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ARTICLE

Designing anticipatory policies through the use of ICTs

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ABSTRACT

This paper seeks to achieve a better understanding of how and under what conditions current digital communication technologies can become an asset to the design of effective policies. In order to do so, we bridge two strands of reflection that have hitherto developed quite independently – i.e. policy design studies and researches on the use of information and communication technologies (ICTs) to reform the public sector. We start from the assumption that different governmental political and technical capacities shape different spaces for action and thus different types of policy design in which policy-makers can involve citizens via ICTs in three modes: co-design; design fine-tuning; crowdsourced policy design. According to this framework, we analyse three different 'revelatory case studies' in which ICTs have been employed by governments while designing policies: Iceland's recent experiment to redraft collectively its constitution; *La Buona Scuola*, the latest Italian public education law; and the Finnish *Avoin Misteriö*, a platform for crowdsourced legislation. By exploring the different modes in which ICTs have been integrated in the formulation of these three policies, we show that it is possible to disentangle different and more or less effective ways of exploiting ICTs' networking and communicative potential for designing successful public policies.

1. Introduction: connecting policy design and ICTs

Policy science and policy design analysis have always considered communication tools (e.g. press releases, social advertising, or even online public communication) as playing a relevant part in policy making (PM) (Hood, 2007; Salamon, 1992). In this context, communication tools have been sometimes considered as policy tools adopted by governments to manipulate policy actors and processes (Edelman, 1988; Saward, 1992) and/or social and economic tools involved in the production of goods and services (Hornik, 1989; Jahn, Schramm, & Spiller, 2005). More often, they have been regarded as 'sermons' through which decision makers try to persuade, exhort, and convince their policy targets to behave in a certain manner (Vedung, 1998). Along these lines, Hood argues that communication tools can work as detectors or effectors (Hood, 1986). More specifically, they play a detecting function when they are designed to obtain information that is relevant to policy activities. Conversely, they exert an

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effecting role when they aim at shaping or changing the behaviours of citizens (or other policy subjects) in view of achieving specific policy objectives.

With the pervasive diffusion of information and communication technologies (ICTs), scholars have begun to reflect more systematically on how policy-makers can leverage digital communications not only to deliver and communicate policies to the public but, more importantly, to enhance the very process of PM. To be sure, observers agree on the fact that innovating the public sector through ICTs is an open-ended and non-linear process as innovations are continuously added over time and, yet, they are not dependent one on the other (Bertot, Estevez, & Janowski, 2016). In this sense, Janowski (2015) underlines that ICTs can trigger different effects depending on how they are embedded within governments' working modes. Thus, ICTs can simply *digitize* or, more radically, *transform* working logics depending on whether they are employed to fasten or to change internal and government-to-government relationships. Similarly, ICTs can work as instruments for *engagement* if they are employed to alter the ways in which governments relate with non-governmental actors (e.g. citizens, business, etc.); or they can play a *contextualization* function when transformation affects a specific sectoral context in which the government delivers its services (Janowski, 2015).

Studies in this domain outline several factors that make ICTs relevant to PM. First, and quite intuitively, ICTs support a faster and more flexible organization of communication and information transmission both within public administrations but also between different agencies and institutions (e.g. Longo, 2015). Second, ICTs allow policy makers to access an unprecedented amount of data about a variety of policy issues, from local transportations to public health, financial transactions, personal consumptions and much more. As it has been pointed out, enhanced data availability endows governments with new crucial resources to face wicked policy problems (Janssen & Helbig, 2016) and supports evidence-based policy design and PM (Barret et al., 2011; Gil-Garcia, Pardo, & Luna-Reyes, 2018; Longo, 2015). Still, reflections in the emergent 'policy informatics' domain (e.g. Johnston, 2015) stress that improved analytical possibilities do not guarantee policy efficiency. Equally necessary are a profound knowledge of the context to which analytics refer to as well as the collaboration with different stakeholders to jointly define how to translate results into governance changes (Gil-Garcia et al., 2018; Johnston, 2015; Longo, Wald, & Hondula, 2015).

Thirdly, and more relevantly to this paper, ICTs allow governments to involve citizens within PM and thus to benefit from their personal knowledge, expertise, ad opinions. Borrowing directly from business studies (e.g. Howe, 2009), the concept of *crowdsourcing* has been employed to describe the different modes in which citizens are actively involved in the collective and distributed management of policy-related tasks – from the auditing of policy outcomes and open and inclusive collaboration within PM to the legitimation of governments and policies (Lehdonvirta & Bright, 2015).

In reviewing recent studies on this topic, Prpić, Taeihagh, and Melton (2015) clarify that policy crowdsourcing (PC) can be deployed at any phase of the policy cycle and in different formats: by outsourcing a policy task to a group based on a virtual labour model; by stimulating competition between experts to submit 'the best idea'; or (more often) by simply establishing environments of open collaboration that recognize the participation of interested citizens. Similarly, Bertot et al. (2016) argue that crowdsourcing in public administration can take multiple forms depending on the complexity of

the problem at stake, the perception and knowledge of in-house expertise, and on the diversity of thought that is required for solving the problem.

More in general, observers underline how PC practices generates public interest in PM, can lead to the actual delivery of valuable inputs and can thus increase the perceived quality of decision making itself, which is deemed fairer and more balanced even when policy outcomes are not in line with participants' preferences (Christensen, Karjalainen, & Nurminien, 2015, p. 28). Nonetheless, several critical elements have also been highlighted. Looking at public consultations in Australia and the US, Liu (2016) shows that public consultations are often far from being widely participated and that most contributions are submitted by a small number of active participants. In their study of how social media are used by local governments in the US, Mossberger, Wu, and Crawford (2013) show how authorities tend use social media essentially to 'push' towards citizens their representation of reality rather than to engage in a dialogue with them. Moreover, shortcomings in the regulation of privacy, access, data protection, together with the uncertainty on how to best channel inputs derived from 'the crowd', limit the efficiency of direct collaboration with citizens (Bertot, Jaeger, & Hansen, 2012). More broadly, Hood and Margetts (2007) argue that the increased diffusion of social media force governments to complicate their communication strategies and to compete with a myriad of other actors in providing citizens with information and viewpoints on policy issues. In turn, these trends provide continuous occasions to challenge and put governments' authority into question sometimes even radically altering state-citizens relationships (ibid.).

To a certain extent, attention has gone also towards the study of how digital communication tools intersect specifically *policy design* activities. In this respect, Hood and Margetts (2007) point out that ICTs' communicational and networking potentials affect all categories of tools that governments employ when making public policies. More particularly, the authors argue that ICTs can augment governments' capability to disseminate and collect information within multiple social and political networks (*nodality*), their power to require and/or condition behaviours through policies (*authority*), the resources to be exchanged in view of realizing policy goals (*treasure*), and their possibility to lean on and employ specific material and human resources to achieve their policy aim (*organization*).

While initially the *crowdsourcing* label was loosely employed to depict any sort of direct relation of cooperation between governments and citizens, more recent accounts invite to recognize its specificity as a policy instrument. In this sense, Dutil distinguishes crowdsourcing from both *consultation* and *coproduction* insofar as it is the only instrument that 'forces open the tool shed of the state with the promise of a distinct alternative that cannot only assist governments in executing projects, but that opens up vast new possibilities for a new role for the government and for new policy and project plans' (2015, p. 368).

Along the same lines, Bertot, Jaeger, Munson, and Gaisyer (2010) speak of 'crowdsourcing of solutions and innovations' as one of the key opportunities triggered by ICTs employment in the public sector – together with citizens' enhanced democratic participation in policy development and implementation, and the co-production of policies and services. In unfolding the concept of 'citizen-sourcing', Nam (2012) identifies four ways in which governments can exploit ICTs to interact with citizens thus creating

added value in the public sector: creating new information, improving service design and delivery strategies, developing innovative solutions to policy and administration problems, and engaging in collaborative PM activities. Departing instead from extant reflections on 'citizen coproduction', Linders (2012) identifies three main modes in which citizens can partner up with governments in ideating and delivering services. First, *citizen-sourcing* occurs when the main responsibility still lays on governments, but citizens play an active role by providing comments and suggestions, collaborating to the execution of services, and supporting monitoring tasks enhancing governments' situational awareness. Second, the author speaks about *government as platforms*, when governments empower citizens by providing them with increased useful information to perform their day-to-day activities. Finally, in the third mode, i.e. the *do it Yourself Government*, citizens self-organize with no interference from governments, which can nonetheless play a facilitation role.

However, extant reflections on the nexus between ICTs and policy design tend to focus either on how digital communication affect existing policy instruments or on the different forms in which direct collaborations with citizens can occur. Only seldom attention has gone to the motivations that drive the use of ICTs in policy making and, more specifically, the recourse to direct collaboration with citizens to gather ideas, information, and expertise (for an exception, see Clark, Zingale, Logan, & Brudney, 2016). Even more rarely the use of ICTs in PM has been connected to the multiple political, contextual and historical aspects that affect policy design and condition the adoption of specific tools (Capano, 2018; Capano, Regini, & Turri, 2016; Howlett, Mukherjee, & Woo, 2015). Thus, no systematic reflection has been developed about how ICTs are inserted into newly designed instrument packages (e.g. reporting, monitoring, certification, administrative information, transparency rules, e-public portals, performance measures) or intersect other types of tools shaping complex policy packages (Bressers & O'Toole, 2005; Howlett, 2004).

To fill in this gap, in this article we propose an analytical framework to explicitly link the use of ICTs to the different circumstances in which policy formulation occurs. In continuity with abovementioned reflections on how ICTs innovate the public sector, we argue that governments can employ ICTs and thus involve citizens in policy making in different ways and depending on their needs and available resources. However, we specify extant streams of research arguing that, when it comes to policy design, different uses of ICTs supply to governments political and/or the knowledge resources they may lack to perform 'optimal policy design formulations' – that is, to genuinely innovate a certain policy field in a way that is also consistent with their goals (Capano et al., 2016, p. 34). Thus, depending on their deficiencies in terms of political and/or technical capacity, governments can resort to direct collaboration with citizens via ICTs to *co-design* policies together with citizens, to *fine-tune* existent policy proposals, or to completely *crowdsource policy design*.

Nonetheless, we also argue that, on its own, leaning on ICTs does not necessarily translates into greater PM capacities. Building on policy design studies but also on researches that have examined actual experiences of policy crowdsourcing, we claim that the degree of success in the application of ICTs to policy design depends on a set of political, procedural, and technological factors – particularly, the motivations that drive governments recourse to ICTs and their actual willingness to include citizens' inputs

within policies; the clarity of the task assigned to citizens; and the design choices that shape the platforms upon which collaborations unfold.

In the remainder of this article, we first illustrate our analytic framework to then apply it to three cases, one for each type of ICTs-based collaboration that governments can put in place. More precisely, we analyse the Icelandic experiment of constitutional reform as an experiment of co-design; the Italian consultation on the reform of the public education sector as an example of design fine-tuning; the Finnish Avoin Ministeriö as an example of crowdsourced policy design. While we make no claims regarding the representativeness of these cases for the myriad forms of PC that are being developed around the world, we assume that they can be considered 'revelatory case studies' (Yin, 2013) to investigate how the mediation of ICTs can enrich the set of policy tools. We conclude the article by outlining some general insights on the nexus between ICTs and policy design that we can gain from the analysis of these three cases along our proposed framework.

2. An analytical framework to explore ICTs-based policy tools

A clearer understanding of the nexus between ICTs and policy design can only descend from a genuine account of the conditions in which policy formulation occurs. Indeed, policy design does not happen in a vacuum but, rather, is highly affected by a multiplicity of factors. Recent contributions on policy design suggest that governments move within and between different 'spaces' of policy formulation, which are determined at the crossroads between two main dimensions (Capano, 2018; Capano et al., 2016; Howlett et al., 2015). On the one hand, 'government political capacity', points to policy makers capacity to 'significantly alter the political status quo' (Capano et al., 2016, p. 36). On the other, 'government technical capacity' points to the capacity of 'designing policies that are in keeping with goals and are feasible' (ibid.). According to the authors, government political capacity grounds on the political strength of the government in decision-making processes but it also depends on the public salience of the policy field and on political legacy. Technical capacity, instead, is affected by the features of the bureaucratic and advisory system through which policies are formulated as well as by the preferences for specific policy instruments to be adopted.

At the intersection between different political and technical capacities, governments enact different modes of policy design. High levels of political and technical capabilities put governments within an 'optimal' policy design space, as they are endowed with enough consensus and evidence-based knowledge to 'freely pursue a new design' (ibid, p. 34). When a high political capacity is not accompanied by an adequate technical knowledge, governments move within an 'incoherent policy design space' where policy instruments can be added but are likely to be inconsistent with pursued goals. When technical knowledge is not an issue, but governments are politically weak, 'adaptive policy design' strategies are put forward. In this case, extant designs cannot be radically overcome but, rather, are 'calibrated' following the available knowledge. Finally, when governments lack both types of capacity they perform 'poor policy design' – that is, they add different instruments yet without knowing whether they are consistent with the pursued goals.

Against this background, we propose that, except from when governments are endowed with adequate political and technological capacities, and thus can freely pursue their policy strategy, they can resort to direct collaboration with citizens via ICTs to supply to their lack of political consensus, to acquire the technical knowledge to innovate a policy field, or even to exit the impasse that comes from having no political or technical capacity to efficiently perform their policy-related tasks. Indeed, as seen above, ICTs provide governments with increased data resources and expertise, which can enhance their knowledge about policy fields. Moreover, involving citizens via ICTs enhances the overall legitimacy and perceived efficiency of PM. Together these two elements increase governments' political *anticipatory capability* by providing insights on desired policy contents and priorities but also on possible policy and political obstacles and complications.

Thus, we propose that ICTs can be inserted within policy formulation courses in the attempt to shift from a suboptimal policy design space towards the optimal one. Depending on their deficiencies in terms of political and/or technical capacity, governments can resort to different modes of direct collaboration with citizens via ICTs (Table 1):

(1) *Co-design* procedures can be set up when governments engage with citizens at different levels and at different times in drafting legislation to supply to their lack of technical knowledge to reform a policy domain. After being collaboratively shaped, co-designed legislations are then sent to the appropriate institutions for approval;

(2) *Design fine-tuning* procedures can be set up to supply to governments' lack of political consensus by asking citizens for feedbacks which will then affect the final formulation of a policy provision;

(3) *Crowdsourced policy design* procedures can be set up when governments have no specific capacities to pursue efficient and agreed upon policy strategies. Hence, they leave an open channel to citizens to autonomously and independently supply policy proposals which, under certain condition, will become part of government PM activities.

Nonetheless, resorting to ICTs and thus to citizens' competencies does not necessarily enhances governments' capacities. Based on a joint reading of policy design and PC literature, we suggest that two orders of factors are particularly important in this respect.

Table 1. Different modes to resort to ICTs in suboptimal design spaces in policy formulation.

		Government technical capacity	
		High	Low
Government Political Capacity	High	SPACE 1. Optimal Policy Design Recourse to ICTs: *Not Likely*	SPACE 2. Incoherent Policy Design Recourse to ICTs: *Co-Design*
	Low	SPACE 3. Adaptive Policy Design Recourse to ICTs: *Design fine-tuning*	SPACE 4. Poor Policy Design Recourse to ICTs: *Crowdsourced policy design*

Adaptation from Capano et al. (2016).

On the one side, there are political factors – particularly, the motivations that drive governments' choice to employ ICTs in PM, and the way in which governments make use of citizens' inputs. The three modes of direct collaboration we just outlined respond to different needs, entail different costs, and require governments to possess specific sets of skills to process and, possibly, include citizens' inputs in PM (see Clark et al., 2016). Hence, the actual choice of a mode of collaboration should follow from a genuine evaluation of the policy space in which policy-makers are operating, as a mismatch between needs and ICTs-based strategy can nullify the added value of direct collaboration.

Moreover, governments can make different uses of the inputs received – either making their policies substantially more inclusive, efficient and forward-looking or, more instrumentally, providing a public justification to already defined policy frameworks. Every mode of direct collaboration raises certain types of expectations on the side of citizens about on how their commitment will be rewarded. In spite of the positive outcomes that the direct involvement of citizens within PM can generate (Christensen et al., 2015), raising the wrong expectations or, more importantly, not responding to the expectations generate by the recourse to the right ICTs strategy can become highly counter-productive.

On the other side, procedural and technological factors are also fundamental. As for the former, the clarity of task assigned to citizens is of paramount importance. Seltzer and Mahmoudi (2013) note that PC is particularly efficient and effective as a policy design strategy when – consistent with the very premise of the crowdsourcing concept (Brabham, 2008) – the task to be completed is well defined and can thus be articulated into subtasks associated with achievable goals. Conversely, when this level of clarity is not reached, PC can become 'more manipulative than constrictive' (ibid, P. 8, see also Clark et al., 2016).

Design choices and modalities of communication permitted by the platforms employed are also decisive with regard to the positive effects of PC (Friess & Eilders, 2015; Koch, FüLler, & Brunswicker, 2011). To be sure, only seldom attention has gone towards the study of how communication devices actively mediate citizen participation (for exceptions, see e.g. Bertone, De Cindio, & Stortone, 2015; Cho & Chun, 2011; Nelimarkka et al., 2014). This element is particularly problematic in a context in which it is increasingly recognized that the material nature of technology – or the features of the artefacts employed – stand in a mutual and co-creative relationship with social understanding and uses (Lievrouw, 2014). Scholars that have focussed on the role played by technological infrastructures underline that the success of PC processes depends on the extent to which principles of inclusiveness, accountability, transparency, modularity, and synthesis are embedded in the design of platforms used to collect citizens' input (Aitamurto & Landemore, 2015). Along the same line, Nelimarkka and colleagues (2014) stress that the usefulness and the efficiency of PC platforms highly depends on design choices as, on the one hand, they crystallize governments' motivations towards collaboration with citizens and, on the other, enable and simultaneously constrain the type of contributions citizens can deliver.

Ultimately, we purport that it is only in relation to specific contextual conditions and at the crossroads between political, procedural and technological factors that we can assess whether and how ICTs can truly benefit policy design activities. In what follows, we illustrate the usefulness of our framework to read different concrete cases in which national governments decided to lean on a particular mode of collaboration with citizens and thus to begin to reflect more systematically on the implications of ICTs for policy design.

3. Research design

After conducting and in-depth analysis of recent PC studies, we selected three cases that are illustrative of the three modes of collaboration we outlined in our framework:

(1) the Icelandic experiment of constitutional reform as an experiment of co-design;
(2) the Italian consultation on the reform of the public education sector as an example of design fine-tuning;
(3) the Finnish Avoin Ministeriö as an example of crowdsourced policy design.

We consider these three revelatory case studies" (Yin, 2013) to investigate how the mediation of ICTs can enrich the set of policy tools that governments have at their disposal in different circumstances. Hence, rather than by producing grand generalizations (Stake, 2003), our case studies allow us to advance scholarly debate through 'contextual learning' (Flyvbjerg, 2006).

To examine the ways in which ICTs have crossed PM in each of the three cases and to identify the implications in terms of policy design, we combined the historical reconstruction of each policy process with that of the evolution of the official website where the direct collaboration with citizens took place. Certainly, in all three cases, interactions between policy makers and citizens were not limited exclusively to those on the official websites. Social media platforms such as Facebook and Twitter played a paramount role, as they hosted large-scale public discussions on the substance of the policies at stake as well as on the procedures through which citizen participation was enabled (see Ceron & Negri, 2016). However, the three websites were the tool that governments purposively set up to collect citizens' inputs and, therefore, are the principal tools to be examined to understand how ICTs can impact policy design dynamics.

To reconstruct how website evolved over time, we employed the Wayback Machine of the Internet Archive (a public service of web content archiving),[1] an online tool that periodically records and stores snapshots of existing websites. By collecting snapshots of the three website that refer to different moments of the specific policy processes under examination, we were capable to retrace how the material features of the platforms enabled and, at the same time, constrained the delivery of inputs from citizens and thus to link this element to governments' motivations, the type of task assigned to citizens, as well as to the decisions on how to use their contributions to PM.

4. Cases of ICTs use for policy design

4.1. *Co-designing the Icelandic constitution*

The Icelandic constitutional reform process attracted international attention because of the peculiar nature of the policy design process used to redraft the constitutional text – a process that has been referred to as a 'crowdsourced constitution' (Landemore, 2015), emphasizing the multifaceted involvement of citizens and non-expert politicians in the process.

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[1]https://archive.org/web/.

Through Act 90/2010, a Constitutional Assembly (CA) composed of 25 citizens was appointed to write, with the support of legal experts, a new constitutional document based on the outcomes of a National Assembly (NA), which was organized in November 2010 with the substantial involvement of the umbrella grassroots organization *The Anthill*. The NA gathered a random sample of 950 Icelanders who debated and contributed their personal views on the new legal foundations of their state. At the end of the same month, Icelanders were also called on to elect the 25 members of the CA from a pool of candidates who did not – and in fact could not – include administrators and civil servants. Ultimately, the CA was formed exclusively by non-professional politicians – only two of whom had served as parliamentarians before (Landemore, 2015). In January 2011, the Supreme Court annulled the CA members' election due to alleged electoral irregularities, but the Parliament ignored this ruling and directly re-appointed all 25 elected individuals as members of a new 'Constitutional Assembly Council' (CAC) in April 2011.

Over the four months in which the CAC worked to daft the new text, a constant, voluntary and un-strategized interaction between the committee and Icelanders occurred thanks to the strategic use of ICTs. Indeed, as Landemore notes, 'while there was no conscious intention on the part of the Council members to establish a systematic back and forth between them and the crowd, something close to such a feedback loop seemed to have emerged from the very first draft onwards' (2015, p. 174).

At the core of this 'feedback loop' was the CAC's official website, *stjornlarad.is*, which was created in early April 2011 to publicly exhibit and disclose the activities of the Council.[2] In its first version, the website's homepage offered five different entry points for the public to support the CAC's steering activities:

(1) A summary of the tasks of the Council (the 'Job');
(2) A section titled, 'General Presentation' that focused on collecting petitions and requests through a form,
(3) An 'Extensive Database' containing documents (e.g. the constitutional text to be redrafted, constitutions from other countries, the report resulting from the National Assembly, etc.), links to websites discussing the review process, and an introduction to key principles that guided it (e.g. human rights, distinctions between executive, legislative and judicial powers, etc.);
(4) A link to the biographies of the appointed Council Members; and
(5) A link to key information on the redrafting process.

A sliding banner displayed information about three key elements of the constitutional reform process: a short description of the 2010 National Assembly, a link to the report of the constitutional committee, and an announcement regarding the recordings of the Council's meetings. Another section listed news, a schedule of meetings ('Agenda') and a link to the Council's minutes. The faces of the appointed members appeared in sequence within a sliding page area. Finally, at the bottom of the page, the ways to follow and contribute to the CAC's activities were shown: a preview of and link to the CAC's public page on Facebook, and a link to its Twitter, YouTube and Flickr accounts.

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[2]http://www.stjornlagarad.is.

When steering activities began, the website homepage became completely dedicated to the Council's work. In particular, immediately below the heading sections, a large sliding banner featured a space showing the evolving constitutional text (Figure 1). The CAC posted 12 different versions of the text for Icelanders and individuals around the world to comment on (Landemore, 2015). Most notably, the first posted version was not a full draft but a collection of headings and chapters, which were then filled in based on comments and suggestions from the public (ibid.). Thus, the drafting process proceeded incrementally: the CAC periodically posted a new version, and citizens commented on this version through the website, on social media platforms, or by sending emails to the 25 members. In the interests of even more transparency, recordings and minutes of CAC meetings were made available, and users could thus contextualize the proposals they were called to comment on and that ultimately served as additional informational resources for strengthening the enlarged steering process.

Overall, the CAC website was simple and did not allow for any particularly complex form of interaction between Council members and citizens. Moreover, although Council members were ultimately responsible for choosing the elements to include in the text, the drafting process was conducted in a transparent and inclusive manner. Ultimately, although citizens did not actually *write* the constitution, and although their participation was not devoid of shortcomings and difficulties, the openness and participatory nature of the policy design process allowed them to shape the text significantly (Landemore, 2015).
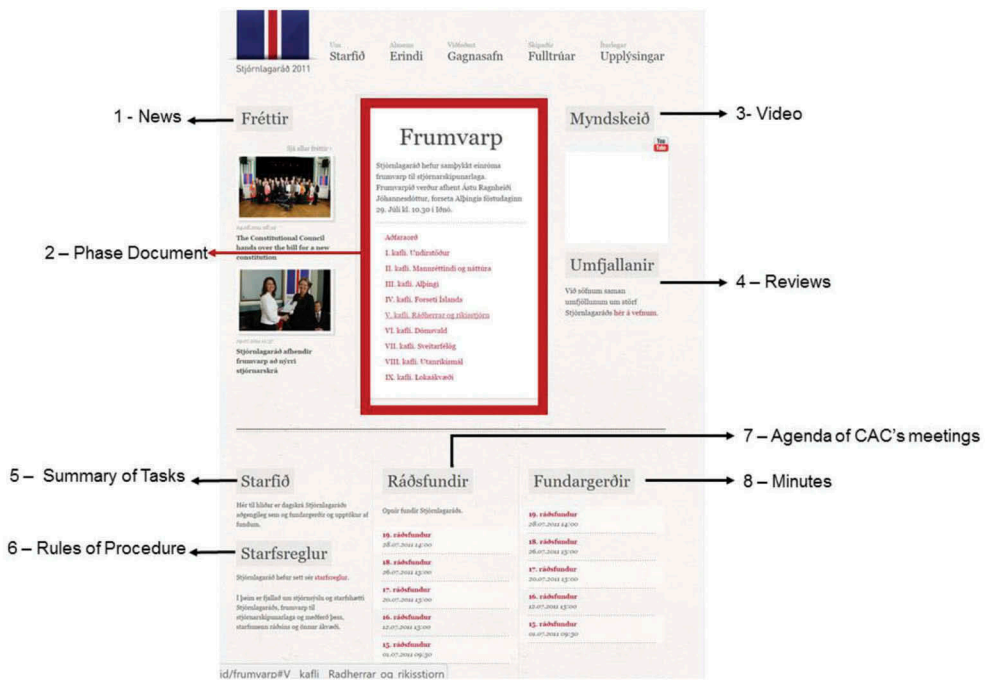
Figure 1. Iceland CAC website homepage.
Source: Elaboration from Wayback Machine output (19 July 2011).

In July 2011, the CAC delivered the final text of the constitution to the Parliament, and in October 2012, a popular referendum validated it. However, the entire process stopped soon after the referendum occurred; the constitution's text was never debated in Parliament and never became the new fundamental law of the Icelandic state. A constant opposition from the Independence Party, which also stood behind the Supreme Court's decision to invalidate the Council's members' election, was fundamental to determining the premature death of the institutional process, in addition to the reluctance of other political parties to back the 'one person, one vote' principle asserted in the new constitutional text (Gylfason, 2013). In April 2013, political elections resulted in a new government led by the Independence Party and the Progressives, which strategically set the constitutional reform process aside and in fact worked to favour the fishermen and vessel lobbies, who were among the harshest critics of the new constitutional text.

4.2. *Fine-tuning the reform of the Italian public education system*

In May 2014, the Italian government headed by Matteo Renzi began to work on a provision to reform the hiring and governance practices in the public education system. The so-called 'La Buona Scuola' (BS; literally translated as 'The Good School') became law 107/2015 of the Italian state in July 2015 after being at the core of one of the most extensive public consultation experiments held in the country.

Public consultation on the BS lasted for two months (from September 15 until November 15), and according to the call published on the *buonasucola.gov.it* website, it was designed to involve all Italian citizens, with no particular restrictions in terms of age or profession. Thus, the consultation was deployed in a truly hybrid fashion both offline and online. On the one hand, the Minister of Education, University and Research (MIUR) toured Italy and inviting students and interested organizations to organize so-called 'diffused debates' according to a set of official guidelines. On the other hand, much of the consultation process occurred online through the website *buonascuola.gov.it*, which launched near the end of the summer of 2014 and initially only allowed users to subscribe to an email-updating system to keep citizens informed on the 'beginning of the consultation activity' (buonascuola.gov.it 2014).

With the consultation official start in September 2014, the website underwent major restructuring (Figure 2) to offer citizens multiple ways to contribute. The main tool for public participation was an online survey through which citizens who subscribed to the website could express their views, criticisms and reform proposals on the six chapters of the decree. Notably, the survey was not accompanied by any completion instructions, with the exception of a note stating that, even in the absence of a formal 'closure' of the survey, the answers would have been considered final after the closing of the consultation. Thus, there was no mention of a user's option to withdraw from the survey once he or she had begun to provide answers.

Without having to register, users could also deliver an 'immediate comment' by filling in a pre-defined form with a limit of 1000 characters to outline the positive, negative and missing elements of the government's proposal. The website also made materials available to realize so-called 'diffused debates', providing a map and calendar to foster offline participation in such initiatives. Moreover, users could vote on the
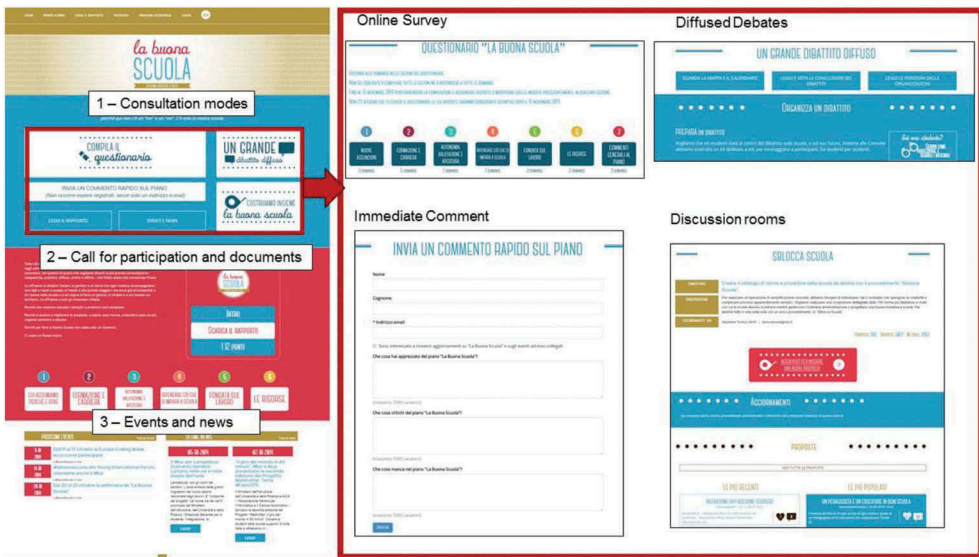
Figure 2. Homepage of labuonascuola.gov.it and internal sections for the consultation process.

conclusions of debates published on the website (by giving 'likes'), thus providing the government with another source of feedback. In the same website section, NGOs could send position papers that were eventually stored on the website and made available publicly.

Another key element of the consultation process was the creation of 16 virtual 'debate rooms' dedicated to discussing, commenting on and voting on proposals about complex issues such as norms to be abolished or simplified, ways to use laboratories to realize students' competencies, ways to increase digital connectedness between schools, etc. Discussions held within debate rooms deployed according to a 'social media logic' for which the visibility of a proposition was linked to its level of support (operationalized through likes and comments), although no immediate opportunities were in fact given to express dissent.

A second major restructuring of the website occurred after conclusion of the consultation period. In this phase, the website transformed into a tool for feedback through which the government could show Italian citizens the results of their participation.

The main modality of restitution passed through a section entitled 'I numeri della partecipazione' (*The numbers of the participation*), which included a 70-slide Power Point presentation that summarized the BS design process, from the steering of its initial text to the results of the consultation. Notably, the file was accompanied by a statement declaring that the public consultation process was conducted according to a *'Participation Pact'* that clarified only a posteriori that the consultation never sought to produce radical changes in governmental reform proposals and outlined in an admittedly vague way the tasks that citizens were asked to perform.[3] The participation pact stated for the first time that only 'some' inputs would be used to ameliorate the initial

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[3]https://labuonascuola.gov.it/perche-partecipare/.

text, whereas others would 'require a wider debate on better solutions for their practical realization or for their future development'.[4] More importantly, the page specified, with unprecedented clarity, that the consultation was meant to be a 'collaboration project, a shared path opened to include those who aim at achieving the best possible results: for this reason, its results will integrate, within a *working framework that is clearly defined*, starting from the hiring plan, both the normative dimension and the realization plan through which La Buona Scuola will become a reality – for example, through projects, guidelines, white papers, calls and other tools'.[5]

In spite of the multiplicity of modes of engagement actively promoted through the website, the Power Point presentation did focus predominantly on the results obtained in the online survey. None of the other input delivery sections in fact underwent any significant restructuring (with the exception of a change in the discussion room name that during this phase was renamed 'co-design'). This element suggests that these types of inputs were not subject to any particular treatment after the consultation period concluded.

Finally, part of the restitution process involved the introduction of a specific website section entitled 'L'attuazione del piano' (*The implementation of the plan*) where (at least in principle) users could see how their inputs were used to improve the bill and 'with what norms and resources it is going to be realized' (buonascuola.gov.it 2014). However, all snapshots available on Wayback Machine webpages (some of which date to October 2015, 11 months after the consultation had concluded) show that this section has always remained empty.

After the BS became law in July 2015, the website was restructured again. At the top of the page, the final text of the law was accompanied by a summary and a link to an infographic listing the resources allotted for certain key aspects of the plan.[6] At the centre of the page was a brief overview of the most innovative aspects of the law and a link to the initial text published on the website in September 2014. Below this section, a news box moved up from the bottom of the page while the section on the consultation was relegated to the bottom of the page.

4.3. *The Finnish Avoin Misteriö to crowdsource policies*

As part of its constitutional reforms, in 2012, the Eduskunta (i.e. the Finnish Parliament) introduced the Citizens' Initiative Act (CI-Act), which granted citizens the possibility to propose new laws to the Finnish Parliament and to amend or abolish existing ones.

As noted by Hekka, the CI-Act differs from existing citizen initiative provisions in three respects (2015, p. 269–70). First, it 'created a directed legislative pipeline' for citizens' proposals, mandating that the Eduskunta discusses and treats any proposals that gather more than 50,000 signatures over a period of six months. Although it remains the power of the Eduskunta to approve citizens' bills and even to modify them before voting, this provision ensures that crowdsourced legislative propositions are not merely of an advisory nature and can be presented at any time (Serdült, Mendez, Harris, & Su Seo, 2016). Second, the CI-Act

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[4]Ibid.
[5]Ibid., emphasis added.
[6]After the first year from the decree, a summary of the first 12 months of its application was also added to the homepage.

allowed for signatures to be collected both offline and online under the condition of establishing strong e-identification mechanisms (e.g. making use of banking codes) that would guarantee each signatory's identity and prevent unauthorized or inappropriate data processing (Nurmininen, Karjalainen, & Christensen, 2013). Third, although the Act predicted the creation of governmental platforms for the collection of proposals and signatures, it also allowed for the construction of third-party services in support of crowdsourcing projects (ibid.).

Within this legislative framework, the Finnish Ministry of Justice launched its own platform on December 2012, the *kansalaisaloite.fi* website. On this website, citizens could submit legislative proposals and could also collect the signatures necessary to have them transferred to the Eduskunta. However, in conjunction with the promulgations of the CI-Act, another platform was launched and gained immediate visibility – the Avoin Ministeriö (literally *Open Ministry* and henceforth OM). The OM website differed from the governmental website in two main respects: first, it was (and is still) run by a non-governmental organization called *Avoin Ministeriö*; second, the platform is more heavily focused on the collective and participatory drafting of legislative proposals than on collecting signatures (Nurmininen, Karjalainen, & Christensen, 2013).

To be fair, when it became fully operative over its first year of existence, the OM website allowed for both the drafting of legislative proposals and for the collection of signatures. However, the costs of maintaining e-identification mechanisms (particularly those using bank codes) became prohibitive for the NGO, leading the OM to abandon this function, which is now performed mainly through the Ministry of Justice website, while the OM remains as a hotbed for citizen ideas and proposals (Hekka, 2015).

Although the loss of this validation function did in fact diminish the popularity of the website, the OM still provides a relevant example of a permanent crowdsourced policy design mechanism in which proposals are collectively discussed and not simply endorsed, as is the case on the *kansalaisaloite.fi* website.

Overall, the ideation of collective legislative proposals on the OM unfolds over three steps:

(1) The submission of an 'idea' or general proposition on a matter that could ideally become an object of legislation or a modification of an existing legal framework. Anyone registered on the OM can submit an idea, and registration with the service has always involved providing an email address with no requirement to confirm personal identities. Registration on the *avoinministerio.fi* website has also always been possible through personal Facebook accounts. Moreover, submitting ideas is simple: it is sufficient to leave an email address, to provide a short description of an idea, and to solve a captcha code to prove that the submission has not been sent by a bot;

(2) The public expression of support or dissent for ideas to identify proposals that, among all those submitted, attract more attention and support and thus are more likely to be submitted to and discussed by the Eduskunta. The expression of preferences on ideas is reserved to registered users;

(3) The transformation of ideas into draft legislation with the combined work of a secretariat consisting of volunteers of the NGO (experts in the field concerned and often lawyers and consultants) and the public, which can always send comments and proposals to edit the text.

Since its inception, the OM website has maintained a rather simple structure. In its first phase (see Figure 3), the website's homepage included most of the tools to involve Finnish citizens in the policy design process. At the top of the page, website users were invited to log-in or register and could immediately access existing ideas and/or submit new ideas. Immediately below, a large coloured banner featured a slogan associated with the most prominent and perhaps most promising legislative projects at stake. Under this banner, the homepage featured proposals opened for signature together with a list of ideas in the process of being transformed into drafts. Thus, users could sign an existing draft by signing in and authenticating their identity univocally. Users might otherwise express their support and submit comments to contribute to the formation of a draft after signing into the website and accessing a collaborative and *in fieri* document stored on secure servers but not made publicly available. At the bottom of the page, users were provided with examples of existing ideas, each of which contained an indication of positive and negative preferences expressed and that were marked in green or red, respectively.

With the intensification of citizen-initiated activities, the website got restructured: although the top of the page remained unaltered, signature-collecting proposals that were open or had concluded were displayed at the centre of the page, coloured differently depending on their status.

Supported by this simple interface, the avoinministerio.fi website demonstrated the feasibility of fully crowdsourced policy design dynamics on at least two occasions between 2012 and 2013. The first involved the drafting of a citizens' initiative to ban fur farming, which received approximately 70,000 signatures between May and November 2012, thanks to the collaboration between Avoin Ministerio and other animal rights and environmental organizations (Christensen, Karjalainen, &
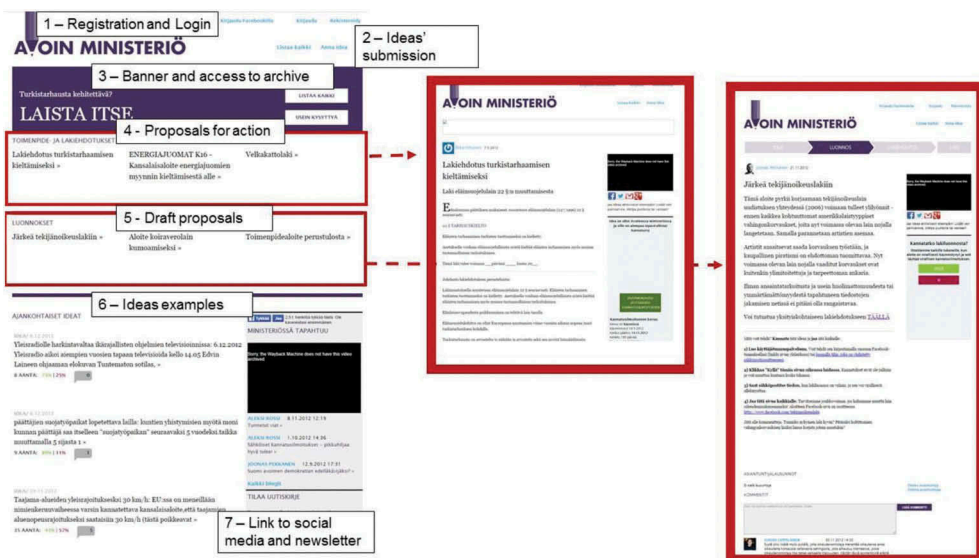
Figure 3. Homepage of avoinminister.fi in its initial phase.
Source: Elaboration from Wayback Machine output (snapshot from 15 December 2012).

Nurminine, 2015). As often occurs when citizen initiatives are transferred to the Eduskunta (Serdült et al., 2016), the legislative proposal was discussed by a Parliamentary Committee (in this specific case, the Agriculture and Forestry Committee) and then voted on by the plenary. As the Committee refused to back the proposal, the Eduskunta's plenary voted against it, and the ban never became a law.

Conversely, between March and September 2013, a collective proposal for establishing same-sex marriage in Finland garnered widespread support, reaching the threshold of 50,000 supportive signatures in a matter of hours and ultimately being approved in November 2014 by the Finnish Parliament. On *avoinministerio.fi*, the collective draft gathered sustained attention and hundreds of comments before being opened to signature collection. Unlike the fur-farming ban, which encountered strong opposition from Finnish economic and industry lobbies (Christensen et al., 2015), same-sex marriage was an issue that several parties had tried to bring to plenary discussions several times without success (Hekka, 2015). In this sense, the citizens' initiative forced the Eduskunta to address the issue and served as an optimal starting point to proceed from within institutions with a discussion that was often procrastinated. Nonetheless, it must be stressed that thus far, the initiative on same-sex marriage supported also by OM has been the only crowdsourced initiative to become law of the 13 citizens' initiatives discussed by the Parliament since 2012 under these provisions.[7]

5. Discussion assessing the use of ICTs for PC in designing anticipatory and effective policies

Table 2 summarizes the main results of our analysis along the lines of our proposed analytical framework.

With regards to the *initial policy formulation space* and thus to the governmental motivations behind the employment of ICTs, the Finnish case is characterized by a formal political decision to institutionalize the involvement of citizens in legislative activities. Thus, the Finnish government seems to consider citizen input as a valuable resource that must be *steadily* exploited in PM to overcome peculiar policy conundrums for which it has enough political or technical capacity. Indeed, in addition to enabling a mechanism that allows citizens to affect the government's agenda through initiatives pursued using tools such as the Avoin Ministerio and, now, the governmental Kansaloite website, the government has also actively sought citizen input to internally draft new legislation (e.g. the crowdsourcing process initiated to draft off-road traffic reforms, see Aitamurto & Landemore, 2015).

The Icelandic and Italian cases are quite different, as the choice to adopt ICTs for PM was motivated by specific contingencies. In Iceland, the main trigger was a deep and transversal crisis which invested the political and the financial systems. While the Icelandic government managed to maintain an adequate political capacity to kick off the constitutional reform process, it did outsource to the CAC and to citizens the task

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[7]A list of the 13 citizens' initiatives with the corresponding number of signatures collected can be found at https://www.kansalaisaloite.fi/fi/hae?searchView=pub&orderBy=createdNewest&show=sentToParliament&minSupportCount=50.

Table 2. Summary of case studies along our proposed analytical framework.

	Iceland	Italy	Finland
Initial policy formulation space	Political capacity: + Technical capacity: −	Political capacity: − Technical capacity: +	Political capacity: − Technical capacity: −
Selected mode of direct collaboration	Policy co-design	Policy design fine-tuning	Crowdsourced policy design
Clarity of the assigned task	Medium	Low	High
Features of the main platform	Website design: Essential but link with institutional process Goal: ensure maximum transparency	Website design: Rich Goal: providing multiple ways to deliver inputs	Website design: simple and interactive Goal: shaping potentially successful proposals
Use of inputs delivered by citizens	Negative (blocked by changed political agendas)	Uncertain (lack of transparency on the use of inputs)	Potentially Positive (intersection with existing policy agenda)

In the first row, + and − indicate, respectively, the availability and the lack of political and/or technical capacity.

of providing the contents to steer the new document. In the Italian case, the recourse to ICTs aimed to overcome the lack of political consensus on the proposed reform. By inviting citizens to provide their feedbacks, the government aimed to show its attempt to tackle salient issues in an innovative way and thus to obtain an external support to innovate the education sector.

As for *the clarity of the task assigned to citizens*, the three analysed cases provide different insights. In the Italian case, the final aim of the consultation was outlined clearly only *after* the actual consultation period had ended. In this sense, the task assigned to citizens remained rather vaguely defined. This, in turn, prevented citizens from engaging and contributing strategically to the design of the policy. Conversely, the Finnish institutionalization of citizens' initiatives is accompanied by a clear definition of the tasks as well as of the steps that need to be undertaken to ensure that attention is given to public concerns in PM. Ways to affect the government agenda are indeed clearly outlined in the CI-Act and are not restricted to specific cases: citizens are aware of steps to take to have their legislative proposals discussed in Parliament.

Finally, the Icelandic case represents a middle-ground situation. In this case, the task was clearly formulated when the constitutional reform began, as it was clear that the Parliament intended to externalize the task of elaborating the constitutional text to Icelandic citizens. However, as commenters have noted, a preoccupation with the representativeness of the Icelandic population translated into a sequence of steps (the random sampling of National Forum participants, the election of CA members, the spontaneous and uncoordinated provision of feedback, and final referendum validation) that made the collaborative process more complex – and perhaps more obscure – than initially expected (Landemore, 2015).

In relation to the features of the main platform adopted, we find that two of our cases are extreme opposites. On one hand, the Italian website offered more possibilities to provide feedback but without clarifying how input would be considered. On the other hand, the Icelandic CAC website did not allow any specific interactive procedure and was mainly designed to function as a point from which the CAC could transparently make its working materials available to citizens. Ultimately, the richness of the Italian website, in conjunction with the overall vagueness of tasks assigned, resulted in a confused mode of interaction

between policy-makers and citizens. All in all, the use of ICTs in the BS case mostly aimed at legitimizing education policy content without focusing on how consultation would be realized. Conversely, low levels of strategic ICTs employment in the Icelandic case were compensated for by testing the results of the drafting activity through a referendum. In this sense, the Icelandic collaborative process clearly aimed at legitimizing policy contents by enacting a process that was accountable and legitimized.

Somewhere in between, the Finnish OM case represents an attempt to maintain a simple interactive framework while ensuring the best possible result. The website presented a simple way to collect input from users, to signal which of these constituted common (and important) concerns, but also to discard those that could hardly be proposed as citizen-initiated legislation. Concurrently, elaborations of actual proposed text occurred offline to avoid confusion, but this did not transcend public scrutiny as long as the final result of the draft phase involved the collection of supportive statements. In addition, once it became evident that the costs associated with collecting support statements were becoming prohibitive, the OM website became linked to the Ministry of Justice website, externalizing signature authentication costs while maintaining – at least in principle – its potential as a space for formulating law proposals.

Finally, looking at how the results of citizens' involvement in PM via ICTs are channelled by means of the policy process, of the three analysed cases, only the Finnish case generated positive results in terms of approval. However, not all public proposals submitted by Finnish citizens are successful. To the contrary, it seems that citizens' initiatives are welcome and successful when they intersect with an already existing (but difficult to practically realize) political will. That governmental motivations to include citizen input delivered via ICTs are fundamental to this process is proven to an even greater extent by the Icelandic case. Here, the constitutional bill was disapproved not solely due to opposition from parties that have always denigrated this reform *in toto*. In fact, parties that had initially supported the participatory process strategically maintained a low profile because the results collected through ICTs for PM ended up including risky provisions (such as reforms to the electoral system). In this sense, the will of Icelandic citizens did not meet that of the 'strong powers', which constrained the unfolding of this co-design process. In turn, the lack of inclusion of citizens' efforts in the overall normative framework generated a new wave of public protest that pressured the Icelandic government to follow through on the promises of a collaborative and democratic policy reform within the country (Glyfason, 2016).

Finally, from the Italian case, it is not possible to clearly determine whether the numerous suggestions offered by citizens had any effect on the content of the governmental bill presented to Parliament five months after the end of the public consultation. This is particularly evident from the reconstruction provided above: the section of the website designed to explicitly show that citizen feedback does shape the text of the law has always remained empty and has in fact disappeared from the website. It thus seems that the *fine-tuning approach* is, in political terms, the least costly way through which ICTs for PM can be adopted in policy design. This approach can lead to minimal adjustments to the policy the government initially meant to formulate. However, it has strong political consequences, as shown by the wave of protest against the BS decree that started soon after the Parliament approved the decree and lasted for over one year.

6. Conclusions: what can we learn in terms of policy design anticipatory effectiveness?

The analysis presented in this article and based on our proposed framework helps moving one step further towards understanding how ICTs can intersect and affect policy design processes. More importantly, it shows that the effects of ICTs adoption on PM are not linear. If, as argued above, policy effectiveness stems from a mix of political and technical capacities, the actual added value of using ICTs for effective and antici- patory PM depends upon several factors – governments' motivations, tasks assigned to citizens, technological materiality, and governmental use of the contributions collected from the public.

What the three cases have shown is that, in fact, including citizens via ICTs in PM has both policy *and* political implications. From the policy point of view, ICTs help identify common definitions and constructions of the content of a policy solution. This strategy leads to design policies that are more likely to be effective as they benefit from the insights and the expertise of citizens working as 'prosumers' of the policies themselves. From the political point of view, using ICTs in PM can help form a consensus on specific policy issues, as blurring the boundaries of PM affords a surplus of legitimation to on-going policy design processes and content but with- out eroding governments' leadership, given that policy-makers retain the final word on the results.

However, our three cases also show that the material aspects of ICTs use for PM do affect the likelihood of achieving these policy and political benefits. Paradoxically, the more complex and multi-optional the interfaces become, the less effective they are at channelling citizens' views – very likely because overly open interfaces indicate a lack of clarity of the task that is assigned to citizens. Thus, when designing ICTs for PM, policy-makers can manipulate citizens' participation by channelling their focus on specific issues or even nullify the potentials of ICTs for PM by deciding not to properly weight citizens' inputs or not to use them at all. However, in such cases, they are more likely to suffer from the political consequences of their ineffective use of ICTs.

Disclosure statement

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