Leveraging European Union Policy Community through Advanced Exploitation of Social Media

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Abstract. The first generations of social media exploitation by government were oriented towards the general public. Evaluations of them have shown that they can provide some insights into the perceptions of the general public, however in order to achieve the required higher levels of quality, depth and elaboration it is necessary to target specific communities having strong interest and good knowledge on the particular topic under discussion. The research presented in this paper makes a contribution in this direction. It develops a novel approach to social media exploitation by the European Union (EU), which aims at leveraging its policy community, which consists of a big network of individuals/policy stakeholders having various policy related roles and capacities, geographically dispersed all over Europe. Its theoretical foundation is policy networks theory. Based on a series of workshops, in which a large number of such individuals participated, the structure of the EU policy community is initially analysed, then the proposed approach is formulated and elaborated, and finally the fuctional architecture of an ICT platform for supporting it is designed. Their main pillars are: important policy stakeholders' profiles and reputation management, relevant documents' repository and relevance rating, and finally advanced visualized presentation of them.

Keywords: Web 2.0, social media, government, policy community, policy network, reputation management.

1 Introduction

Social media have been initially exploited by private sector firms, mainly for enhancing their marketing, customer service and new products development activities, and later by government agencies, mainly for enhancing communication and interaction with citizens, increasing their engagement and participation in public policy making processes, and collecting opinions, knowledge and ideas from them, [1-5]. Though the history of social media exploitation in government is not long, there

has been a rapid evolution in the relevant practices, so that we can distinguish some discrete 'generations' in them, which are outlined in the following section 2. The first generation of social media exploitation in government was based on the manual operation of accounts in some social media, while the subsequent generations adopted more automated approaches exploiting the application programming interfaces (API) of the targeted social media [6-11]. However, all previous generations share a common characteristic: they were oriented towards the general public, and did not target any particular group. The first evaluations of them have shown that they can provide valuable insights into the perceptions of the general public, but in order to achieve the required higher levels of quality, depth and elaboration it is necessary to target specific communities having strong interest and good knowledge on the particular topic/policy under discussion [12-13].

The research presented in this paper makes a contribution in this direction. It develops a novel approach to social media exploitation by the European Union (EU), which aims at leveraging its policy community, consisting of a big network of individuals/ EU policy stakeholders having various policy related roles and capacities, and geographically dispersed all over Europe. The above context is quite interesting, due to the long and extensive debate about the EU 'democratic deficit' (see for instance [14]), one of its main dimensions being the limited accessibility of its main institutions to the multiple stakeholders of the EU policies dispersed in all member states. Its theoretical foundation is the abovementioned policy networks theory. The research presented in this paper has been conducted as part of project EU-Community (for more details see http://project.eucommunity.eu/), which has been partially funded by the 'ICT for Governance and Policy Modelling' research initiative of the EU.

The paper is organized in seven sections. In the following section 2 the background of our research is presented. Then in section 3 the research methodology is described. In the following three sections the first results of our research are outlined: the identified structure of the EU policy community (in section 4), the basic concepts of the proposed novell approach (in section 5), and the functional architecture of the required supporting ICT platform (in section 6). The final section 7 summarizes the conclusions and proposes future research directions.

2   Background

2.1   Social Media in Geovernment

It is widely accepted that social media have a good potential to drive important and highly beneficial innovations in government agencies, both in the ways they interact with the public outside their boundaries, and in their internal operations and decision making [5]. They can lead to the creation of new models and paradigms in the public sector: i) social media-based citizen engagement models, ii) social media-based data generation and sharing models, and iii) social-media based collaborative government models [3]. According to Don Tapscott [15] 'the static, publish-and browse Internet is being eclipsed by a new participatory Web that provides a powerful platform for the

reinvention of governmental structures, public services and democratic processes', leading to the emergence of a new 'Government 2.0' paradigm, which is quite different from the previous paradigms. Social media provide to government agencies big opportunities for: i) increasing citizens' participation and engagement in public policy making, by providing to more groups a voice in discussions of policy development, implementation and evaluation; ii) promoting transparency and accountability, and in this way reducing corruption, by enabling governments to open up large quantities of activity and spending related data, and at the same time enabling citizens to collectively take part in monitoring the activities of their governments; iii) crowdsourcing solutions and innovations, by exploiting public knowledge and creativity in order to develop innovative solutions to the increasingly complex societal problems [1-5].

The first generation of social media exploitation in government was based on the manual operation of accounts in some social media, posting relevant content to them (e.g. concerning current and future policies and activities) manually, and then reading citizens' interactions with it in order to draw conclusions from them. It was quickly realized that this approach was inefficient, and this gave rise to the development of a second generation of social media exploitation in government, which is characterised by higher level of automation of the above tasks, taking advantage of the extensive and continuously evolving API that social media increasingly provide [6-8]. In particular, the main characteristics of this second generation are:

a) the automated posting of policy related content in multiple accounts of the government agency in various social media, using their API, in order to stimulate citizens' reactions and relevant discussion,

b) the automated retrieval of various types of citizens' interactions with this content (such as number of views, likes and retransmissions, comments, etc.), and/or other relevant content, using again the corresponding API,

c) and the sophisticated processing of these interactions in order to support drawing conclusions from them.

This approach can be viewed as an 'active crowdsourcing' by government, in which the latter poses a specific policy related topic/question through its postings, and aims to collect citizens' reactions, proposals and ideas on it.

However, the above approach necessitates that citizens are attracted in the social media accounts of government agencies, and move their political discussion there. Very often this is difficult: citizens have already some well established electronic spaces where they are conducting their political discussions, such as various political blogs, news sites, etc., which they perceive as more 'independent' and friendly, and they find no reason to move their political discussions to government agencies' social media accounts. This gave rise to the development of a third generation of social media exploitation by government [9-11], in which government agencies go beyond their social media accounts:

i) they retrieve the extensive public policy related content created by citizens freely (without any government initiation, stimulation or moderation) in numerous social media sources (e.g. political blogs and microblogs, news sites, etc.), in a fully automated manner, using their API,

ii) and make advanced linguistic processing of it, in order to extract needs, issues, opinions, proposals and arguments raised by citizens on a particular domain of government activity or policy of interest.

This extension can be viewed as 'passive crowdsourcing' by government, in which the latter is not actively conducting crowdsourcing (by posing to citizens particular discussion topics or questions, as in the previous approach), but remains passive, just 'listening' to what citizens discuss, and analyzing the content they freely produce.

The above three generations of social media exploitation by government share a common characteristic: they were oriented towards the general public, and did not target any particular group. The first evaluations of them (e.g. [7], [12-13]) have shown that they can provide useful 'high-level' information concerning advantages and disadvantages of existing government policies, and also important issues and problems, as perceived by social actors, as well as some solution directions they propose. This information is definitely useful for the design of public policies taking into account the perceptions and opinions of the general public. However very often it is at a too high level and lack depth and elaboration. Therefore in order to achieve more depth, elaboration and quality it is necessary to target specific communities that have strong interest and good knowledge on the particular topic/policy under discussion. In this direction policy networks can be very useful; in the following section a review of previous literature on them is provided.

2.2   Policy Networks

Extensive research has been conducted in the political sciences concerning policy networks, which has revealed their importance in the modern governance system for the formulation and implementation of public policies [16 - 18]. As policy networks are defined sets of formal and informal institutional linkages between various both governmental actors and non-government actors (such as representattives of professions, labour unions, big businesses and other interest groups) structured around shared interests in public policy-making and implementation. They first gained currency and importance in the 1970s and especially the 1980s, when governments expanded their involvement in society and the economy, so policy making became much more complex, specialized, and fragmented than previously. In this context of increased complexity and specialization governments realised that previous unilateral modes of governance are insufficient, since they needed the resources and cooperation of non-state actors (initially economic actors and later other social actors as well) in order to have predictability and stability in their policy-making environments. The emergence of policy networks, in which state actors and non-state actors were cooperating (and sometimemes bargaining) for policy formulation and implementation was seen as a response to this context. This trend was strengthened later due to the increasing complexity of the big social problems that had to be addressed through public policies, the globalisation of the economy, and also the emergence of supranational governance institutions, such as the European Union, which undertook some competences from national governments, reducing their power and intervention capacity [19-21]. In policy networks the non-state actors provide to the state actors on

one hand information, knowledge and expertise, and on the other hand support for the formulation and implementation of public policies, and legitimization of them; in return the former have the opportunity to influence the public policies (e.g. legislation, allocation of government resources) towards directions beneficial to them.

There are important differences among policy networks functioning in various countries and sectors with respect to several characteristics, such as the number and type of participants, the balance of power among them, the distibution of important resources, the density of interaction among participants, the degree of homogeneity in value and beliefs and the functions performed, which impact significantly participants' behaviour and policy outcomes [22-25]. This has lead to the development of several policy network typologies. In [22-23] eight types of policy networks are identified, based on three structural characteristics of the participating state and society actors: the bureaucratic autonomy and the coordination capacity of the state actors, and the degree of mobilization and organizational development/capacity of societal actors; each of them is more appropriate for a particular context (sector type:expanding, stabilizing or declining) and policy type: anticipatory, or reactive)). It should be noted that in some of these policy networks government agencies are dominant (state directed networks), in some others societal actors have more power (clientele pluralist networks), while there are more 'balanced' ones in which there is balance of power between state and economic actors (corporatist networks). Another important characteristic of policy networks is the density of interactions among participants: according to [25] networks that are stable over time and are characterized by dense interactions among network members can foster the development of shared values and beliefs concerning desirable policy objectives and instruments, and also cooperation rules.

At the same time policy networks are important mechanisms for and facilitators of policy changes in cases of important changes in the external context (e.g. economic, ideological, knowledge, institutional changes) [25-27]. Contextual changes are sensed by one or more network's actors, who inject new ideas to the network, which are then transmitted to the other actors; furthermore, very often external context changes lead to changes in policy network's composition, entry of new actors, and also changes in the levels of influence of the existing actors. The above lead to collective awarenes of the changing external context and the inability of network to address it, and to changes of the perceived strategic interests of the individual network partners and the balance of strategic resources among them, resulting in the gradual development of new foundations and bases for collective strategic action, and finally incremental or paradigmatic policy changes.

Policy networks today play in general a significant role in deciding which issues will be included and excluded from the policy agenda, in shaping definitions of policy problems, and also the behaviour of actors through defining 'the rules of the game', in the selection of appropriate solutions, privileging certain interests and in general in shaping the substance of public policy [18]. For this reason it is important that policy networks are 'balanced' (=include all the important stakeholders) and transparent (=the positions of the stakeholders are visible and clear, and serve as bases for the formulation of public policy) to the highest possible degree.

3   Research Methodology

In order to gain a better understanding of the structure of EU policy community, formulate and elaborate the proposed approach of leveraging it by exploiting the social media, and also collect the specific users' requirements from a supporting ICT platform, thirteen workshops (named as CreActiv1 to Creactiv13) were organized as part of the preparation and the implementation of the abovementioned EU-Community project. The EurActiv.Com (a leading EU policy online media network (www.euractiv.com), which participates as partner in this project) and the Fondation EurActiv Politech (a public service foundation (www.euractiv.com/fondation) having as main mission 'to bring together individuals and organisations seeking to shape European Union policies, also partner of this project') were the organizers of these workshops. The participants were various representatives of important EU policy stakeholders (such as industry federations), members of the advisory boards of EurActiv.Com and Fondation EurActiv Politech, thematic experts in several EU policies (such as the renewable energy policies), policy analysts, registered users of EurActiv.Com portals; also permanent staff of various hierarchical levels from the European Commission, including the Director-General of European Commission DG Connect.

The first five workshops aimed mainly to gain a better understanding of the structure of EU policy community, and also to formulate and elaborate the proposed approach. The next five workshops had as main objective to elicit and collect users' requirements from an ICT platform suppoting the implementation of this approach. The final three workshops aimed to validate and elaborate the findings of the previous ones; also their participants filled a questionnaire concerning the EU policy related tasks they needed support for. The large experience of EurActiv.Com and Fondation EurActiv Politech in EU public policies formulation through extensive consultation with stakeholders (who very often publish stakeholders' position documents on various EU thematic policies in the portals of EurActiv.Com) was very useful for the successful execution of the above tasks.

4   Structure of EU Policy Community

From our analysis it has been concluded that the EU, due to the big number of its involvement and intervention domains, the complexity and at the same time the importance of its policies, which concern its 27 member states (being quite heterogeneous in terms of economic development, political traditions, culture, etc.), has a large policy community. There are numerous social groups, organizations and persons, both in Brussels and in the 27 member states' capitals, who have some interest in EU policies and make systematically contributions in order to influence them (e.g. express opinions, positions and proposals, or provide relevant information and expertise). The EU relies much on these contributions. The above EU policy community can be broadly divided into three groups:

I) <u>Decision makers:</u> This group includes mainly the 'institutional triangle' formed by the Commission, representing the general interests of the EU, the European

Parliament, representing the peoples, and the Council, representing the Member States; these three institutions lay down the policies and legislative acts that apply throughout the EU. It also includes the European Investment Bank, the European External Action Service and the decenrtalised agencies and bodies (currently they are about 30). There are numerous employees of the above organizations involved in the formulation and implementation of EU policies with various roles.

II) <u>Influencers:</u> This group includes several hundred EU industry federations representing the interests of their industries at European level, and also many 'think tanks', mainly policy or research institutes performing research and advocacy concerning various EU policy related topics, such as social policy, technology, economic policy and culture; most of them are non-profit organizations, funded by governments, parties, advocacy groups, or businesses, or derive revenue from consulting or research work related to their projects. Furthermore this group includes many non-governmental organizations (NGOs), which pursue various social aims, operating independently from any form of government. Finally there are many multinational corporations having offices in Brussels, which aim to represent and promote their interests and requirements concerning their activities in the European market.

III) <u>Policy Analysts:</u> This group includes many international media organisations that have journalists specialised and highly knowledgeable in EU policies and operation (some of these media are generic, while some others specialised in the EU, such as the EurActiv.Com). Also, there are many Brussels-based consultancy firms, which have expertise in the EU policy process in general, or in particular policy domains, and provide companies, public and private institutions, with guidance and support for influencing EU policies and decisions and having access to European funds.

5   The Proposed Approach

Based on the conclusions of the evaluations of previous generations pf social media exploitation in government (section 2.1), on the previous research on policy networks (section 2.2), and also on the analysis of the needs of the EU policy stakeholders (using the research methodology described in section 3), we developed a novel approach to social media exploitation by government agencies that aims at leveraging their policy networks. It focuses on leveraging the extensive policy community of the EU (which has been described in the previous section 4) through advanced exploitation of social media, however it has a wider applicability for any type of government agency. From our workshops (see section 3) a clear conclusion was that the main need of EU policy stakeholders is to be better informed on the most knowledgeable and credible people and the most relevant documents on a specific policy related topic they are interested in, and also to associate the latter with the stages of the EU policy processes.

Therefore the main characteristics of the proposed approach are:
- it focuses on the EU policy community, and not on the general public, and aims to leverage it by increasing its 'interaction density' and also interaction quality, which as

mentioned previously in section 2.2 fosters the development of shared values and beliefs concerning desirable policy objectives and instruments ([16], [25]), and finally to increase the efficiency and effectiveness of this community;

- it provides support not only to the EU decision makers on policy formulation and implementation issues, but also to the other groups of the EU policy community as well, such as the various types of influencers and policy analysts, in order to exchange information, knowledge and expertise, and also opinions, positions and proposals, and improve their capacity to participate in and contribute to the EU policy processes,

- it adopts a 'selective' approach, focusing on the most knowledgeable and credible people on each topic we are interested in, by using advanced reputation management methods [28] (see following section 6 for more details),

- and also focusing on the most relevant documents (such as web pages, blog posts, social media content, online comments, word/pdf documents, collected from various external sources) on each topic we are interested in, using documents' curation/relevance assessment methods (see following section 6 for more details).

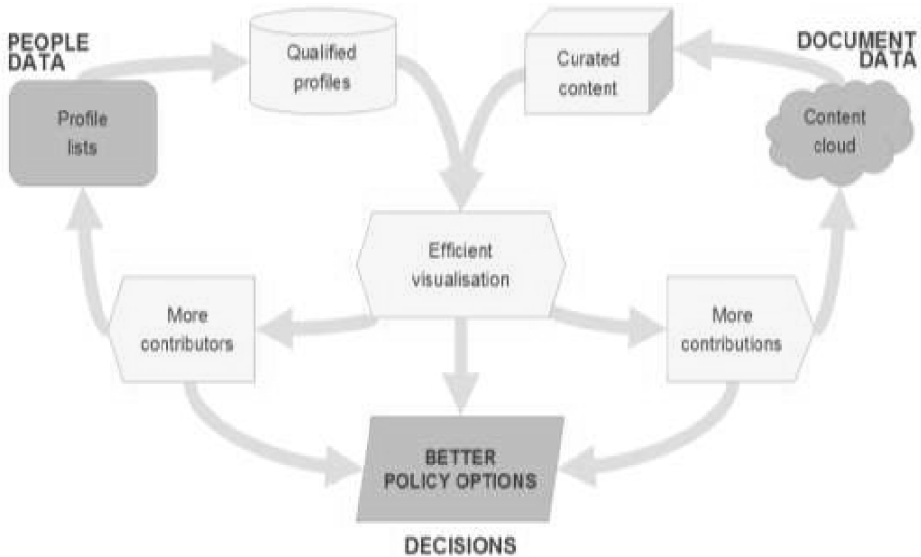An overview of our approach is shown below in Figure 1.

Fig. 1. Overview of the proposed approach to social media exploitation by government agencies for leveraging their policy networks

We remark that it consists of three main processes: the first two of them crawl at regular time intervals the most relevant external sources of EU policies knowledgeable and credible people, and also of relevant documents of various types, update the corresponding databases, and also assess their reputation/credibility of the former and the relevance of the latter. These databases are used by the third process, which processes users' queries (e.g. concerning the most reputable/credible people or the most relevant documents on a specific topic) and presents the results, making use of visualisation/visual analytics techniques [29].

6   ICT Platform Architecture

An ICT platform has been designed for supporting the implementation of the above approach, and its architecture is shown in Figure 2. It consists of three components, named as EurActory, CurActory and PolicyLine, which correspond to the abovementioned three main processes.
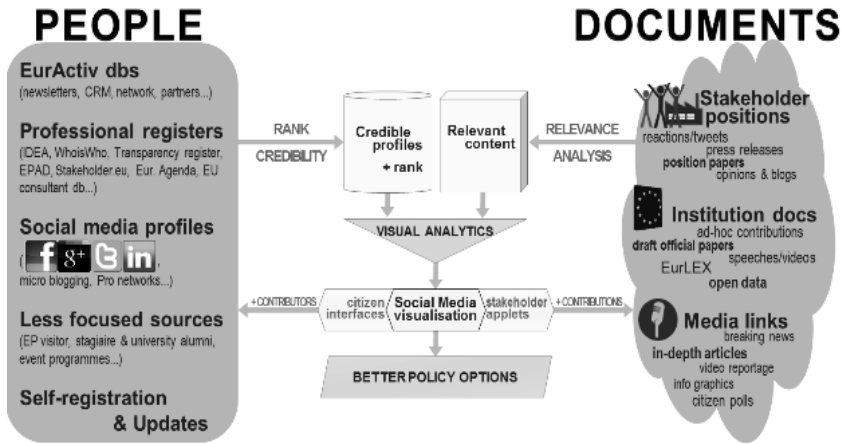

Fig. 2. ICT Platform Architecture

The first 'EurActory' component crawls at regular time intervals various external sources of profiles of people with high levels of knowledge, expertise and credibility in one or more EU policies, such as the databases of EurActiv.Com, various professional registers, social media profiles, etc., and updates the corresponding EurActory EU policies knowledgeable and credible people database; also, the capability of self-registration of people who believe that they have good knowledge of one or more EU policies is provided as well. Furthermore this component will perform credibility ranking, based on the following criteria (each of them having a specific weight):

- Self-evaluation: direct user input.
- Peers rating: based on a survey sent to most influential users.
- Participation as speaker in important events on EU policies: through events' programs uploading, and speakers' names recognized and credited
- Organisation reputation: google ranking of the organisation name
- Position ranking (e.g. see EC Org Charts IDEA): based on scale of hierarchy
- Document assessment: results of authored documents' assessment by their readers
- Proximity trust: level of connection in social media
- Past reputation levels: taking into account reputation in previous months (its stability means credibility).

The second 'CurActory' component crawls at regular time intervals various external sources of documents related to EU policies, such as websites of EU institutions (e.g. European Commission), relevant media (such as EurActiv, European Voice, EU Observer) and various EU policy stakeholders, and also social media accounts where relevant posistions and opinions are published, and updates the corresponding CurActory documents database. Also, the capability of manuall adding a document relevant to an EU policy/subpolicy is provided as well. These documents (with the widest meaning of this term including web pages, blog posts, social media content, online comments, word/pdf documents, etc.) are first related to the most relevant policy topic and subtopics (one document may match more than one subtopic), and then linked to one or more authors in the EurActory people database. Next, for each document its relevance is rated with respect to the above policy topic/subtopic (as one document may match more than one subtopic, it may as well get more than one rating, depending on the subtopic it is considered for). The criteria for this relevance assessent are:

- Author: his/her credibility ranking for the sepcific topic/subtopic.
- Social Media: is it engaging on social media?
- Quality: is it accurate? Or even valuable?
- Relevance: is it relevant to the topic? Or even timely?
- Endorsement: do you agree on the issues? Or even the solutions proposed?

(the last three criteria are rated by the readers, in a rating pop up window).

The third 'PolicyLine' component using the databases of the other two components enables a user to enter a specific policy related topic/subtopic and search for i) people with high levels of knowledge and credibility on it - the result will be the top ones in credibility ranking - or ii) for relevant documents – the result will be the documents with the highest relevance assessent in a PolicyLine visualisation form, which is shown in Figure 3, and includes four columns:

a) In the first column from the right it is shown in which of the steps of EU policy process (public debate, policy debate, draft, debate, decision, implementation, review) the particular topic/subtopic is

b) In the central column (seconfd from the left) there are links to various categories of official relevant documents from EU Institutions (e.g. white papers, green papers, Commission drafts, amendments, etc.)

c) In the first column from the left there are links to various stakeholder positions documents (e.g. from industry federations, NGOs, etc) related to the relevant official documents)

d) In the second column from the right there are links to relevant media analysis documents from EurActiv and other media, which are related to the relevant official documents.
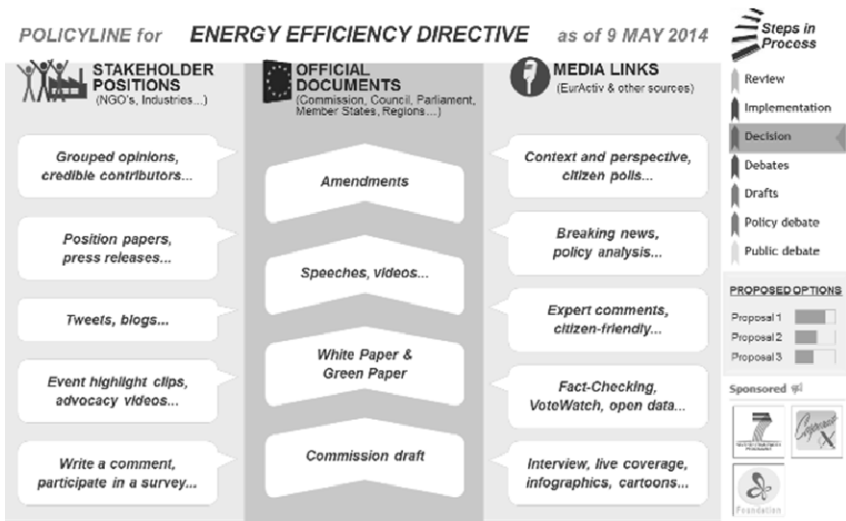
Fig. 3. PolicyLine Visualisation of documents relevant to a specific topic/subtopic

7   Conclusions

The first generations of social media exploitation in government were oriented mainly towards the general public, aiming to increase and enhance communication with them concerning various public policies under formulation or implementation. The research presented in the previous sections of this paper aims to develop a novel approach to social media exploitation in government, which is oriented towards leveraging the policy networks (consisting of various government and non-government actors having high levels of interest in and knowledge and experience on particular topics/policies). Its theoretical foundation is the policy networks theory, which has been developed through extensive political sciences research that has been conducted in this area (briefly outlined in 2.2). This novell approach can give rise to a new fourth generation of social media exploitation in government, which is more focused on highly know-ledgeable policy communities and networks. It does not aim to replace the previous wide public oriented generations (this would be negative for our democracy), but to co-exist and be combined with them. There should be a balanced development of both these two orientations of social media use in government (towards the wide public and the policy networks respectively), and a complementarity between them: it is equally important for government agencies on one hand to gain insights into the feel-ings and perceptions of the citizens, and on the other hand to collect information, expertise, proposals and opinions from highly knowledgeable policy networks.

Further research is in progress as part of this project, which is going to evaluate the proposed approach in several pilot applications. This will allow us to assess the value of this approach along the main questions/dimensions proposed by policy networks theory (see section 2): To what extent it assists the EU institutions in collecting high quality opinions, proposals and knowledge from their policy networks? To what

extent it is useful for sensing changes in their external context, for designing and implementing the required policy changes, and in general for increasing the dynamic capabilities of EU institutions ? Also, to what extent it is assists the EU policy stakeholders in collecting opinions, proposals and knowledge and promoting their own ?

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