

# Barriers and Desired Affordances of Social Media Based e-Participation – Politicians’ Perspectives

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## ABSTRACT

The high rate of adoption of Social Media technologies and platforms make them naturally appealing for engaging citizens. Interestingly, despite the proliferation of e-Participation platforms, overall efforts towards mainstreaming Social Media-based and citizen-led political deliberations are still limited. Consequently, there is a paucity of research on effectiveness of Social Media technologies as e-Participation platforms; barriers to their use for e-Participation and their potentials to reshape deliberations on traditional e-Participation platforms. This paper investigates the perceived barriers to e-Participation and affordances of Social Media from the perspectives of senior decision maker and political actors. Grounded in the analytical framework for the duality e-Participation, we designed an instrument and interviewed 10 politicians and decision makers at different levels of government across three countries in Europe. Our results provide insights into barriers and perceived affordances of Social Media for e-Participation as well as the necessary conditions for increased adoption of Social Media for citizen-led participation.

## CCS Concepts

• Applied computing~E-government

## Keywords

e-Participation; Duality of e-Participation; Social Media Participatory Democracy; Online Political Deliberation; Social Media Mining

## 1. INTRODUCTION

The extensive efforts at mainstreaming e-Participation promised to deliver effective government-sphere to citizen-sphere communication; to enable effective, concurrent public participation

and feedback, and to introduce new ways of political participation [6, 11, 15, 28, 29]. The rapid adoption of Social Media enabled new opportunities to leverage informal communication channel for citizen participation purposes [10, 12, 22]. The efforts to leverage Social Media for e-Participation reflected the need for better citizen engagement, as Social Media use become more integrated into citizens’ everyday routine [17]. Bouman et al. [5] argue that the success of a particular social software design is determined not by the functionality but by the sociality support from the social

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software system; where sociality is understood as the enjoyment of companionship and social activities. The significant advantage of popular Social Media over other means of electronic communication so far (from an e-Government perspective) has been primarily in decreasing the digital divide and improving accessibility to information, hence increasing citizen trust and government transparency [4]. This spans directly from the ease of use and ubiquity of popular social networking platforms [20]. Nevertheless, despite the proliferation of e-Participation platforms, overall efforts towards mainstreaming Social Media-based and citizen-led political deliberations are still limited [26].

Macintosh et al. in [19] observed that, the current e-Participation methodologies widely neglect the spontaneous political discussions on Social Media as valid e-Participation, reflecting a strong preoccupation with the improvement of specific technical aspects of existing e-Participation platforms. Macintosh advocates that citizens owned informal communication channels create new means of e-Participation, therefore, contribute to a form of the duality of e-Participation hitherto understood as a dichotomy between government controlled classic e-Participation and Citizen-led e-Participation. Nevertheless, Macintosh et al. stress the duality (as oppose to dualism) as a complementarity of these two distinct e-Participation channels.

In this paper, we present the results of an investigation into the nature of the duality of e-Participation, with focus on the barriers to e-Participation and the possibilities brought by the new communication channel introduced by Social Media. We present comprehensive analytical framework and duality of e-Participation phenomenon analysis, based on the results gathered and extracted from a set of semi-structured interviews with politicians and decision-makers.

The rest of the paper is organised as follows: we present the related work and analytical framework used for the study of the duality, we elaborate on the methodology, we discuss the specific analytical instrument applied, we present the results and we conclude with key barriers and opportunities for using Social Media for e-Participation.

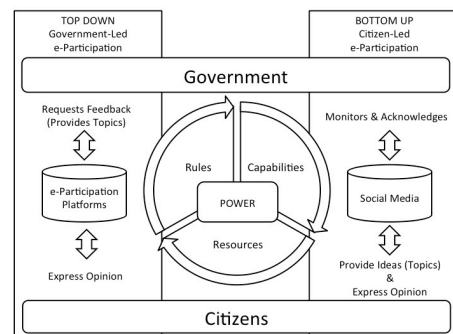


Figure 1. Integrated model for e-Participation

## 2. RELATED WORK

The related studies in the literature focus largely on the use of Social Media as a standalone channel for information dissemination for governments. Many studies look at the Social Media as an important communication channel with citizens in national and local elections. It has been shown that successful Social Media campaign can affect political popularity and hence can have a significant impact on the results of elections [12, 22]. Another important Social Media use in the e-Participation context is improved, Social-Media-supported disaster and crisis management, and policy development derived from a Social-Media-facilitated citizen reporting capabilities [2, 16]. In particular, Social Media have been playing an increasing role as rapid crowdsourcing and rapid response tools, especially in the event of crises (including political crises) and natural disasters [13, 21]. An improved communication and citizen direct coproduction through Social Media is considered a viable possibility [18]. Nevertheless, there is no clear strategies or methods developed that would ensure the replicability for successful use of Social Media for communication with citizens [20]. The concept of citizen coproduction and direct, active e-Participation via Social Media is still in its infancy [5].

In the context of using Social Media for e-Participation, there were several efforts to incorporate Social Media with existing e-Participation platforms as means of extending the e-Participation best practice with the citizen engagement benefits offered by Social Media. The current e-Participation platforms are mostly implemented in the form of standalone Web 2.0 digital forums, some of them with support for popular Social Media (Facebook or Twitter) publishing and post feed integration (in rare cases, two way content exchange is available [7, 23, 25, 27]). Few platforms offer more advanced solutions such as that presented by PADGETS [9] which performs an injection of special widgets into Social Media. These custom widgets enable information extraction from Social Media on very specific topics. Nevertheless, these related studies do not address the issue of content volume, nor the variable quality of contributions [1], and do not ensure sufficient innovation to support the dual e-Participation observed by Macintosh et al. [19]. We are aware of attempts to leverage broader the potential of spontaneous discussions on Social Media, such as the innovative approach presented in the WEGOV project [10]. Nevertheless, the research method focuses on technical aspects of Social Media content extraction without deep consideration of the synergy between current government-led solutions and citizen-led participation. The approach focuses mainly on technical aspects and challenges of e-Participation without consideration of the need for dynamic capabilities or reproduction and reshaping processes, making it insufficient to address the duality of e-Participation.

## 3. THEORETICAL BACKGROUND

In these sections we elaborate on the theoretical background to the analysis presented in this paper. In particular, in this study we leverage an analytical instrument (elaborated further in the methodology) built upon the Integrated Model for e-Participation as a framework for duality of e-Participation analysis.

### 3.1 Integrated Model for e-Participation

The Integrated Model for e-Participation (IMeP) [26] presented in Figure 1 is grounded in the integration of the Structuration Theory (ST), with the complementary Dynamic Capabilities Theory (DCT), in a single e-Participation social system model. ST proposed by Giddens [14] deals with the creation and reproduction of social systems while Dynamic Capabilities Theory (DCT) [30] enriches the model with the aspects of organizational adaptivity to

fast changing environments. IMeP employs two approaches to e-Participation: classic, Government-led e-Participation and the new, Citizen-led e-Participation. Following the Structuration Theory, these two modalities are exploited simultaneously to support the dynamic distribution of allocative and authoritative resources between citizens and decision makers in the context of decision or policy-making. Given appropriate resources, citizens exercise their agency to participate in the social-system re-production.



Figure 2. e-Participation aspects

The legitimacy and significance of citizens' contribution to policy making is strengthened directly through dynamic capabilities (derived from Dynamic Capabilities Theory) developed by the governments leading to explicit acknowledgement, consideration and subsequent (partial) adoption. We have identified the following types of core capabilities for realizing such integrated e-Participation framework: 1) adaptive capabilities including dynamic resources (re-) distribution and acquisition, rules re-production and reformation process; 2) absorptive capabilities including continuous monitoring process, participation shaping process, citizen information services; and 3) innovative capabilities including flexible monitoring process and ubiquitous e-Participation. These capabilities ensure continuous reflexive dialogue and dialectics among citizens and between citizens and decision makers respectively characterizing the dual-nature e-Participation process.

e-Participation employs a deliberation process having a particular structure and properties within a particular context. The base requirement for a social system (here linked to the collaboration process) can be defined as a dialogue of at least two personal systems or people in their roles [24]. Therefore, in line with the definition the act of interaction between citizens and decision-makers together with their related concepts should be considered a social system. In order to leverage social system theoretical lens for

e-Participation analysis it is necessary to enact first the fundamental and comprehensive e-Participation conceptualization.

### 3.2 Duality of e-Participation concepts alignment

The instrument for the analysis in this study has been built upon the theoretical framework for duality of e-Participation. Specifically, we elicit key aspects of e-Participation tackled by three takes on the duality:

- 1) The nature of duality of e-Participation
- 2) Methods of Harnessing the duality of e-Participation
- 3) Technology support the duality of e-Participation

The first two points relate to the barriers to realising the duality of e-Participation while the third point reflects the need for specific affordances for technologies to support the duality of e-Participation. For each of the points we identified a set of key corresponding aspects of e-Participation (Figure 2). Then, we align these key aspects to corresponding elements of the Integrated Model for e-Participation. This is presented in Figure 3.

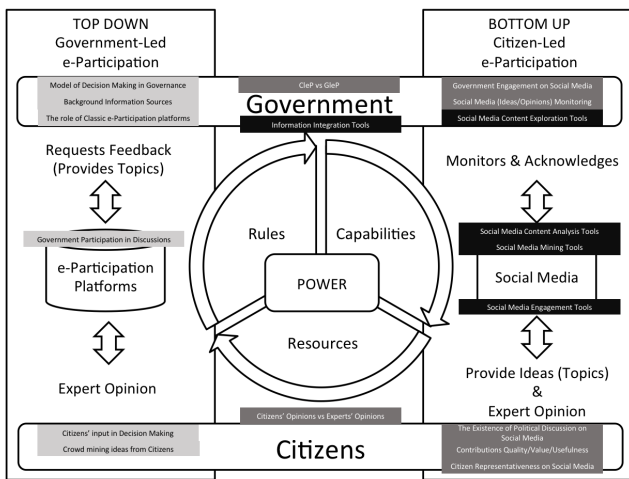


Figure 3. Alignment of key aspects to Integrated Model for e-Participation

We map the elements onto the e-Participation space based on the contextual relation of the elements with specific processes in the e-Participation cycle. The nature of the duality of e-Participation can be investigated by analysing the state-of-the-art e-Participation initiatives and the complementary, independent, spontaneous political discussions on social media. The corresponding aspects of e-Participation deal mostly with the current model of decision making: 1) how the decisions are being made, 2) how decision-making process incorporates citizens input, 3) how the background information and expertise essential for decision-making is currently acquired, and 4) the role of the classic e-Participation platforms in this process. Moreover, the scope of the consideration involves current efforts in including citizen’s input and ideas appearing on Social Media. Regarding the point, how to harness the duality of e-Participation, we discuss: 1) the existence of political discussions on social media, 2) the quality and representativeness of citizens’ contributions on social media vs. the volume of the information on social media, 3) the presence of experts and expert opinion on social media, and 4) how do the Social Media compare with the traditional e-Participation platforms, including common aspects, advantages and disadvantages. Finally, the technological support for Social-

Media-based e-Participation comes in various forms of Social Media analytical tools and information integration tools propositions. This includes specific solutions for content filtering, summarisation and explanation (visualisation, textual explanations). It also includes specific targeted dissemination and targeted engagement types of tools.

Aspects of e-Participation	ADAPTIVE CAPABILITIES	ABSORPTIVE CAPABILITIES	INNOVATIVE CAPABILITIES
CleP	Empower	Background Information Sources	The Existence of political discussions on Social Media
	Process		Contributions Quality/Value/Usefulness
	Shaping		Citizen Representativeness on Social Media
	Listening		Citizen Contribution Acknowledgement
GleP	Process	Citizens' input in Decision Making	Information Integration Tools
	Acknowledge		Social Media Content Analysis Tools
	Stimulate		Social Media Engagement Tools
	Request Participation		Social Media Content Exploration Tools

Figure 4. Mapping of Aspects onto e-Participation Ontological Space

The next step in our analysis is the specific mapping of the key aspects addressed by the e-Participation model onto an e-Participation ontological space created for the e-Participation domain analysis. Figure 4 shows explicitly how the specific aspects correspond to required adaptive, absorptive and innovative capabilities respectively. In particular, the aspects related to the nature of the “duality of e-Participation” describe the adaptive capabilities required by the governments; the means of harnessing the duality falls into absorptive capabilities category and technology corresponds with innovative capabilities.

## 4. METHODOLOGY

In this section, we elaborate on the methodology applied to the research work presented in this paper.

### 4.1 Research Questions

There are two fundamental research questions tackled in this work:

- 1) What are the barriers for Social Media based e-Participation?
- 2) What are the desired affordances for the technologies to support the Social Media based e-Participation?

In the context of our research, the barriers tackled by the first question are considered to have the source in the nature of the duality e-Participation and are also coming from the specific challenges in harnessing the duality of e-Participation.

The latter question refers to the specific desired affordances identified for the technology to support the duality of e-Participation by enabling Social Media monitoring, analysis and engagement.

## 4.2 Data Collected

The key data in the focus of this study has been collected through semi-structures interviews with e-Participation stakeholders between May and August 2015. The choice of semi-structured form of interviews has been determined by the type of the respondents that the interviews were directed to – politicians and decision-makers [3]. This type of stakeholders is characterised by very limited time for the interview as well as limited availability followed by a unique experience of each of the respondents. However, a common protocol has been used as a base for the interview process with relevant space provided for individual remarks. The interview was conducted with three major groups of stakeholders representing three levels of governance: 1) National level politicians bound to a specific constituency, 2) Local level politicians, 3) Local decision makers. Specifically, the respondents who agreed to take part in the interviews included ten people: five Senators (where two of them are former mayors) of different political affiliations, one independent senator, one local authority manager, and four government consultants and decision makers - members of advisory boards. The study has been conducted in the Irish context (due to easier access and availability for Irish researchers and better connection with local political scene),

therefore the most of the respondents are from Ireland. Irish politicians and decision makers agreed to participate in study hoping for the results to help to alleviate the Social Media participation challenges in Ireland. Nevertheless, we cross-check the results with some selected international interviewees to investigate how Irish context aligns to other western countries of similar democratic model. Specifically, we invited one public manager from the Netherlands and a government consultant from France. The participants from outside Ireland were invited not to bring a deeper understanding of the Social Media participation context in two other EU countries but to bring more objective, external perspective and to determine if there are major differences in findings across national political and public administration contexts. The interview was designed to take 45 min to 1 hour. During the interview, the participants were allowed to speak freely without interruption to express their opinion on particular matters.

All the interviews conducted for research purposes, have been voice recorded (with the disclosure of confidentiality) in order to capture as much information as possible from every interview session. Each of the recorded files has been carefully transcribed into a separate text document.

What is the nature of the duality of e-Participation ?	Model of Decision Making in Governance	Fixed Policy Model	Internal Policy Making	Policy Dependent Decision Making		
	Background Information Sources	Information from party members	Mainstream Media Information	Face to Face Canvassing	Information Collected at Events	Individual Social Media Exploration
	Citizens' input in Decision Making	Party Membership	Party Meetings	Face to Face Meetings	Mail Communication	Digital Communication
	Crowd mining ideas from Citizens	Lack of crowd mining of ideas	Individual Social Media Exploration			
	The role of Classic e-Participation platforms	Weak Dissemination of e-Participation	Low Supply of e-Participation Platforms	Short-living specialized initiatives	Low Citizen Participation	Low impact of e-Participation Platforms
	Government Participation in Discussions	Low Government Participation	Lack of Feedback from Government	Lack of Motivation of Government		
How to harness the duality of e-Participation?	The Existence of Political Discussion on Social Media	Abundance of Political Discussion on SM	No Clear Statistics			
	CleP vs GleP	Citizen preference of SM over e-Part	Emerging New Topics on SM	Ubiquitous SM		
	Contributions Quality/Value/Usefulness	Low Quality Contributions on SM	Limited Usefulness of Contributions on SM	Information Overload		
	Citizen Representativeness on Social Media	Limited circle of participants on SM	Lack of demographics information on SM	Lack of Location Information		
	Citizens' Opinions vs Experts' Opinions	Importance of general Citizens' opinion	Importance of Expert Opinion			
	Social Media (Ideas/Opinions) Monitoring	Infrequent and superficial SM analysis	Manual SM analysis	Time Consuming SM analysis	Low SM analysis benefit	
How technology can support the duality of e-Participation?	Government Engagement on Social Media	Participatory Policy Making	Lack of time for SM	Mediated Participation – SM Assistants		
	Social Media Mining Tools	Social Media Content Aggregation Tools	Information Sharing and Publishing Tools			
	Social Media Content Analysis Tools	Contributions Filtering Tools	Contribution Summarization Tools	Knowledge Management Tools		
	Social Media Content Exploration Tools	Data Explanatory Tools	Data Visualization Tools			
	Social Media Engagement Tools	Targeted Posting Tools	Demographics Statistics Tools	Social Media Dissemination Tools		
	Information Integration Tools	Content Linking Tools	Integrated Content Publishing Tools			

Figure 5: Analytical Model Concepts Alignment

## 4.3 Analytical Instrument

Now we present the analytical instrument used for the analysis. The instrument has been based on the specific mappings presented in the theoretical background of this document (and showed specifically in particular Figure 3 and Figure 4).

In Figure 5 we explicitly show how we align the fine-grained concepts to relevant aspects of e-Participation. This particular alignment provides theoretical base for the analytical instrument for analysis of the interview results. In particular, the key aspects of e-Participation elicited while constructing the instrument have been leveraged as a base for interview protocol questions while the

specific concepts were used for results analysis that is discussed in the next part of this document. Analysis of Data

A qualitative research approach was employed in analysing the data collected through interviews. This is due to the specific nature of the stakeholders interviewed and the interview method applied. All

the transcribed interviews were imported into NVivo<sup>1</sup> tool – a software platform for qualitative data analysis. We chose that tool as the set of capabilities offered by the solution corresponds well with the qualitative form of our investigation.

Name	Sources	References
▼ The Nature of duality of e-Participation	10	143
▶ Model of Decision Making in Governance	8	22
▶ Background Information Sources	9	47
▶ Citizens' input in Decision Making	10	33
▶ Crowd mining ideas from Citizes	8	12
▶ The role of Classic e-Participation platforms	7	15
▶ Government Participation in Discussions	6	14
▼ Harnessing the duality of e-Participation	10	181
▶ The Existence of Political Discussions on Social Media	8	9
▶ CleP vs GleP	7	13
▶ Contributions Quality, Value and Usefulness	8	41
▶ Citizen Representativeness on Social Media	8	56
▶ Citizens' Opinions vs Expert's Opinion	7	19
▶ Social Media (Ideas and Opinions) Monitoring	7	32
▶ Government Engagement on Social Media	5	11
▼ Technology support for duality of e-Participation	10	70
▶ Social Media Mining Tools	6	8
▶ Social Media Content Analysis Tools	7	19
▶ Social Media Conctect Exploration Tools	5	10
▶ Social Media Engagement Tools	10	30
▶ Information Integration Tools	2	3

**Figure 6. Analytical Model Core Concepts in NVivo**

Then, we have coded the documents using NVivo text coding feature. The coding procedure involves selection of the particular sentence, paragraph or whole section of the transcribed text and assignment of this fragment to a specific concept investigated in the analysis. The selected text acts as a reference or evidence for the issues considered. To enable coding, first, a relevant analytical instrument had to be constructed (as a base for NVivo data coding model). Therefore, NVivo analytical model has been derived from the concept alignment presented in Figure 5. In Figure 6 we present the high-level concepts as mapped from the base analytical model.

The figure also shows the number of text references relating to specific concepts.

NVivo tool enables the model to be refined as the analysis progresses. Therefore, the final model (NVivo file can be requested from authors – reference omitted) represents a refined version of the conceptualisation referred to before. The reason why the model may expand and change is as a result of decision makers and politicians indicating new important aspects and issues, not anticipated in the theoretical consideration. The process of re-shaping the model can be considered a validation and verification of the theoretical model initially developed. Despite the changes applied, the core of the model has been preserved. Therefore, we claim a correct alignment of our theoretical model to the “on the ground” experiences of politicians and decision makers in the use of e-Participation for policy-making.

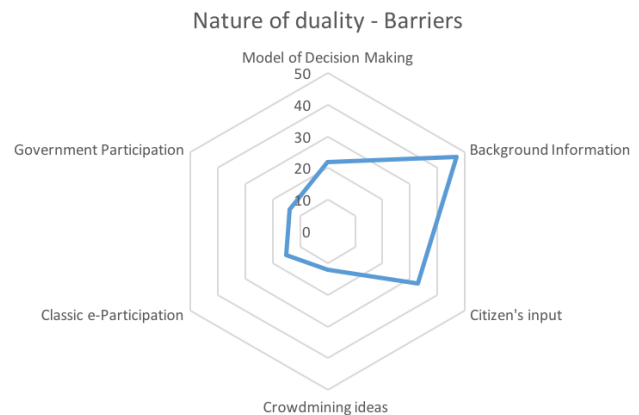
## 5. RESULTS

In this section we present the results of the analysis mapped onto the duality of e-Participation analytical framework implemented as NVivo model. In particular, we cluster the results around the three takes on duality of e-Participation posed in the theoretical background section of this document. For each aspect, we provide general Radar chart overview of the results followed by more detailed results in the NVivo tree. Here the number of sources represents the number of interviewees and number of references relates to the number of times the issue was related to by

interviewees (which in our model we consider the indicator for the importance of the specific issue).

### 5.1 Barriers to the duality of e-Participation

First, we present the results relating to the barriers spawning from the nature of the duality of e-Participation. As can be observed in Figure 7, the major barriers relate to the way how the key background information for decision making is obtained by the decision makers and the government.



**Figure 7. Nature of the duality of e-Participation – Barriers**

Specifically, direct contact with citizen groups (in particular when considering digital channels) is rather limited and considered not essential for key policy making (more details can be observed in Figure 8). The major source of information is self-research by exploring governments or organizational library and related internal information services (also online) or seeking for inputs from other party members. These barriers stem from major obstacles related to the nature of the democratic system. Specifically, politicians and decision makers rely on internal policy making and apply fixed policy making model. That is a consequence of the democratic model where politician and decision makers are obliged to follow the central policy and top-down strategy of their party or organization. This model does not allow direct bottom-up policy making. Rather, internal expertise is considered and if required, specific boards or consultancy groups are created and issues are discussed face to face. That implies another barrier which is lack of consideration of direct citizen-inputs into policy making (from digital media). Instead special face-to-face meeting are preferred. Citizens need to visit local offices or join dedicated meetings. Otherwise citizens are offered to join dedicated forums or citizens are asked to fill-in specific surveys disseminated. The surveys or questionnaires (even digital) introduce a means of censorship as government accepts only answers for the specific questions put without consideration of other possible options.

Other expected barriers (corroborated in the literature as well as e-Participation practice) such as low government participation and low motivation or issues with engagement faced by current e-Participation did not show to be of great significance in hindering the duality of e-Participation.

The next set of barriers considered in this study relates to barriers for harnessing of the duality of e-Participation. As can be observed

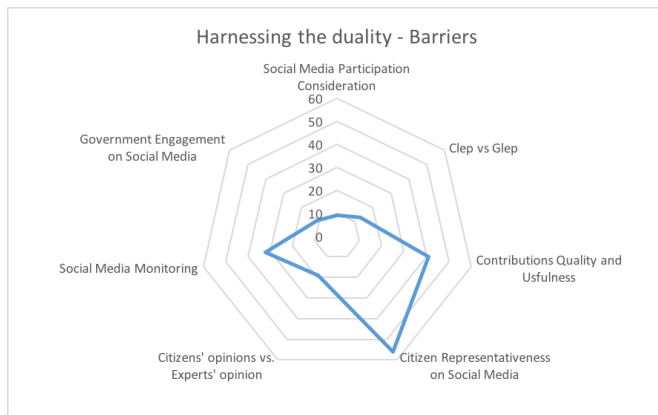
<sup>1</sup> <http://www.qsrinternational.com/product> (Accessed 21.11.15)

in Figure 9, the major obstacle to harnessing the duality relates to the citizen representativeness on Social Media.

As the primary barrier comes (see Figure 10) the perceived limited set of stakeholders present on Social Media and the anonymity of contributors.

Name	Sources	References
▼ The Nature of duality of e-Participation	10	143
▼ Model of Decision Making in Governance	8	22
● Fixed Policy Model	4	4
● Internal Policy Making	8	13
● Policy Dependent Decision Making	4	5
▼ Background Information Sources	9	47
● Information from party members	3	8
● Research	6	9
● Direct Contact with Citizen groups	7	12
● Information Collected at Events	2	5
● Individual Social Media Exploration	2	3
● Expert Information	5	7
● Mainstream Media	3	3
▼ Citizens' input in Decision Making	10	33
● Party Membership	2	3
● Political Meetings	3	4
● Face to Face Meetings, Surveys and Questionnaires	6	9
● Local Offices or Mail	4	5
● Digital Communication	7	7
● eMail and Phone	2	3
● By Vision and Mission	2	2
▼ Crowd mining ideas from Citizens	8	12
● Lack of crowd mining of ideas	2	2
● Individual Social Media Exploration	1	1
● Direct Contact with Citizens, Canvassing	2	3
● Surveys - Paper and Digital	4	6
▼ The role of Classic e-Participation platforms	7	15
● Weak Dissemination of e-Participation	5	5
● Low Supply of e-Participation Platforms	4	5
● Short-living specialized initiatives	1	1
● Low Citizen Participation	0	0
● Low impact of e-Participation Platforms	3	4
▼ Government Participation in Discussions	6	14
● Low Government Participation	6	6
● Lack of Feedback from Government	2	2
● Lack of Motivation of Government	5	6
▶ Harnessing the duality of e-Participation	10	181
▶ Technology support for duality of e-Participation	10	70

**Figure 8. Nature of the duality of e-Participation - Barriers Detailed**



**Figure 9. Harnessing the duality of e-Participation – Barriers**

In particular (as observed in Figure 10), the decision makers and politicians point out that lack of comprehensive information on the origin, demographics and identity of contribution renders the interaction on Social Media to be of very limited benefit to decision

making process. Specifically, decision makers cannot be assured at any stage of the discussion that the contributors are eligible to discuss the matters considered (are adult citizens of specific country or come from specific constituency – have voting rights).

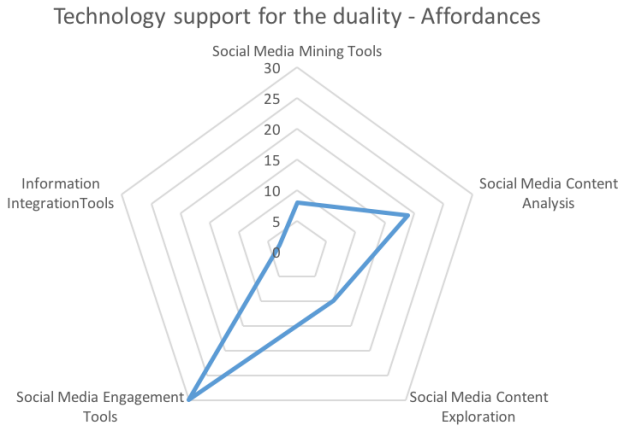
Name	Sources	References
▶ The Nature of duality of e-Participation	10	143
▼ Harnessing the duality of e-Participation	10	181
▼ The Existence of Political Discussions on Social Media	8	9
● Abundance of Political Discussion on SM	5	5
● No Clear Statistics	4	4
▼ CleP vs GleP	7	13
● Citizen preference of SM over e-Part	4	4
● Emerging New Topics on SM	3	6
● Ubiquitous SM	0	0
● GleP as broadcasting tool	2	3
▼ Contributions Quality, Value and Usefulness	8	41
● Low Quality Contributions on SM	6	10
● Limited Usefulness of Contributions on SM	7	14
● Information Overload	5	6
● Biased Opinions, Specific Agenda, Attacks	3	4
● Lack of Moderation	2	3
● Lack of Focus	1	2
● Lack of Structure	2	2
▼ Citizen Representativeness on Social Media	8	56
● Limited, anonymous or very specific circle of participa...	8	28
● Lack of demographics information on SM	6	9
● Lack of Location Information	6	10
● Misinformation	4	8
● Privacy Issues	1	1
▼ Citizens' Opinions vs Expert's Opinion	7	19
● Importance of general Citizen's opinion	6	10
● Importance of Expert Opinion	7	9
▼ Social Media (Ideas and Opinions) Monitoring	7	32
● Infrequent and superficial SM analysis	5	9
● Manual SM analysis	6	11
● Time Consuming SM analysis	1	1
● Low SM analysis benefits	1	2
● Managing Output (Broadcasting) rather than Monitoring	4	9
▼ Government Engagement on Social Media	5	11
● Participatory Policy Making	1	1
● Lack of time for SM	4	5
● Mediated Participation - SM Assistants	4	5
▶ Technology support for duality of e-Participation	10	70

**Figure 10. Harnessing the duality of e-Participation - Barrier Detailed**

Also, the lack of information on demographics and additional information on participants (like expertise or occupation) hinders effective debates on specific issues (where knowledgeable and direct stakeholders are preferred in discussion). These barriers in part impact other set of obstacles such as low quality and usefulness of contributions. Lack of restrictions on participation (to key stakeholders) implies information overload. Moreover, the anonymity of contributors encourages “empty” discussions and hate speech that hinders constructive deliberation. Also, some of the participants indicated often bias, discussion hijacking and targeted attacks through Social Media from their political opponents (via anonymous accounts). The last set of significant barriers consistent of issues related to difficulty in direct exploration and monitoring of Social Media while seeking for valuable inputs. In particular, the manual exploration by politicians and decision makers makes them prone to face obstacles discussed before (it is difficult to find relevant contributions and contributors) while posing a threat of verbal or written harassment or simply wasting time on ineffective (from policy-making support perspective) interactions.

## 5.2 Desired affordances for the technologies to support the duality of e-Participation

The last set of the results relates to the necessary affordances for the technology to support the duality of e-Participation. As can be observed in Figure 11, the strongest indication for the desired affordances for the technology to support the duality of e-Participation relates to tools enabling more constructive and effective engagement of government into conversation with citizens on Social Media. In particular, as indicated in the barriers section, specific technologies are needed that would provide essential, rich information on contributors (location, demographics, affiliation, expertise).



**Figure 11. Technology support for the duality of e-Participation – Affordances**

That would implicitly improve the quality of the information input (by offering more relevant, valid and credible contributions) at decision makers disposal. Moreover, decision makers and politicians seek information on the mood (sentiment) of the relevant stakeholders to evaluate the feasibility of new policies or the perception of the existing policy making (though within the scope of valid stakeholders). The other important affordance relates to the tools enabling more effective Social Media content analysis. As can be observed in Figure 12, major improvements should be offered to alleviate the information overload and filter the contributions to the most valuable and relevant to specific policy issue. This includes specific methods and tools to summarize and manage content, as even if filtered, the valuable contributions can reach significant volumes on social media. Other set of tools again is related with technologies enabling better contributor's evaluation (including popularity metrics) and enabling more targeted engagement with Social Media for more efficient content exploration. Considering all the features mentioned, specific visually rich interfaces and explanatory solutions should be provided (like dashboards with charts, textual summaries and network graphs). These features are essentials for decision makers and politicians to comprehend the rich information provided by automatic summarization and content and contributor groups clustering tools.

Name	Sources	References
▶ The Nature of duality of e-Participation	10	143
▶ Harnessing the duality of e-Participation	10	181
▼ Technology support for duality of e-Participation	10	70
▶ Social Media Mining Tools	6	8
▶ Social Media Content Agregation Tools	6	8
▶ Information Sharing and Publishing Tools	0	0
▶ Social Media Content Analysis Tools	7	19
▶ Contributions Filtering Tools	7	7
▶ Contribution Summarization Tools	5	8
▶ Knowledge Management Tools	3	4
▶ Social Media Content Exploration Tools	5	10
▶ Data Explanatory Tools	4	4
▶ Data Exploration and Navigation Tools	4	4
▶ Social Popularity Statistics	2	2
▶ Social Media Engagement Tools	10	30
▶ Targeted Posting Tools	4	8
▶ Demographics Statistics Tools	3	4
▶ Social Media Dissemination Support Tools	1	1
▶ Mood (Sentiment) Statistics Tools	9	11
▶ Social Influence Boosting Tools	4	4
▶ Self-Moderation Tools	1	1
▶ Instant information	1	1
▶ Information Integration Tools	2	3
▶ Data Integration Tools	1	1
▶ Integrated Content Publishing Tools	2	2

**Figure 12. Technology support for the duality of e-Participation - Affordance detailed**

## 6. DISCUSSION

The analysis presented identifies a set of barriers and opportunities for harnessing the duality of e-Participation observed by Macintosh et al. in [19]. In particular, our work, unlike the past e-Participation studies ([8, 10, 18, 22]), focuses not only on citizens' but rather looks on the decision makers' and politicians' perspective on Social Media participation. The study by Kuzma [16] investigates the current (limited) use of the Social Media by governments and identifies the missed potential for the use of that channel. However, this is presented without deep investigation into the reasons for limited employment of Social Media for e-Participation. The related work by Effing et al. [12] investigates the link between specific activity of the politicians on Social Media and citizens casting votes on specific individual (in the context of elections) however without analysing the politician or decision makers perspective on Social Media as tool for e-Participation. Therefore, in our work we sought to provide a gap analysis and draw tangible options for harnessing the duality of e-Participation, derived from the decision-maker and politician's perspective. In particular, our results show that despite over a decade of experience in designing and deploying e-Participation platforms and attempts to employ Social Media for e-Participation, a significant misalignment persists, between the capabilities delivered by socio-technical platforms and the specific needs presented by decision makers. Therefore, our work augments, and extends the observation made by Macintosh et al. in [19] by identifying specific challenges and factors contributing to dualism (as appose to duality) of Social Media and e-Participation; we explain the main reasons for limited politicians and decision makers involvement in political discussions with citizens on Social Media (followed by limited impact of discussions on social media). Based on our results, we argue, that despite significant advancement in e-Participation methods and tools, the traditional models for policy-making prolong with limited political process innovation. Politicians seldom engage with citizens directly, with the majority of the citizen input still transmitted to policy-making agenda through the representation of local politicians in face to face meetings or through surveys. That introduces implicit censorship of citizens'

input (with specific limited channels and politicians themselves as a bottleneck). Therefore, only a handful of selected ideas reaches the higher decision-making instances. Politicians acknowledge the existence of policy-related discussions on Social Media. Nevertheless, it is rare for politicians to leverage Social Media for citizen-generated content monitoring, mining for ideas or for citizen engagement on broader scale. Politicians and decision-makers consider social media only a rapid feedback and dissemination solution with not much emphasis put on the possible long-term impact on policy-making. This is due to, generally perceived low quality of contributions and misrepresentation (or rather lack of means to verify the representativeness) of many important social groups on Social Media. Moreover, anonymity and prone to manipulation, standard interaction model results in a lack of trust in the authenticity (genuineness) and validity of the contributions on Social Media. Both classic e-Participation platforms and Social Media are often employed as yet another, one-way dissemination channel for broadcasting information, on par with mainstream media like newspapers, radio and television. The lack of easy to use, comprehensive and universal tools for obtaining information and ideas, supports the existing “internalism” of political organisations.

Nevertheless, Social Media solutions are considered by decision makers a valuable starting base for future solutions for inclusion of citizen opinions in policy making. Decision makers do not deny the potential that lies in leveraging the classic e-Participation platforms combined with information stream from Social Media. In contrary, the opportunity is seen in taking the existing tools to the next level with automatic (or semi-automatic) data analysis. Specifically, data filtering, aggregation, information summarisation and explanatory tools built on top of the existing solutions are seen as pivotal to harness the potential of citizen contributions in policy making. Moreover, solutions that could enable selective information mining and interaction with citizen based on specific citizen-profile-specific properties (like locations-constituency, age, reputation and influence) are considered essential. Therefore, it is apparent that technology can support the duality of e-Participation, by facilitating and improving already existing e-Participation information retrieval and information management processes and tools.

We cannot claim the absolute completeness of the results presented in this study. Our sample represents a relatively limited set (yet representative group) of decision makers and politicians, largely informed by Irish political context. Nevertheless, the answers provided by two international participants showed to be strictly in-line with the suggestions by Irish interviewees. Therefore, we claim a correct alignment of our analysis to duality of e-Participation challenges set by Macintosh et al. in [19]. Thus, we believe our results deliver a solid starting base for future, broader research on duality of e-Participation in more global setting. This study creates a roadmap for future e-Participation research as well as next-gen e-Participation platform design & development. In particular, we believe that more investigation has to be done into citizen representativeness on Social Media (also methods for alleviating the anonymity and variable quality of contribution), investigation into politically-valuable information entropy on Social Media, as well as the alignment of democratic and political processes to Social Media-based e-Participation needs. Finally, we provide some clear directions (for e-Participation platform designers, developers and researchers) for designing and using specific tools for alleviating some of the challenges identified and for harnessing the of duality of e-Participation

## 7. CONCLUSION

We have sought in our work to provide a better understanding of the shortcomings of the current approach to leveraging Social Media for e-Participation and desirable changes for more effective Social Media exploitation for policy making. This paper complements existing research as it focuses on the specific barriers and challenges faced by the Social Media supported e-Participation in the context of proliferation of spontaneous citizen discussions on Social Media. Current e-Participation research works have focused primarily on the technological improvements of the existing e-Participation platforms with very basic Social Media integration consideration or focus on benefits of using Social Media in political campaigning and information broadcasting. The scientifically grounded, complementary analysis of the politicians’ and decision makers’ input on e-Participation issues and desired improvements, provides a practical context and key directions for future e-Participation evolution.

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