

## E-PARTICIPATION LEVELS AND TECHNOLOGIES

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### ABSTRACT

*For improving political participatory processes, many governments adopt information and communication technologies (ICT) to facilitate their relationship with citizens, which is known as "electronic participation". This paper investigates the literature seeking for diverse practices in this area, and concludes to a framework depicting the e-participation stage model (e-participating levels). Also, this work focuses on the performance indicators related to each level and the most suitable technical tools for these levels. Conclusions are depicted at the end.*

**Keywords:** *E-participation, e-government, e-democracy, e-participation framework, technical tools, levels of participation.*

### 1. INTRODUCTION

Citizens' participation in the political process is not a new phenomenon; it started in ancient Athens, which was predicated- when the number of citizens was small- on freedom of assembly of individuals in the agora of the polis (the marketplace of the city). But after the increase in the number of citizens, governments switched to the representative democracy [1]. Public authorities started to increase citizens' participation directly; a critical aspect of democratic practices [2]. Huge investments in ICT have been taken by governments all over the world to reap public participation benefits and to involve citizens in the public policy processes.

This paper proposes a framework that depicts clearly defined levels for e-participation, performance indicators for each level, and the most popular and suitable technical tools and technologies recommended. This paper is organized into four basic sections: the first section seeks to define the concept of e-participation by developing an understanding of this new phenomenon, the second and third sections will present two the levels and technologies and tools of e-participation. Finally, the last section includes some conclusions and future work.

### 2. THE CONCEPT OF E-PARTICIPATION

E-government research, and specifically work on e-democracy and e-participation, aims to refocus government on its customers (citizens and businesses), and provide models, technologies, and tools for more effective and efficient public administration systems as well as more participatory decision processes [3].

E-participation, therefore, involves "*the extension and transformation of participation in societal democratic and consultative processes mediated by information and communication technologies (ICTs), primarily the Internet*" [4, p. 400]. E-participation aims at achieving many goals such as: using available technologies to support active citizenship, enabling broader participation for reaching a wider audience, and enabling more informed citizens' contributions through providing accessible and understandable information to target audience [5]. In this vein many studies also have been done to differentiate between whether this new digital form of participation (e-participation) is really an extension of the conventional participation or if it's able to produce new forms of participation. Cantijoch and Gibson [6] concluded that online participation cannot be conceived as a new and independent mode but links and blends with existing forms. On the other hand, Saebo *et al.*, [7] introduced two forms of participation: the first form is government driven participation, where e-participation is the responsibility of the government and it is also primarily enacted by governments. The second is citizen-driven participation which means that the technology adaption and development is not only the responsibility of the government but a social movement made driven by citizens and enabled by network.

The European Commission (EC) declared that e-participation is reconnecting ordinary people with politics and policy-making, and making the decision-making processes easier to understand through the use of new ICTs [8]. However, many other definitions focused on the same principles, where most of them related e-participation directly to e-democracy, focused on citizens and governments as major poles in the e-participation process, and introduced ICT as a facilitator for this process and an enabler for communication bypassing time or space limits.

Based on the importance of e-participation, many initiatives have been launched all of them aimed to achieving better and greater participation of citizens. In doing so, many institutions and governments optionally implemented the recommendations of international organizations such as the United Nations, OECD and the World Bank, or in some cases many of them were constrained by the forces of globalism, economical crises, and the change in technology. Alonso [9] explains these initiatives according to two trends, the first one is the desire to improve and extend democracy and the second is the unstoppable progress of the process of globalization, which has changed the traditional rules of politics, and consequently those of administration. The European Union has funded more than 35 e-participation research projects with a total budget of over 120M€ during the last decade mainly through the FP5 and the Preparatory Action Programmes (Panopoulou *et al.*, [8]), EU's i2010 initiative, German government's eGovernment 2.0 Programme, European Citizens' Initiative since April 2012 [10]. On the other hand, many governments started to benefit from the intelligent technologies for its e-participation initiatives like SemanticGov and FIT in Europe, and the Digital Government Society (dg.o) and the Semantic Interoperability Community of Practice (SICoP, a joint initiative involving industry, academia, and government) in North America, where both support the use of state-of-the-art technologies in public agencies [3].

Jordan, like many other developing countries, tries to benefit from citizens' participation in its democratic process especially through the government initiatives and many other organizations. Examples of such bodies is 1) Partners-Jordan, which defines itself as "a Jordanian not for profit organization, committed to advance civil society, promoting mediation, conflict management and culture of change, and encouraging citizen participation in Jordan's social and political development". 2) Hayat Center for Civil Society Development, where they aspire to stimulate and facilitate the empowerment and development of local and regional communities' participation in the centralized decision-making (<http://pbcoalition.com/English/Jordan.htm>). 3) The National democratic institute (NDI) is a nonprofit, nonpartisan, nongovernmental organization that has supported democratic institutions and practices in every region of the world for more than two decades. NDI and its local partners have worked to establish and strengthen political and civic organizations, safeguard elections, and promote citizen participation, openness and accountability in government. This institute tries to achieve its goals through many initiatives such as the student political participation program (*Ana Usharek*). This initiative is described on their website as: "In February 2012, NDI officially launched its student political participation program, *Ana Usharek*, or "*I Participate*," which consists of bimonthly discussion groups at eight universities to equip more than 1,340 Jordanian students with knowledge of the basic principles of human rights and democracy. Students have also had the opportunity to meet with decisionmakers and parliamentarians to discuss the country's reform drive" (<http://www.ndi.org/jordan>).

To help characterize e-participation initiatives, the key dimensions of e-participation must be defined. Wimmer [11] used DEMO-net (a European Community funded a network of Europe's leading e-participation researchers) and developed a model to present ontology for describing the most important dimensions of e-participations for many goals. These dimensions are: the stages of policy-making, level of engagement, stakeholders in e-participation, and e-participation areas. Participation areas are defined as being supported by different e-participation tools and these tools being based on different emerging technologies. Also, each tool may be utilizing different channels of communication [12] like PC, TV, mobile or any other channels. However, Machintosh [13] introduced ten of these key dimensions as a benchmark for many e-participation researches later, these dimensions include the stages of policy-making, levels of participation, stakeholders in e-participation, rules of engagement, duration and sustainability, accessibility, resources and promotion, evaluation and outcome, e-participation areas, and critical success factor. This paper examines the levels, tools and technologies of e-participation.

### 3. LEVELS OF PARTICIPATION

The Organization for Economic Cooperation and Development (OECD) presented three levels for traditional participation and they are: First, information provision, which is considered the foundation for participation process [14] and includes the information flow in a one way relationship from the government (which produces and delivers information) to citizens. Second, citizen consultation, which depicts a two-way interaction in which the governments enables citizens and encourage them to provide feedback based on the definition of information. In this level, the government plays the basic role in defining the issues for consultation, sets the questions, and manages the process. After that, citizens are invited to share their views and opinions with the government. Third, citizen active participation, which is the third level in which active citizen's engagement is requested for defining and shaping policies (which is considered a form of partnership arrangement with the government with an equal standing for citizens in setting the agenda, and discussing alternatives), leaving the final decision under the responsibility of the government ([13] ; [15]). Medimorec *et al.*, [14] lately added a new level culminates the participation process which is the "codetermination", in which citizens make decisions usually with politicians.

The international association for public participation (IAPP) presented another schema that includes five levels of traditional participation, these levels are: 1) Inform, means providing the public with the necessary information to help them understand the situation from the problem to its solution. 2) Consult, to get feedback from the public. 3) Involve, aims to share the process with the public to understand and consider their concerns. 4) Collaborate, a partnership with the public in each aspect of the decision making process. 5) Empower, putting the final decision-making in the hands of the public [11].

Machintosh [13] presented a new schema for e-participation efforts to characterize the initiatives of e-democracy; the following are descriptions of proposed levels.

**E-enabling:** means using technology to enable participation and supporting those who rarely access the Internet, and so they don't take benefit from the information available. The role of technology here is to provide relevant information in an accessible and understandable format [16].

**E-engaging:** means using technology to engage with citizens and enable deeper contributions and support deliberative debate on policy issues through consulting a wider audience. Using the term "to engage" in this context refers to the top-down consultation of citizens by government, here citizens are considered as consumers of policy [16].

**E-empowering:** means using technology to empower citizens and support active participation and facilitate bottom-up ideas to influence the political agenda. Citizens are considered as producers for policies rather than just consumers as in the previous level (e-engaging).

Wimmer[11] introduced a modified schema that includes four levels of engagement of e-participation in the following manner:

**E-informing:** providing information (either by government or citizens) in a one-way channel, in the case of the government the official website is a good example and in the case of the citizens the e-petitions is a good one.

**E-consulting:** allowing stakeholders to contribute their opinions on specific issues of official initiatives by public or private agencies (either privately or publically) in a limited two way channel.

**E-collaboration:** the responsibility of final decision is on the officials but the stakeholders play an active role in proposing and shaping policy as an advanced two-way channel.

**E-empowering:** facilitates the transfer of influence, control, and policy making to the public [17], so the final decision becomes in the public hands, such as legally binding referenda.

Gatautis [17] claims that there is also an **e-involving** stage before the e-collaboration to ensure that the concerns of the public are understood and taken into consideration which is compatible with those levels proposed previously by Tambouris *et al.* 2007 (as cited in Fedotova, Teixeira & Alvelos, [18]). According to the previous discussion, the most agreed upon schema that comprehensively covers all distinct aspects of e-participation is a five levels schema (as per the work of Gatautis [17] and Tambouris *et al.* 2007(as cited in Fedotova, Teixeira & Alvelos, [18])), which is already defined by IAPP in the traditional participation. The following full descriptions of each stage are extracted from the work of Tambouris *et al.*.

- **E-Informing** is a one-way communication that provides citizens with online information concerning policies and citizenship.
- **E-Consulting** is a limited two-way channel that has the objective of collecting public feedback and alternatives.

- **E-Involving** is about working online with the public throughout a process to ensure that public concerns are understood and taken into consideration
- **E-Collaborating** is a more enhanced two-way communication between citizens and government, and a full partnership that enables citizens to actively participate in the development of alternatives and the identification of preferred solutions
- **E-Empowerment** is the delegation of final decision-making rights to the public, and implementing what citizens decide.

It is well noticed that the role of citizen is changing throughout the e-participation stages, from information consumer to active decision-maker. Also, the objective associated with using ICT is changing as we move along these levels. Fedotova *et al.*, [18] compares these levels with each other and differentiate the ICT use along these stages; they argue that ICT is used in the first stage (e-informing or e-enabling stage) to obtain information concerning policy making initiatives promoted by the government. In the second stage (e-consulting or e-engaging stage) ICT allows citizens' opinions to be collected on diverse topic(s) defined by the government. Finally, in the last three stages (e-decision making or e-involving, e-collaborating and e-empowerment) ICT supports citizens in their willingness to collaborate with the government (G2C and C2G) and between one another (C2C) in policy formulation and decision making processes.

#### 4. E-PARTICIPATION TOOLS AND TECHNOLOGIES

Research indicated that it is difficult to identify and understand the interactions between people and technology because of the versatile nature of technology, the plurality of tools, and the variety of actors in the participation process [19]. Such dimension measures how participants are engaged and with what devices this will be possible to support participation effectively. However, online participation services through information and communication technologies (ICTs) should be placed at the heart of e-participation process because these services form the essence of e-participation. Experimenting such tools is considered a conclusive evidence for the importance of the ICT tools in the success of e-participation projects. In 2000s the European Commission (EC) funded a number of e-participation projects under the e-participation preparatory action, the deploying of ICT, its maturity, and the newest trends in an online interaction were the common features of the most successful projects [20].

Sobaci [5] has developed a framework for the appropriate ICT tools according to the different e-participation's objectives and the features desired to attain these objectives, also Phang and Kankanhalli [21] proposed a framework that presented five objectives of e-participation and the best ICT tools to attain them. Abu-Shanab and Al-Dalou' [22] also proposed a framework that covered three levels, and the suitable technological tools needed for each level. Also, they proposed a list of performance indicators related to each level of e-participation. This paper tries to extend the work of Abu-Shanab and Al-Dalou' [22] and propose a framework that covers five stages (levels) with their technology tools available and performance indicators. The proposed framework is shown in Appendix A.

The most of the previous works for other researchers limited to three or four levels of e-participation and it was presented the tools and technologies associated with them through the desired objectives in a scattered way and there were no clear indications for the performance indicators for each stage to measure its success, so this paper tries to organize the extended levels of e-participation and link each of them with its best tools and technologies and the performance indicators for each of them.

Maciel, Roque and Garcia [23] declared the importance of social networks and virtual communities in citizen's participation process as a foundation for implementing e-democracy. The same conclusion was confirmed by Robertson, Vatrapu and Medina [24] who asserted the importance of social networks, especially Facebook in the last 2008 U.S presidential election and how the innovation of Barak Obama's use of ICT tools credited with his ability to get donors. However, they claim that social networks are considered a new type of online public sphere or a context for civic discourse and debate through public discourse and online discussions, where social networks can hold many opportunities for e-participation and e-democracy.

Jordan, one of the Arab countries that was influenced by social media (according to the Arab social media report, [25]), where many aspects were covered like the impact of social media on freedom of expression and media consumption behaviors, its empowerment of youth and women, and its role in

popular civic movements based on data collected in the first half of 2011. The last edition of the report analyzed data on Twitter and Facebook users in all 22 Arab countries, in addition to Iran, Israel and Turkey. To explore this continuing involvement of social media use in the region, a regional online survey was administered in 8 Arab countries (Jordan is one of them) to examine the use of social media and its impact on culture and society in the region. Thus several survey questions explored the relationship between the growth of social media and the influence on users' views of their communities and societies.

Moreover more intelligent technology will lead to more research areas serving the e-participation process. Peristeras *et al.*, [3] discuss four areas in the emergent of web 3.0 era (which combines web 2.0 with semantic web to facilitate e-participation through intelligent technologies). The first two areas, combining isolated and scattered information to create knowledge within government, and the last two areas, allow for mass collaborative public networks for discussing and formulating policy considers.

On the other hand, Scherer *et al.* [26] point that there are many indications for e-government innovation policy, two major ones are: multichannel and mobile government, and modern and future means of communication. These considerations and more others (such as increasing the equality of the political participation) led to the phenomenon of mobile participation which means using mobile phones for political participation. Banks (as cited in Hellstrom and Karefelt [27]) writes that mobile phones "allow citizens to engage more actively in civil society by monitoring elections and helping keep governments accountable". From this point, several governments have resorted to the use mobile phones channels to support political participation effectively. To achieve that, many governments launched mobile election monitoring initiatives to monitor elections and to facilitate citizens' participation. The initiative of UgandaWatch in Uganda in the elections of 2011 is a good example of such step. In the run up of these elections, a number of SMS enabled tools were deployed to increase the political participation: Political campaigns using mass SMS broadcasts, SMS application to determine voter registration status, and SMS news service subscription. The purpose was to provide citizens with a way to share their observations via SMS on various issues such as vote buying, registration hiccups, inappropriate campaign conduct, cases of violence, and general complaints or positive feedback. Although this initiative highlighted many challenges in this field but at last it has opened a new channel matter to all society.

## 5. CONCLUSION

The complexity of e-participation processes results from the multi disciplines included in this field. Based on the literature, this paper highlighted two of the most key dimensions of e-participation: the levels of participation and tools and technologies of e-participation. A framework was proposed as an extension to the previous research published in this area and is shown in Appendix A. The proposed framework links the levels with the technological tools available, and proposes suitable performance indicators for each level proposed and this is which missing from the previous researches in an organized way to link those tools, technologies and performance indicators for each clear level of e-participation.

Such framework needs a comprehensive empirical test to validate proposed levels and see if they will diverge into unique distinct dimensions. Also, future empirical research will validate the indicators proposed and to understand the links between them and the proposed levels. Finally, research is needed for more understanding of such evolving area, to focus on the importance of mobile participation and social networks as two ubiquitous tools for the government to strengthen the participatory political processes between governments and citizens.

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### Appendix A: The proposed Framework

Stage	Technical Tools	Performance Indicators
E-informing	E-mail (mailing list), e-meetings, virtual communities/online community networks (social networks), e-participation chat rooms, mobile phones/devices (text messages), Webcasts, GIS-tools, RSS Feeds, Online newsletters, FAQs, web portals, weblogs (blogs), video conferencing, Alerts, Wikis, Podcasting.	<ul style="list-style-type: none"> <li>- Number of e-mail alerts sent (according to e-mail list)</li> <li>- Messages sent to cellular phones and PDAs.</li> <li>- Number of visitors who access the published information by the government (visitors of e-government national website).</li> <li>- Number of news feeds and RSS to continuously update citizens with information from the media and blogs.</li> <li>- Number of search requests about published information through the search engine.</li> <li>- Number of access times to newsletters.</li> <li>- Number of subscriptions in the national feeds.</li> <li>- Number of e-meetings to be held</li> <li>- Information about employment opportunities</li> </ul>
E-consulting	E-survey, feedback forms, e-mail, e-polls, , newsgroups, weblogs (blogs), mobile phones/ devices, virtual communities/online community networks, consultation platforms, text-to-speech technology (natural language processing), e-panels, Podcasting, Wikis, e-participation chat rooms, , video conferencing, e-referenda, instant messaging	<ul style="list-style-type: none"> <li>- Does the site has a feedback feature on the national home page soliciting user input on the development of a future public issue? (Number of feedback messages on government policies).</li> <li>- The interaction of citizens in video conferencing and e-participation chat rooms.</li> <li>- Number of created e-mail accounts.</li> <li>- Number of responses to e-mails/mobile messages and online submissions.</li> <li>- The percentage of participators in the online polls.</li> <li>- Number of responses to surveys.</li> <li>- The ratio of participations in web forums for policy issues.</li> <li>- Number of comments on government's laws and policies.</li> <li>- Number of downloaded forms.</li> </ul>
E-involving	E-mail, virtual e-meetings, chat-rooms, discussion forums/boards, online virtual communities (social networks), video conferencing, , mobile phones/ devices (text messages), consultation platforms, online citizen juries.	<ul style="list-style-type: none"> <li>- Number of downloadable forms.</li> <li>- Providing e-signatures.</li> <li>- Number of bids which is done through the Internet.</li> <li>- Number of payments by cards.</li> <li>- Access to the government sites through its mobile versions.</li> <li>- Number of published results of citizens' opinions on the website.</li> <li>- Acknowledgement of received e-opinions explicitly.</li> <li>- Number of "send receipt" from government to citizens.</li> <li>- E-participation calendar available online.</li> <li>- Number of decisions under consideration</li> <li>- Number of decisions citizens interact in</li> </ul>
E-collaborating	E-debates, Web virtual meetings (chat-rooms,	<ul style="list-style-type: none"> <li>- E-decision making commitment publicized online</li> <li>- E-participation policy available online</li> </ul>

	discussion forums/boards), decision-making games, virtual communities/online communities networks (social networks, data analysis tools.	<ul style="list-style-type: none"> <li>- Government officials respond to citizen input</li> <li>- Number of uploaded videos and photos.</li> <li>- Government commitment to considering the results of e-participation in decision making.</li> </ul>
E-empowering	E-petition, e-voting tools, e- bulletin boards, e-polls, virtual e-meetings, chat-rooms, discussion forums/boards, e-Panel, Virtual communities/online communities networks (social networks), Argument Visualization Tools. Natural Language Interfaces.	<ul style="list-style-type: none"> <li>- Government provides confirmation receipt on citizen sent communication.</li> <li>- Government provide outcome on feedback received from citizens concerning the improvement of their services.</li> <li>- Number of voting in last local elections.</li> <li>- Number of entitled to vote in local elections</li> <li>- Score of involvement in community decision making process.</li> <li>- Score of influence in community decision making process</li> <li>- Archive for past discussion forums</li> <li>- Showing the results of polls online.</li> <li>- Showing the number of petition signatures.</li> </ul>