and the 'effectiveness' level of the project.
- However, due to the heterogeneity of e-participation projects as to their objectives and capabilities offered to participants, it is necessary to adapt the above evaluation dimensions to the particular objectives of the project under evaluation.
- A second lesson is that for the above investigation information should be collected using multiple techniques, triangulated and combined. Due to the complexity of e-participation, conducting only a survey of a small number of participants, asking them to express their perceptions (which is the usual practice in most e-participation projects), is not sufficient. It is necessary to conduct qualitative discussions in focus-groups as well, in order to get a deeper understanding of the findings from the survey. Furthermore, in addition to participants' perceptions it is necessary to use objective measures as well as much as possible.
- A third lesson is that an e-participation project is a complex intervention, including many organizational, political and technological elements, and also having a wide range of impacts. Producing information on all these aspects of an e-participation project during its evaluation might

require too much effort and considerable human and financial resources and time; therefore a trade-off is required between the richness of evaluation information to be produced and the resources tob e consumed for this purpose.

- A fourth lesson is that all previous research on e-participation evaluation concerns the dominant e-participation paradigm, which is based on government initiated and operated 'official' e-participation websites, that citizens have to visit in order to participate in government policy and decision making. However, the emergence of the web 2.0 social media gave rise to a new e-participation paradigm that exploits these new powerful electronic communication channels (e.g. see Charalabidis et al (2011)). Therefore it is necessary to develop methodologies for understanding and evaluating this new e-participation paradigm.

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