

Public Sector Reform Using Information Technologies: Transforming Policy Into Practice

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Chapter 10

Evaluating the Use of Structured E-Forum Tools in Consultations on Public Policies

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ABSTRACT

The governments of many countries all over the world attempt to reform and improve their communication and interaction with citizens in important public policies issues through electronic channels mainly based on the Internet. It is therefore highly important to develop and systematically evaluate ICT tools that can facilitate and support high quality interaction and consultation among citizens and government agencies on public policies. This chapter investigates and evaluates the use of a structured e-forum tool, which has been designed and developed for this purpose, based on the Issue Based Information Systems (IBIS) framework. Using this tool an e-consultation pilot has been conducted on new legislation, which usually constitutes the most important, complex, and extensively debated component of every public policy. It has been evaluated using multiple methods: analysis of the discussion tree, quantitative evaluation through a structured questionnaire, and qualitative evaluation through an in-depth discussion in a small focus group. The conclusions of them were consolidated revealing the advantages offered by the structured e-forum, and also its limitations.

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INTRODUCTION

The governments of many countries all over the world attempt to reform and improve their communication and interaction with citizens on public policies issues through electronic channels, mainly based on the Internet. The rapid development and diffusion of information and communication technologies (ICT), and especially the Internet, which offer new cheap, inclusive and interactive channels and environments for public political communication and interaction, and at the same time the observed ‘democratic deficits’ and the trend to overcome them through more participation and involvement of citizens, have been the main drivers of the rapid development of e-participation in the last decade (Macintosh, Malina, & Whyte, 2002; OECD, 2003a, 2003b and 2004; Saebo, Rose, & Flak, 2008; Davis, 2009). According to the relevant reports of OECD (2003b and 2004) electronic participation (or e-participation) is defined as the extension and transformation of participation in societal democratic and consultative processes mediated by ICT. Its main objective is to exploit the continuously increasing capabilities and penetration of ICT in order to inform citizens on government activities and policies, and to broaden and deepen political participation, increasing both its quantity and quality. The potential of ICT and especially the Internet in this direction has been strongly emphasized by the relevant literature. OECD (2004) argues that ‘The unprecedented degree of interactivity offered by new ICTs has the potential to expand the scope, breadth and depth of government consultations with citizens and other key stakeholders during policy-making’. In the same direction recently Todd Davis (2009) states that ‘Imagine technology and democracy uniting to overcome distance and time, bringing participation, deliberation, and choice to citizens at the time and place of their choosing’. These new technologies can drive significant transformations in the quantity and quality of communication and interaction of government agencies with citizens.

This will enable government agencies to gain a better and deeper understanding of the problems, needs, concerns and values of the groups of citizens and in general the societies they are serving, and therefore make in-time the required adaptations and reforms in their public policies, programs, operations and legislations whenever conditions change. Therefore e-participation has the potential to be a strong driver of innovation and reform in government.

It should be emphasized that these e-participation ideas have been based on the ideas of ‘strong’ or ‘participatory’ democracy that had emerged about 20 years ago and keep evolving. Their basic proposition is that the role of citizens in modern democracy cannot be limited to voting in the elections taking place every three or five years, but should also include their deliberative engagement in public decision-making; they argue that the informed opinion of citizens should be taken seriously into account in all the decisions of government organizations. Barber (1984) highlights the concept of ‘strong democracy’, which is based on active citizen participation and discussion among opposing views, which however ‘entails listening no less than speaking, it is affective as well as cognitive...’. Held (1987 and 1996) distinguishes nine different models of democracy, one of them being the ‘participatory’ model, which reflects the need to engage both citizens and civil society organisations (CSOs) in the policy process, which however necessitates informed and active citizens. Fishkin (1991 and 1995) calls for “mass” deliberation by citizens instead of “elite” deliberation by their elected representatives, and argues that ‘A major part of the problem of democratic reform is how to promote mass deliberation – how to bring people into the process under conditions where they can be engaged to think seriously and fully about public issues’. The development, reduction of prices and rapid penetration of ICT, and especially the Internet, provided effective means for the wide application of these ideas.

In this direction government agencies of various layers (e.g. national, regional, local) organize e-consultations about important public policies in all the stages of their lifecycle, both in the design stages (agenda-setting, analysis, policy creation) and in the execution ones (implementation, monitoring/evaluation). However, the high expectations have not been fully realized so far (e.g. McNeal, Hale, & Dotterweich, 2008; Macintosh, Gordon, Renton, 2009); this indicates that further research and improvement is required in many areas (both technical and non-technical), so that higher maturity can be achieved in e-participation. One of these areas is definitely the improvement of the ICT tools used for e-participation. Several types of tools have been researched, deployed and tested for this purpose, such as e-form (e.g. for complaints or suggestions), e-forum and e-petition tools, which however are in general characterised by low levels of structure (OECD, 2003b and 2004; Macintosh, 2004; Schlosberg, Zvestoski, & Shulman, 2007; Cartwright, & Atkinson, 2009). For instance the e-forum tools used for most e-consultations are unstructured or minimally structured, since they allow participants to enter just ‘opinions’ (without any discrimination between different types of opinions), or in some cases opinions on other previously entered opinions. It is therefore highly important to develop and systematically investigate and evaluate more structured ICT tools, which can facilitate and support higher quality interaction and consultation among citizens and government agencies on public policies, based on arguments and contra arguments. Furthermore, such structured ICT tools would make the analysis of participants’ contributions easier, so that they can be more efficiently summarized and used in the following stages of the decision-making process. However, limited research and even less systematic evaluation has been made concerning more structured ICT tools for this purpose, such as the ‘structured e-forum’ (Karacapilidis, Loukis, & Dimopoulos, 2005). It can be defined as an electronic discussion space, which allows par-

ticipants to enter semantically annotated postings (e.g. problems, proposed solutions, advantages and disadvantages), and also associate them to previous postings, according to some rules based on a predefined discussion ontology.

This chapter investigates and evaluates systematically the use of a structured e-forum tool, which has been designed based on the Issue Based Information Systems (IBIS) framework (Kunz, & Rittel, 1979; Conklin, & Begeman, 1989; Conklin, 2003), for e-consultations on public policies in order to improve their quality. Using this structured e-forum tool an e-consultation pilot on legislation under formation has been conducted in cooperation with the Greek Parliament. Legislation usually constitutes the most important, widely debated and at the same time the most complex component of every public policy, so it is worth focusing on it. This pilot has been evaluated using multiple methods: analysis of the discussion tree, quantitative evaluation through a structured questionnaire and qualitative evaluation through an in-depth discussion in a focus-group. The quantitative and qualitative evaluation have been based on the ‘Technology Acceptance Model’ (TAM) (Davis, Bagozzi, & Warshaw, 1989; Davis, 1989), which constitutes a well established and mature foundation from the information systems domain. From this evaluation interesting conclusions have been drawn concerning the advantages offered by the structured e-forum, and also its limitations. The research presented in this chapter has been part of the LEX-IS 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) of the ‘eParticipation’ Preparatory Action of the European Commission (Loukis et al., 2007).

This chapter consists of eight sections. This introduction is followed by a section briefly describing the theoretical background of our research. Then the research methodology is presented, followed by a description of the abovementioned pilot. In the following three sections the results

of the multi-method evaluation of the pilot are presented (from the analysis of the discussion tree, the quantitative evaluation and the qualitative evaluation respectively). In the final sections a discussion of findings is provided followed by the conclusions.

THEORETICAL BACKGROUND

Rittel and Weber (1973), as part of a contribution to planning theory, proposed a division of the problems that societies and organizations face into 'tame' and 'wicked' ones. The main characteristics of the tame problems are that, though they are not necessarily simple, they have been sufficiently understood, so they can be analysed using established 'first generation' methods through algorithms, which consist of sequences of predefined steps, and it is clear when a solution has been reached (i.e. there are clear stopping rules). On the contrary the wicked problems are the most difficult to address, since they are characterised by many stakeholders with different and heterogeneous problem views, values and concerns, so there is not agreement among them on the exact definition of the problem; such problems lack mathematically 'optimal' solutions and pre-defined algorithms for calculating them, and have only 'better' and 'worse' solutions, the former having more positive arguments in favour of them than the latter (i.e. there are not clear stopping rules). In order to solve them several iterations are required, each of them usually resulting in a redefinition or elaboration of the problem to be solved.

Kunz and Rittel (1979) suggest that wicked problems cannot be addressed by the usual first generation methods, and require second generation methods, which are based on high quality consultation and argumentation among stakeholders, aiming to build a common understanding of the problem, its possible solutions and the advantages and disadvantages of each of them. Based on this, a 'balanced' solution, which has the highest possible

acceptance of the various stakeholders' groups, can be hopefully formulated, having considerable advantages and fewer disadvantages. Furthermore, they suggest that this can be facilitated and enhanced by using an 'Issue Based Information System' (IBIS), which aims to 'stimulate a more scrutinized style of reasoning which more explicitly reveals the arguments. It should help identify the proper questions, to develop the scope of positions in response to them, and assist in generating dispute'. The IBIS framework is based on a simple but powerful discussion ontology, whose main elements are 'questions' (issues-problems to be addressed), 'ideas' (possible answers-solutions to questions-problems) and 'arguments' (evidence or viewpoints that support or object to ideas).

In the same direction Forester (1985) views complex planning in both the public and the private sector as a process of 'Making Sense Together in Practical Conversations', in which stakeholders (i.e. individuals or groups affected by the outcome of this planning) make together sense of the problematic context and discover other participants' values and concerns. This requires a high quality deliberation, resulting in a shared understanding concerning problem definition, alternative actions and also arguments and counterarguments for each of them, which lays the foundation for finding a good and acceptable solution.

The development of public policies for addressing the highly complex and multidimensional problems that modern societies face is usually a complex and wicked planning problem. Most public policies have many stakeholders affected by them, with quite different problem views, values and interests, and very often in conflict with one another. It is very usual that one stakeholder group proposes strongly some policy directions, but other stakeholders' groups have strong objections to them. For these reasons the development of public policies necessitates well-organized participation of stakeholders and efficient consultation and argumentation among them. The relevant literature (Barber, 1984; OECD, 2004;

Macintosh, Gordon, Renton, 2009; Davis, 2009; Fishkin, 2009) emphasizes that this requires not just simple political discussion, but a high quality 'deliberation' based on arguments and contra arguments, in which participants: i) are sufficiently informed, ii) thoughtfully formulate and express their arguments, iii) are willing to listen to, think over and understand the arguments of the other participants, iv) are prepared to change their opinions if they are persuaded by the arguments of others, and v) prefer collaboration and synthesis to competition. However, very often this is not achieved in real life, for various reasons including political culture and also distance, time and budget limitations. Therefore it is of critical importance to use appropriate ICT tools for facilitating and supporting not just discussion among stakeholders, but high quality deliberation among them with the above properties. In this direction OECD (2004) states that a major challenge 'is how to build capacity and active citizenship by harnessing ICTs to constructively encourage deliberation by citizens on public issues – listening to, and engaging in, argument and counter arguments'. Taking into account the above characteristics of public policy development, it would be interesting to investigate the use of structured e-forum tools based on the IBIS framework for this purpose.

Such a tool requires from the participants to make semantic annotation (i.e. define the type) of each new posting in an electronic discussion, which reflects its content. The allowed semantic annotations will be predefined, based on the discussion ontology of the IBIS framework: each participant will be allowed to enter a new 'question', or 'idea', or 'argument' ('pro' or 'contra'). This will guide the participants to think in a more structured way about the public policy under discussion and make more thoughtful and focused contributions, so it is expected to increase the quality and effectiveness of the discussion. Also, the participants have to associate their postings with previous ones according to the rules defined in the discussion ontology of the IBIS framework,

e.g. an 'idea' should be associated with an 'question', while a 'pro' or a 'contra' argument should be associated with an 'idea', etc. This will guide the participants to examine more carefully and understand better the postings of others, so it is expected to improve the communication and interaction among the participants, and in this way to increase further the quality and effectiveness of the discussion. From a knowledge management perspective, such structured electronic discussions allow a more efficient transformation of the valuable 'tacit knowledge' possessed by the stakeholders into 'explicit (codified) knowledge' (knowledge externalization) (Nonaka, 1994; Cohendet, & Steinmueller, 2000), which can be processed, combined with other relevant knowledge and disseminated. Moreover, such a sequence of semantically annotated and associated postings creates threads of in-depth discussions which are more convenient to be tracked, analysed and summarized, so that useful conclusions can be drawn and used in the following stages of the decision-making process.

However, in the area of e-participation have been traditionally used and researched mainly ICT tools characterised by low structure, such as e-forum, e-petition and e-community tools (OECD, 2003b and 2004; Macintosh, 2004; Schlosberg, Zavestoski, & Shulman, 2007; Cartwright, & Atkinson, 2009). For instance, most of the political e-consultations on various public policies are conducted in e-forum environments, which allow participants to enter postings, or postings on other participants' postings, without any semantic annotation or structure. There are a few previous publications describing structured electronic discussion and argumentation tools for public policy consultations (Gordon, & Karacapilidis, 1997; Karacapilidis, & Papadias, 2001; Pingree, 2009), however quite limited research has been conducted concerning the systematic evaluation of such tools (Karacapilidis, Loukis, & Dimopoulos, 2005). Therefore further research is required in order to investigate and evaluate systematically,

based on ‘real life’ evidence, the suitability, advantages and disadvantages of using structured ICT tools for e-consultations on public policy.

RESEARCH METHODOLOGY

In order to contribute to filling this research gap we investigated and evaluated systematically the use of a structured e-forum tool based on the IBIS framework for consultations on legislation under formation, which is usually the most important, widely debated and at the same time complex component of every public policy. It requires high quality deliberation and argumentation among many heterogeneous stakeholders, with thoughtful and focused opinions and arguments, which take into account seriously other stakeholders’ opinions (e.g. Coglianesse, 1997; Schlosberg, Zavestoski, & Shulman, 2007).

In particular, for meeting the above research objective we adopted the following methodology.

Initially the process of legislation formation in the Greek Parliament was analyzed.

Then, based on this analysis, a pilot e-consultation on a law under formation in the Greek Parliament was designed. This included definition of the bill to be discussed, the participants, the discussion ontology, the timing of the discussion and also the informative material to be provided to the participants. Concerning the discussion ontology, it was decided to use the one of the IBIS framework, since previous literature supports its suitability for discussing wicked problems (e.g. Kunz, & Rittel, 1979; Conklin, & Begeman, 1989; Conklin, 2003). An adaptation of the naming of the basic types of postings provided by IBIS was adopted (as ‘issues’, ‘alternatives’, ‘pro-arguments’, ‘contra-arguments’, adding also the type of ‘comments’ allowing more neutral postings), which was used in our previous research (Karacapilidis, Loukis, & Dimopoulos, 2005), being more appropriate for discussions on public policy.

Next this pilot e-consultation was conducted in cooperation with the Greek Parliament, being

monitored and moderated by the first two authors (since their native language is Greek).

Finally this pilot was evaluated using multiple methods:

1. Analysis of the discussion tree which was formed by the postings of the participants. We calculated the number of postings entered by the participants in total (as an overall measure of the extent of this e-consultation), per type (for each of the allowed types: key issues, comments, alternatives, pro-arguments, contra-arguments, for assessing the composition of the e-consultation) and per level of the discussion tree (for assessing the depth of the discussion and the interaction among the participants). Also, we calculated the percentages of the simplistic postings (= postings that just agree or disagree with previous postings, without adding any new information/value) and the postings assigned a mistaken type (as indicators of the ease of use of the structured e-forum).
2. Quantitative Evaluation based on the statistical processing of participants’ responses to a number of relevant questions of an evaluation questionnaire which was distributed electronically to them. This questionnaire included many questions asking the participants to assess various aspects of this e-consultation. Among them there were five questions focusing on the structured e-forum tool (they are shown in the Appendix), based on the ‘Technology Acceptance Model’ (TAM) (Davis, Bagozzi, & Warshaw, 1989; Davis, 1989), which constitutes a well established and mature foundation from the information systems domain. These questions were asking participants to assess two basic aspects of the structured e-forum tool, its perceived ease of use (Q1 and Q2) and its perceived usefulness (Q3, Q4 and Q5), which according to the TAM are the main determinants of its adoption.

3. Qualitative Evaluation based on a semi-structured in-depth discussion in a focus-group, consisting of some of the participants in the e-consultation and also Officials of the Greek Parliament. It aimed to provide a deeper understanding of the main strengths and weaknesses of the structured e-forum with respect to the above two basic aspects, its ease of use and usefulness. The discussion was tape-recorded and transcribed. Then coding of the transcript was performed manually, in which each of the two first authors (since their native language is Greek) processed separately the above document, in order to identify the main issues, strengths and weaknesses expressed by the participants in the discussion concerning its ease of use and usefulness, using an open coding approach (Maylor & Blackmon, 2005). The results of these two authors were compared and differences were resolved.

PILOT DESCRIPTION

Our e-consultation pilot, which was implemented as part of the LEX-IS project (Loukis et al., 2007), involved an electronic discussion on a highly controversial law under formation regulating the ‘Contract of Voluntary Cohabitation’ in a structured e-forum tool. This law formalized an existing social situation in Greece for long time: many couples, especially among the younger age groups, are reluctant to proceed directly to marriage, and instead choose to live together under the same roof, sharing their lives for long periods of time, and during that time have children, share living expenses and buy property, just to mention some of their most important common actions. However these couples are not legally bonded, leaving the weaker partner unprotected in case that such an informal co-habitation ends. In order to cover this legal gap this law was proposed to regulate the formalization of the voluntary co-habitation

of couples, and along with that to settle the issues arising when such unions are dissolved. There were two groups who expressed strong objections to the settlements of this law: the young couples and the homosexual couples. The young couples were not satisfied with some of the settlements regulating mainly inheritance and child support issues. The homosexual couples complained that they were excluded from the right to form a union under the scheme that this law regulated; this gave rise to a big debate in the Greek society about whether homosexual couples were justly excluded or not.






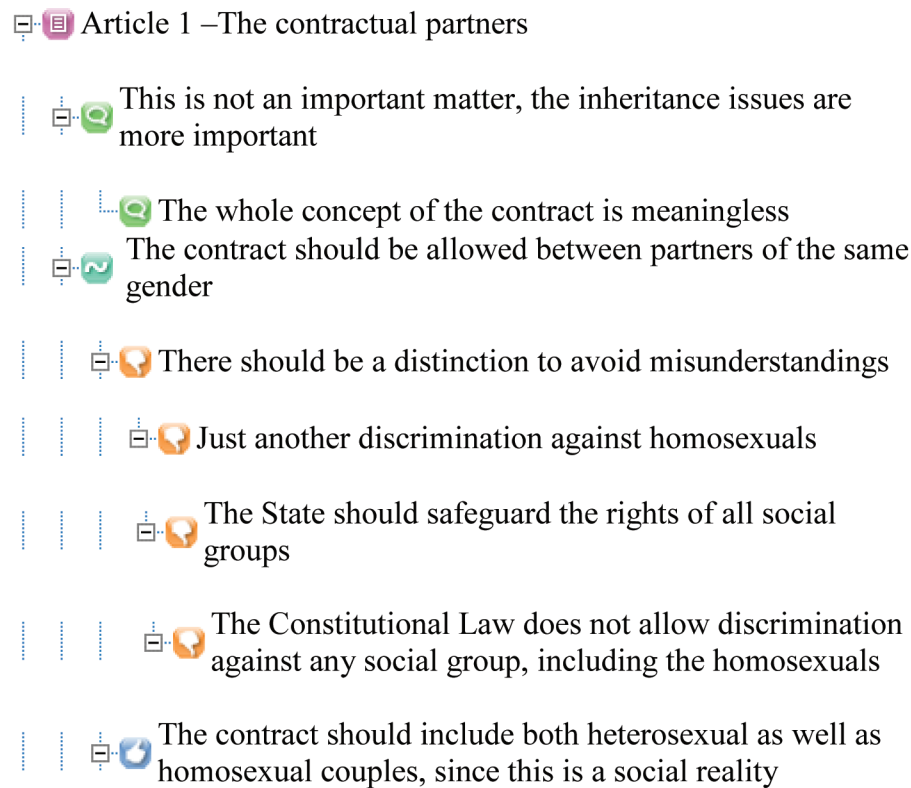
The e-consultation on this law was held between 79 participants, aged between 18 to 35 years old, coming mainly from the University and the Parliament environment, and were characterized by levels of education and computer skills. Initially a workshop was held in order to give them general information about this e-consultation and demonstrate the capabilities of the ICT platform used, including the structured e-forum tool. Next the Parliament provided to them the complete documentation of this law: i) the justification report of the law, ii) the main content of the law (articles), iii) the minutes of the discussion on this law in the Parliament. Then the electronic discussion started, and lasted for a period of 5 weeks. Each participant, once logged in, could either join the discussion on an existing issue or introduce a new issue . In the former case, a participant could either comment on an existing issue , or suggest an alternative  addressing it; also, he/she could enter a pro argument  in favor, or on the contrary a con argument against  an alternative. For each new posting the participant had first to define its type (i.e. semantically annotate it), then enter a short title summarizing it which was shown in the discussion tree), and finally enter a longer text describing and explaining the posting in detail. The discussion was moderated, which meant a delay of several hours between the time a new posting was entered and the time it was approved by the moderator and became visible

Figure 1. Partial view of the discussion tree formed in the structured e-forum






on the e-forum for the other participants to comment on. The conclusions of this e-consultation were given to the competent Parliamentary Committee.

ANALYSIS OF THE DISCUSSION TREE

The first step of the evaluation of this e-consultation was the analysis of the discussion tree that was formed in the structured e-forum tool; we can see a partial view of it in Figure 1 (translated from Greek into English), showing some of the postings entered by the participants.

In total the participants made 4192 visits in the structured e-forum tool and entered 131 postings on this highly debated topic. Initially we

calculated the number of postings per type and found that we had:

- 8 ‘issues’ ,
- 13 ‘comments’ ,
- 15 suggested ‘alternatives’ ,
- 35 ‘pro-arguments’ ,
- 60 ‘con-arguments’ .

The above indicate that a good and balanced discussion tree was formed, with the expected composition and structure from a well-developed electronic discussion: with several new issues (8) entered by the participants on the root topic (=the law on the ‘Contract of Voluntary Co-habitation’), a higher number of alternatives (suggestions for changes) (15), and also a similar number of comments (13) on these issues, and a much higher

number of pro-arguments (35) and con-arguments (60). It was encouraging that we did not have a problem of too many comments that we initially feared, which would indicate that participants had difficulty in semantically annotating their postings, and preferred to use the more broad and neutral comment type (since an issue, alternative, pro- or contra-argument, question or answer can be broadly characterised as a comment, however a more detailed mental processing of it reveals that it requires a more 'specific' characterization). Therefore we can conclude that a structurally well-developed electronic discussion took place. This provides a first evidence that these highly educated and computer skilled participants managed to use efficiently the rich 'discussion language' provided by the IBIS framework (consisting of the above six types of postings and the allowed associations among them); however, in order to draw more sound conclusions on this we have to calculate some additional metrics.

So next we calculated the percentage of the simplistic postings (= postings not adding value/new information), and found only 8, which make a 6% of the total number of postings. Additionally, we calculated the percentage of postings assigned a mistaken type (e.g. some postings were characterized as issues, while from their content we could see that they were alternatives), and found 13 such postings, which makes a 10% of the total number of postings. These results indicate that this structured e-forum tool and the discussion language it provides were not difficult to be used by our highly educated and computer skilled participants, but at the same time they were not very easy and intuitive (as the above non-negligible percentages of postings with mistaken type and simplistic postings, even by these sophisticated users, shows). This can be understood taking into account that in our everyday discussions we are not accustomed to having such structured discussions, which require much mental effort for structuring and semantically annotating our opinions (i.e. selecting the correct type for them).

Finally, in order to assess the level of depth of this electronic discussion, we calculated the number of postings per level, and found:

- 8 first level postings,
- 24 second level postings,
- 38 third level postings,
- 27 fourth level postings,
- 20 postings of fifth level,
- 13 sixth level postings,
- 1 seventh level posting.

Therefore it can be concluded that the electronic discussion of the pilot was characterized by considerable depth and interaction among the participants. This indicates that the stimulation and guidance provided to the participants by a structured e-forum tool, through the predefined types of postings and associations among them (guiding the participants 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.), results in discussions of considerable depth and interaction among the participants.

QUANTITATIVE EVALUATION

The second step of the evaluation was quantitative. The evaluation questionnaire was returned by 27 out of the 79 registered participants in this e-participation pilot (34% response rate). The relative frequencies of the responses to the five questions concerning the structured e-forum are presented in Table 1.

With respect to ease of use we can see that most of the respondents found as medium to easy using the structured e-forum (68%), and also accessing, reading and understanding the postings of other participants (56%). It should also be noted that in both these questions the response with the second highest relative frequency was 'medium to difficult' (20% and 28% respectively).

Table 1. Partial view of the discussion tree formed in the structured e-forum

	difficult	medium to difficult	medium to easy	easy
Q1. 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 forum??	0%	20%	68%	12%
Q2. How easy it was to access, read and under-stand the postings of other participants and the connections among them in the structured forum?	4%	28%	56%	12%
	much worse	slightly worse	slightly better	much better
Q3. What is your general assessment of the structured forum as a tool for important e-consul-tations in comparison to the normal forum tools?	0%	8%	28%	64%
	low	medium to low	medium to high	high
Q4. How do you assess the quality of the contributions (postings) entered by the participants in this e-consultation?	0%	8%	76%	16%
	to a poor extent	to medium extent	to a good extent	to a very good extent
Q5. To what extent did you learn new things and ideas from the contributions (postings) entered by the other participants in this e-consultation?	4%	40%	44%	12%

Therefore the respondents on one hand do not find the structured e-forum difficult, but on the other do not find it easy either, and believe that it requires considerable mental effort (e.g. in order to correctly characterize an idea as issue, alternative, pro-argument, contra-argument, or comment, to correctly enter it in the structured forum, to access, read and understand the postings of the other participants, etc.), despite their high educational level and computer skills. This conclusion is in agreement with the non-negligible percentage of entries assigned a mistaken type (10%) identified from the analysis of the discussion tree.

With respect to usefulness, the structured e-forum tool is perceived by most of the respondents as much better than the normal forum tools (64%), or slightly better (28%). Also, a big majority of the respondents assess the quality of contributions (postings) of other participants as medium to high (76%), or high (16%). Finally, most of the respondents believe that they learnt new things and ideas from the contributions (postings) entered by

the other participants in this e-consultation to a good extent (44%), or to a medium extent (40%). Therefore the respondents find the structured e-forum as useful, and superior to the normal (unstructured) forum, due to the mechanisms of structuring and focusing the discussion it provides, which improve its quality and effectiveness.

QUALITATIVE ANALYSIS

In the semi-structured focus-group discussion we conducted with some of the participants in this e-consultation and also Officials of the Greek Parliament one of the topics was whether it was easy to use the structured e-forum, and also its main advantages and disadvantages in this respect. One of the main difficulties mentioned was the correct assignment of type to the postings; this is confirmed by the findings of the quantitative evaluation (from questions Q1 and Q2) and the non-negligible percentage of mistakes (about

10%) identified in the analysis of the discussion tree. As another difficulty in using the structured e-forum was mentioned the appropriate wording of the title of each posting, which is directly shown in the discussion tree of the structured forum box, so that it reflects the content of the posting in a few words and other participants can easily understand it. By examining the discussion tree we identified several postings in which the title was not representative of the more detailed description and explanation presented in corresponding box, so it was difficult for the other participants from the title to understand the content of the posting. This can reduce the communication and interaction among the participants.

Also, some additional weaknesses were mentioned during this discussion, which had more to do with the design and implementation of the particular platform and the structured e-forum tool used in this pilot, rather than the concept of the structured forum itself. For instance, some participants said that the platform provides a very small space (box) for the structured e-forum, so the users have to use much scrolling up and down when trying to access previous participants' postings. With respect to the moderation of the postings all participants agreed that it caused a big problem: from the time one posting was entered by a participant it usually took several hours until the moderator approved it and the posting became visible; so it was not possible for the same participant and the other ones to see it immediately, and possibly enter more postings associated with it.

Another topic in the semi-structured focus-group discussion was the usefulness of the structured e-forum. It was generally accepted that overall the use of the structured e-forum was considered a strength of the pilot, since it enables a more focused and effective e-discussion. Also, the semantic capability it offers allows users to quickly form an opinion as to the progress of the discussion on a particular key issue of interest. The postings were judged by the focus group to be well informed and of relatively good quality.

It was mentioned that the adopted moderation processes had a positive impact on the quality of the postings was; that was known to all participants beforehand, so they were careful anyway when making a posting. The above findings are in agreement with the assessments of most of the respondents in the quantitative evaluation that the structured forum is a superior tool than the normal (unstructured) forum, providing proper structuring mechanisms, which result in better quality of participants' postings and discussion.

The Parliament Officials mentioned that such tools can be useful in order to get a better feeling of public opinion on the issues discussed in the Parliament and better quality of contributions and arguments from the citizens. The focus-group was generally positive towards the idea that such e-participation tools could prospectively offer a stand to the less powerful, excluded and non-participating in politics citizens; however, the higher mental effort that the structured e-forum tool requires, in comparison with the formal (unstructured) forum tool, might prevent citizens with lower education from using it. Another point raised by the Parliament Officials was the anonymity of postings (opinions) entered in this tool, which has some advantages (freedom of expression), but at the same time does not allow them to be seriously considered by the Parliament, which traditionally takes more seriously into account opinions from persons representing important stakeholder groups (e.g. chairpersons of affected trade unions, or sectoral/professional associations).

DISCUSSION

From the above multi-method evaluation of this pilot, which included analysis of discussion tree, quantitative evaluation and qualitative evaluation, some encouraging conclusions have been drawn concerning the potential of using structured e-forum in the e-participation domain for improving the quality of e-consultations on public policies.

In particular, with respect to its usefulness, the highly sophisticated participants in our pilot find that the structured e-forum is better than the simple (unstructured) forum, enabling a more focused and effective electronic discussion. Furthermore, the big majority of the participants find the contributions of their co-participants to be of high or medium quality. However, with respect to the ease of use, these highly sophisticated participants in our pilot do not regard the structured e-forum platform as easy to use and intuitive (which is a critical requirement for e-participation systems); they rather find it medium to easy to use, and believe that it requires considerable mental effort, and mention some difficulties they had in using it (e.g. for the correct characterization of their postings as issues, alternatives, comments, pro- or contra-arguments, for the appropriate wording of the title of each posting so that it reflects the content of it in a few words and other participants can easily understand it).

These conclusions are in general in agreement with the ones drawn from the abovementioned study of Karacapilidis, Loukis & Dimopoulos (2005), who evaluated the use of a similar structured e-forum tool for supporting G2G collaboration in public policy making, based on smaller pilot e-consultation concerning the potential establishment or not of non-state universities in Greece among fourteen public servants from several involved public authorities. From this evaluation it was concluded that participants found the system useful for supporting efficient and effective electronic discussions on difficult and complex public policies; however, at the same time they report some difficulties they had in participating in such a highly structured e-consultation, which is perceived by them as much more demanding than the usual face-to-face ones they often participate in as part of their jobs. Also, our positive conclusions as to the usefulness of structured e-forum are in agreement with the ones of previous studies of other mechanisms of structuring electronic discussion and cooperation

in group decision support systems, such moderation, different leadership styles, scripts providing guidance to participants (e.g. Mark et al, 1999; Farnham et al., 2000; Munkvold, 2003; Kahai et al., 2007); their overall conclusions is that these mechanisms of structuring electronic discussion and cooperation have a positive impact on their efficiency and effectiveness.

Our investigation provides evidence that structured e-forum tools can be efficient means of high quality e-consultations on public policies among more sophisticated and knowledgeable discussion groups. They provide significant advantages, associated with the guidance and facilitation they provide to the participants: i) for thinking in a more structured way about the public policy under discussion, ii) for making more thoughtful and focused contributions, and iii) for examining more carefully and understanding better the postings of others. The above properties are expected to improve the communication and interaction among the participants, and the quality of their postings, contributing to a better realization of the 'deliberation models' proposed by the public participation literature.

Furthermore, the use of such advanced structured e-forum tools can drive significant transformations in the quantity and quality of communication and interaction of government agencies with citizens. This will provide government agencies more and higher quality information about the problems, needs, concerns and values of the groups of citizens and in general the societies they are serving, and thus stimulate and enable them to make in-time the required transformations and reforms in their public policies, programs, operations and legislations whenever conditions change. Such a high quality e-participation can be a strong driver of innovation government. Also, the use of structured ICT tools makes the analysis of participants' contributions easier, as it allows a more efficient summarization of them, and then a better exploitation in the following stages of the policy and decision making process.

However, we do not expect these benefits and the resulting transformations/reforms to be realized automatically. On the contrary there are three basic preconditions:

- a. Government agencies should develop appropriate mechanisms (e.g. specialized units with highly skilled and motivated personnel) for studying and processing these citizens' contributions, and then forwarding the main conclusions to the highest political management, in order to be integrated in the policy and decision making process at the highest level (avoiding possible filtering and attenuation by middle management layers).
- b. Also, a strong political will is necessary to 'hear' these valuable citizens' contributions, and take them seriously into account in policy and decision making, to a similar extent to the various organized groups ('lobbies'), which usually have too much influence on government decisions and policies.
- c. Overcome the 'inertia' that very often characterises government agencies, mainly due to their complexity (in terms of processes, rules and legislation), culture and lower exposure to competition (despite the growing trend for benchmarking and comparisons among similar government agencies and also with analogous private companies).

Also, it should be emphasized that on the contrary less sophisticated, knowledgeable and coherent groups might find the structured e-forum a less good and suitable solution, having difficulties in structuring their thoughts according to the requirements of this tool, and semantically annotating their opinions; this means that the mechanistic substitution of the unstructured ICT tools currently in use for e-participation by such structured ones might result in further exclusion of less sophisticated and knowledgeable groups from the political debates increasing 'digital divide'. Therefore a good solution would be the

adoption by Parliaments of an appropriate mix of approaches, i.e. for each law under discussion to organize:

- *one closed* electronic discussion in a structured e-forum tool, in which will participate only invited representatives of stakeholder groups, who will be normally more sophisticated and knowledgeable on the law under discussion, and also experts; this will give to more representatives of stakeholder groups the opportunity to express their opinions on laws under discussion (today due to time limitations are invited only a few of them – the most important ones - to come to the Parliament and express their opinions),
- *and also one open* and anonymous electronic discussion for the general public, using a normal (unstructured) forum tool.

This mixed approach could also include the exploitation at the same time of the emerging web 2.0 social media (enabling communication, collaboration, news sharing, social networking, multimedia publishing, broadcasting, etc.) as well, which have managed to attract high numbers of users; this will enable an even wider and more inclusive citizens' e-participation in the formulation of significant public policies, involving various different groups who do not usually visit the official e-participation stages of government organizations (Charalabidis et al., 2010).

CONCLUSION

In the previous sections of this chapter has been presented an investigation and systematic evaluation of the use of a structured e-forum tool, which is based on the IBIS framework, for e-consultations on public policy, focusing on its the most important, widely debated and at the same time most complex component, the formation of legislation. For this purpose we designed and implemented an

e-consultation pilot in cooperation with the Greek Parliament on a highly controversial law regulating the ‘Contracts of Voluntary Co-habitation’. It was evaluated using multiple methods: analysis of discussion tree, quantitative evaluation and qualitative evaluation. The conclusions were consolidated revealing advantages that the structured e-forum can offer, and at the same time its limitations.

It was concluded that the structured e-forum is better than the simple (unstructured) one, since it can enable a more focused and effective electronic discussion. However, it cannot be characterized as easy to use and intuitive (which is a critical requirement for e-participation systems); on the contrary it requires considerable mental effort, and poses significant difficulties and challenges to its users (e.g. correct characterization of their postings as issues, alternatives, comments, pro- or contra-arguments, or appropriate wording of the title of each posting so that it reflects the content of it in a few words and other participants can easily understand it).

The management implication of this study is that public organizations should adopt an appropriate mix of approaches in this domain: they can organize e-consultations on important public policies both with the wider public using simple unstructured e-forum tools, and also with the more sophisticated and knowledgeable representatives of stakeholders and with domain experts using more structured e-forum tools.

More empirical research is required for investigating the suitability of the structured e-forum for e-consultations on public policies among various citizens groups, covering both more and less educated/knowledgeable groups, and also various kinds of public policies, and different cultural and political contexts. Further research is also required for the development of advanced structured e-participation tools, which can drive efficient electronic discussions and at the same time are usable by wider citizens’ groups (e.g. with less discussion structure, or other models

of discussion structure). Finally it is necessary to conduct research on the exploitation of the emerging web 2.0 social media by government agencies for e-participation purposes, in combination with their ‘traditional’ e-participation channels (based on their own government e-participation websites).

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APPENDIX

Questions about the Structured E-Forum Tool

Q1. 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 forum?
<input type="checkbox"/> difficult <input type="checkbox"/> medium to difficult <input type="checkbox"/> medium to easy <input type="checkbox"/> easy
Q2. 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 forum?
<input type="checkbox"/> difficult <input type="checkbox"/> medium to difficult <input type="checkbox"/> medium to easy <input type="checkbox"/> easy
Q3. What is your general assessment of the structured forum as a tool for important e-consultations 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)?
<input type="checkbox"/> much worse <input type="checkbox"/> a little worse <input type="checkbox"/> a little better <input type="checkbox"/> much better
Q4. How do you assess the quality of the contributions (postings) entered by the participants in this e-consultation?
<input type="checkbox"/> low <input type="checkbox"/> medium to low <input type="checkbox"/> medium to high <input type="checkbox"/> high
Q5. To what extent did you learn new things and ideas from the contributions (postings) entered by the other participants in this e-consultation?
<input type="checkbox"/> to a very good extent <input type="checkbox"/> to a good extent <input type="checkbox"/> to a medium extent <input type="checkbox"/> to a poor extent