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Design Principles for Online Platforms Fostering Deliberative Political Discourse

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Abstract. The design choices behind online participatory platforms, intended to facilitate interaction between citizens and government representatives, frequently undermine the potential for genuine democratic deliberation. This article presents a set of six success criteria for publicly owned online participatory platforms designed to facilitate the process of deliberation: *political privacy*, *discursive diversity*, *reciprocity*, *reflexivity*, *availability of information*, and *perceived impact*. In addition, 12 design principles that support these success criteria are formulated, whose use might increase the effective implementation and take-up of publicly owned online participatory platforms fostering democratic deliberation.

Keywords: Online participatory platforms, deliberation, e-democracy, design principles

1 Introduction

With technological innovation and rising rates of Internet use, civic interaction and political discourse are increasingly taking place online. The modern-day *Forum Romanum* takes the form of a freely accessible online platform [1], which can be defined as a website or application enabling interaction and/or exchange of goods and services between individual citizens, governments, private actors, and civil society [2-4]. Typically designed as cost-free services, online platforms have become an important means for mediating interactions between citizens and governments. Many online platforms are privately owned, driven by economic incentives and thus built around maximizing advertising revenue. Prominent examples include Facebook and Twitter, which have established themselves as important facilitators of citizen engagement [5, 6]. But there are also publicly owned online platforms, created with the purpose of generating public value [7]. *Debating Europe* [8], designed as an initiative of the European Union, is a typical case of a publicly financed and operated online platform promising to enhance civil rights and duties of participants in the information society, while giving governments access to a wide pool of potential solutions to the complex problems of the 21st century [9-11]. Launched in 2011, *Debating Europe* aims to

facilitate bi-directional communication between citizens and EU policymakers through the format of asynchronous textual “debates” on a multitude of topics, some of which can be proposed by platform users, reflecting the platform’s stated goal of promoting a citizen-driven, bottom-up approach [8].

This article has a similar use case in mind, with a special emphasis on publicly owned platforms’ potential to create space for democratic deliberation. Online platforms can be used for various purposes in the public sector [12], but supporting public deliberation takes a special role, as such platforms “offer the potential for widespread direct citizen participation in political decision making—potentially transforming the shape of democracy.” [13, p. 228]. Yet, publicly owned participatory platforms often fall short of their desired impact and stated goals [5, 13, 14]. Of the multiple factors that can influence the success or failure of an online participatory platform, scholars frequently highlight the impact of ill-advised design choices – choices that do not attempt, or do not manage, to translate the underlying values into effective features of the platform [9, 13, 15]. Against this background, this article sets out to formulate a set of success criteria for publicly owned online platforms fostering deliberation, and to derive a group of design principles that support these success criteria.

Thus, our research objective is “*the formulation of design principles for publicly owned online deliberation platforms to support the successful implementation and take-up of such platforms.*”

This paper is structured as follows. First, we contextualize several key concepts behind our research goal: participatory and deliberative democracy and online participatory platforms. Then we briefly discuss related work on the design of participatory platforms supporting deliberation. Afterwards, a brief review of the methodological literature will help us outline our strategy for establishing the success criteria for online deliberation and explain the process of creating our artifact – the design principles stemming from these criteria. The next section is a systematic formulation and presentation of our results. We elaborate on our success criteria – *political privacy, discursive diversity, availability of information, reciprocity, reflexivity, and perceived impact* – and derive a set of design principles geared towards these six standards of successful deliberation, that could guide the work of the architects of an online platform where citizens, politicians, and other stakeholders can come together to deliberate on matters of common concern.

2 Theoretical Background

2.1 Participatory and Deliberative Democracy

In *participatory democracy*, democratic legitimacy is based on active and enduring participation of ordinary citizens in the decision-making process [16]. Solutions to societal problems are produced as a result of engagement between the widest possible spectrum of citizens, sometimes organized in civil society movements, and political institutions. However, the ways in which democratic institutions should be redesigned

to accommodate this joint engagement, remains a matter of debate [17] to which this paper seeks to contribute.

Deliberative democracy goes further – in addition to viewing public discussion as a space where a range of pre-established opinions can be voiced, it also encourages the process of *deliberation*, defined as collective reasoning, ideally resulting in consensus [18]. As citizens deliberate about how to best tackle a problem, they are prepared to develop and change their views when faced with a convincing argument. In other words, deliberative democrats highlight the importance of debate and discussion aimed at producing reasonable, well-informed opinions among participants [19, 20]. The belief that political deliberation can indeed have a transformative influence on citizens and public authorities inspired Habermas's concept of the "public sphere" [21], whose contemporary manifestation – enabled by the digital revolution – is referred to as the "virtual public sphere" [22, 23].

2.2 Online Participatory Platforms

The virtual public sphere rests upon an ecosystem of information systems (IS) designed to support political participation and deliberative discourse [13]. In this context, online participatory platforms can be defined as a digital service offering citizens, governments, and nongovernmental actors such as NGOs the possibility to use an Internet-connected device to interact, transcending previous barriers to political participation such as language, geographical distance, or time and resources needed to travel to a political forum [2, 4, 9, 10].

According to Rose & Sæbø [13, pp. 229-230], online platform design is a "nontrivial issue" given that design style of the platform determines the outcome of the discussion, which includes participants' willingness to engage with each other as well as the form and quality of deliberation present on the medium. Similarly, Christensen [9, p. 2] emphasizes the importance of making careful choices regarding the particular "bundle of design features" that constitute a given online participatory platform, as different design features correspond to different democratic ideals, producing different patterns of political participation. Hence, to create a fertile ground for deliberative democracy outcomes, online participatory platforms should be guided by a set of practical features and design principles that are known to optimally support this democratic ideal.

2.3 Related Work

While there is a large body of literature focused on listing the criteria for an effective deliberative public space or evaluating existing electronic deliberation solutions, few of these articles offer concrete platform design recommendations. In this section we briefly review two most relevant works focused on design considerations for online deliberation, discussing their contributions and limitations with respect to our inquiry.

Towne and Herbsleb [10] distill a list of considerations for the design of online deliberation systems based on an analysis of several practical examples of such systems. With 30 such considerations, they seem to be aiming for breadth rather than depth, explaining some of their recommendations with as few as two sentences. Some of their considerations are rather general, but the article still contains several highly

valuable principles specific to deliberation, such as “open opportunities for communities to form” [10, p. 111] Semaan et al. [24] designed and prototyped a new political deliberation technology in response to interviews with a group of US citizens forced to resort to workarounds when using social media to interact in the online public sphere. The authors identified a relatively narrow set of seven design requirements such as “serendipitous exposure to diverse political information” [24, p. 3172]. While highly original and useful in certain contexts, these requirements seem somewhat arbitrary, with insufficient disclosure regarding the process through which they were developed.

We note that neither of these papers was published in the past five years and neither seeks to present a relatively broad set of well-reasoned design principles, thereby opening space that our paper is well-positioned to fill.

3 Methodology

3.1 Success Criteria

To establish success criteria (SC) for online deliberation platforms as discussed in current research on this topic and to subsequently derive design principles (DP) from these criteria, we conducted a structured literature review. SC in the context of this paper refer to the standards by which online participatory platforms can be judged, comparable to benchmarks that need to be reached in order to achieve success [25].

Following vom Brocke et al. [26], we employed a keyword search on three academic databases (EBSCOhost, Scopus, and ScienceDirect). First, we used a narrow set of keywords (*deliberation*, *e-deliberation* and *online deliberation*); in a second iteration we added two further keywords we encountered in the selected articles (*deliberative democracy* and *online discussion*) – we were interested in scholarly debates related to both the online and the offline realms. This process resulted in an initial set of 62 articles, of which we discarded – based on the abstract – 42 articles due to a thematic misfit. The remaining 20 articles were analyzed for potential SC that we recorded in the form of direct quotes from the articles. With the first set of 20 articles as a basis, we conducted a forward and backward search [27], resulting in another 35 potentially relevant articles, of which we selected 16 articles, based on their thematic relevance to our endeavor. These articles too were analyzed for potential SC; they typically provided a more detailed elaboration of one particular criterion, along with concrete ways the criterion has been fulfilled by existing or prototyped online platforms. In addition to using them to inform the process of finalizing our SC, we set these 16 articles aside for the purpose of developing DP.

After this first round of reviewing academic literature, we created a preliminary list of SC. This list was finalized in the second round of our review process. For this step, we compared the noted quotes from the articles, discussed the underlying concepts and defined clusters of similar SC in overarching categories. Where necessary, the full articles were consulted again to make sure our interpretation fits the authors’ narratives. This iterative process resulted in a final list of 6 SC: *political privacy*, *discursive diversity*, *availability of information*, *reciprocity*, *reflexivity*, and *perceived impact*. Our final concept matrix is presented below (see **Table 1**), documenting our selection of 20 articles where a discussion related to one or more of our SC occurs.

Table 1. Concept matrix mapping the selected literature against our six success criteria for deliberation (PP = Political Privacy; DD = Discursive Diversity; Rc = Reciprocity; Rx = Reflexivity; AoI = Availability of Information; PI = Perceived Impact)

| Success Criterion > | PP | DD | Rc | Rx | AoI | PI |
|------------------------------------|-----------|-----------|-----------|-----------|------------|-----------|
| Halpern & Gibbs, 2013 [5] | x | x | x | x | | |
| McLeod et al., 1999 [28] | | x | | x | x | |
| Moy & Gastil, 2006 [29] | | x | | x | x | x |
| Scheufele et al., 2004 [30] | x | x | | | | |
| Rafaeli & Sudweeks, 1997 [31] | | x | x | x | x | |
| Wise et al., 2006 [32] | | x | x | | | x |
| Verdiesen et al., 2018 [33] | x | x | | x | x | |
| Dahlberg, 2004 [34] | | x | x | x | | x |
| Fishkin, 2009 [35] | | x | x | | x | x |
| Gudowsky & Bechtold, 2013 [36] | | x | | | x | |
| Esau et al., 2017 [37] | | | x | | x | |
| Christensen, 2021 [9] | x | x | x | | x | |
| Towne & Herbsleb, 2012 [10] | x | x | | x | x | x |
| Janssen & Kies, 2005 [38] | x | | | | | x |
| Friess & Eilders, 2015 [39] | | x | x | x | x | x |
| Bobbio, 2019 [40] | | x | | | x | x |
| Kennedy et al., 2020 [41] | x | x | | | x | |
| Shin & Rask, 2021 [42] | x | x | x | | x | |
| Friess et al., 2020 [43] | | x | x | | x | x |
| Esteve Del Valle et al., 2020 [44] | x | x | | x | x | x |
| TOTAL | 9 | 18 | 10 | 9 | 15 | 10 |

3.2 Design Principles

Based on the six SC and their treatment in the literature identified in our review, we developed a set of DP for online participatory platforms supporting deliberation. We follow the understanding of platform design as “the configuration of specific design elements when building a new platform” [15, p. 881]. All DP are formulated following the suggestions of Chandra et al. [45] for conceptualizing DP for artifacts oriented towards human use. They identify three categories of DP suggested by the IS scholars who focus on principles of design for socio-technical systems. The first category of DP gives perspective of the actions that artifact allows for and is defined by authors as *action-oriented* DP. The second category of DP provide the features for the artifact describing how it should be built or what it should include. This category is defined as *materiality-oriented* DP, and it only provides the properties for the artifact without mentioning the actions it should take. The last category that Chandra et al. [45] differentiate combines the above described two categories and does not favor one or the other. *Action and materiality-oriented* DP depict *how* the artifact should be built by mentioning the exact features it should contain, as well as *what* the artifact should allow *for* by including in its formulation the actions that will be enabled for users. After a

thorough analysis and evaluation of a set of DP, the authors conclude that an effective formulation of DP should consistently include both action and materiality perspectives of the artifacts.

For the sake of consistency and structured approach, we decide to build the DP for digital participatory platforms following these instructions, always combining the *how* with the *what for* component. Hence, the formula we adopt for our final artifact is: *the system should be provided with “[material property—in terms of form and function] in order for users to [activity of user/group of users—in terms of action]”* [45, p. 4045].¹ However, our understanding of *action-oriented* principles is broader than that of these authors. For the purposes designing an online platform practically manifesting the ideals of democratic deliberation – a context necessarily involving a community of users interacting over time – it is at times sensible to focus not on individual activities or actions by users, but on an accumulation of such actions in terms of an outcome or a possibility. Hence, the *what for* aspect of some of our DP is structured as *[outcome for users—in terms of possibility to do something]*, e.g. the possibility to access information without excessive algorithmic involvement or the availability of data measuring the outreach of users’ comments.

4 Results

In the following section we introduce each of our SC followed by the DP derived on its basis. The DP are both action as well as materially oriented. Furthermore, a brief rationale for each DP is presented, along with its theoretical context if applicable.

4.1 Design Principles for Political Privacy

Our first success criterion pertains to the area of political privacy. Hereunder fall all aspects that indicate users’ concern regarding their anonymity, identifiability and other identity-compromising issues that could negatively impact the users’ perceived ability to speak freely. In this context, Halpern and Gibbs [5] argue that the level of identifiability or anonymity of individual users regarding digital media is likely to influence the nature of their respective online deliberation. Hereby, scholars have claimed that anonymity in the context of online media could reduce deliberation, due to a lack of social context cues, as interactions are separated and detached from the human consequences [9, 33, 46]. Hence, in the context of digital participatory platforms this detachment can solicit uninhibited behavior, such as insulting or harassment of other users due to a lack of social judgement [47]. Complete identifiability on the other hand also poses critical issues for online deliberation, such as users trying to fulfill perceived social norms, by agreeing with socially desirable opinions, rather than expressing their actual opinion, out of fear for social judgement, also referred to as social desirability bias [48, 49].

¹ For the sake of simplicity, we omit the third part of the DP structure recommended by Chandra et al., where boundary conditions, such as implementation settings or user group characteristics, are included

Therefore, online deliberation necessitates both elements that insure partial anonymity and identifiability. In order to decrease any social biases, users require political privacy, without however detaching individuals from the discourse itself. Thus, to ensure success, digital participatory platforms should incorporate features of both identifiability and anonymity, in order to benefit from the respective combined advantages. Political privacy in the context of other participants of the platform should therefore be granted to users, while at the same time introducing a mechanism to inhibit potentially detrimental behavior for deliberation. Hence, we propose:

***DP-1:** Participation on digital participatory platforms should be pseudo-anonymous, by means of verified accounts which allow for anonymous usernames and are monitored regarding misconduct, to encourage genuine expression while discouraging antisocial behavior.*

Furthermore, to inhibit detrimental behavior, e.g. monitoring, platforms should adhere to concrete regulation, as to avoid arbitrary punishments, partiality and censorship. Who has access to personal data of participants should therefore be defined, following the principle of least privilege (PoLP), meaning that only data that is required to fulfill the legitimate purpose is accessible to the respective user, process or program [50]. At the same time participants such as politicians or experts should be enabled to make their contributions visible to as many users as they want. Thus, we derive:

***DP-2:** Accessibility of user-data for platform providers should be limited to what is strictly necessary (PoLP), to enable participants to control how their generated data is being used in terms of visibility.*

4.2 Design Principle for Discursive Diversity

In the criterion of discursive diversity, we combine several concepts from the literature, which relate to the size/composition of the community engaged in the discussion, exposure to diverse opinions/counterarguments and the inclusiveness and impartiality of the platform.

In their study of the social media impact on democratic deliberation Halpern and Gibbs [5] define networked information access as the level of interactions within and across diverse types of community. Following Scheufele et al. [30], they see this affordance as an important catalyst for deliberation and civic action. Several other papers processed in the literature review also find a positive correlation between the size/diversity of the discussion group and the deliberative quality of the discussion [28, 29]. According to Moy and Gastil [29], in heterogeneous groups participants are more likely to confront other members of the group and to encounter opposing points of view. This exposure to disagreement presents participants with alternative perspectives on the topic, which in combination with individual's reflexivity produces better cognitive activity [51].

Exposure to disagreement happens under the premise that the group is inclusive, and the discourse is impartial, meaning it does not allow for biases or a dominance of special interest groups. Dahlberg [34] delineates public sphere criteria of inclusion and impartiality as the openness for all groups to participate and equally express their attitudes, desires, and needs. Or else, certain segments of the public for whom the topic is of relevance, might be left out because of the platform's access bias [10].

As the reviewed literature argues, networked information access can be a catalyst for a high-quality deliberative discourse. That being so, a digital participatory platform should have instruments to prevent high levels of polarization in dominant opinions and potential echo chambers. The following DP suggests a built-in scanning tool to identify potential echo chambers at an early stage and label them as such. It needs to be mentioned that the scanner should only analyze the content of the discussion and provide graphical illustration on the percentage of “mainstream” opinions – in no way can it be used to track personal contributions of users and profile them based on their comments. This graphic will be useful for participants to assess whether opinions raised in a particular forum are heterogeneous. Therefore, we derive:

***DP-3:** To encourage discursive diversity among the users, the platform should automatically scan the content of each forum and assess its level of polarization.*

4.3 Design Principles for Availability of Information

In the context of online participatory platforms one key determinant for deliberation can be found within the availability of information for users. Scholars have emphasized the role that information availability plays in how participatory processes take place [36, 37]. Hereby, information can be seen as more than a source for reasoning; instead, it is also a catalyst for discussions to take place, thus stimulating deliberation [52]. Additionally, common information helps to share mental models and fosters coherent communication between users [10], which further corroborates the importance of available information for deliberation.

However, mere availability of information does not yet enable deliberation among individual users, as the quality of information is necessarily a boundary condition in this context. Although communication does not need to be devoid of nuance or free of figures of speech, Moy and Gastil [29] describe how vague use of language and hidden messages can disrupt deliberation. This suggests that both content and tone of communication play an important role. In this context, Esau et al. [37] identify rationality, respectfulness, reciprocity and constructiveness as prerequisites for how information needs to be communicated, in order to foster deliberation.

Thus, availability of information as a success criterion for deliberation in online participatory platforms, does not pertain to the availability of all information, regardless of the quality. Rather availability of information pertains to contextual information, which has been made available in a rational and respectful manner. Additionally ethical concerns have to be considered. To make content widely available, private platforms often rely on algorithms, which automatically match content and users according to their previously collected data [53]. Beside the potential for forming echo chambers [54], matching content and users automatically in an untransparent manner, might pose a conflict of interest for political institutions managing a public platform with the purpose of facilitating political discourse – they might be incentivized to steer debates in certain directions by making certain types of content more easily available to some users. However, we argue that users should be enabled to engage with content they prefer to engage with or are experts in, by personalizing their newsfeed manually. This could be seen as a compromise where users retain the freedom to choose the content

they want to consume without losing out on potentially more engaging content. Thus, the next DP reads:

***DP-4:** All information should be made available neutrally, without matching content to users automatically, but rather enabling users to choose their preferred content manually.*

Furthermore, how users can access available information can be considered a relevant aspect for the quality of deliberation and participation. The EF English Proficiency Index of 2021 reports that among EU member states there is a discrepancy regarding English proficiency of citizens. While some countries show very high levels of English proficiency among citizens, others display only moderate or even low levels of English proficiency [55]. With English as the leading common language of Europe, these findings further suggest potential issues for how information should be made available on digital platforms. Citizens from different member states who want to communicate on an online platform, might find themselves without a common language, thus limiting the potential for deliberation and participation. Therefore, the platform needs to account for potential language barriers. Thus, we derive:

***DP-5:** To make content widely accessible, the platform needs to automatically account for language barriers by seamlessly translating any communication on the platform into the native language of the respective user.*

4.4 Design Principles for Reciprocity

For a forum to be deliberative, participants need to engage in a collective learning process, which necessarily entails a high level of interaction, or reciprocity, among participants. According to Bächtiger and Pedrini [56], scholars agree that a high level of interaction is a key defining feature of communication in a deliberative space. Halpern and Gibbs [5] also use interactivity — sometimes referred to as conversational coherence — as a measure of the quality of deliberation among discussants on social media.

The social media platform that is most widely used for political debates, Twitter, suffers from a major impediment to constructive deliberation, namely the difficulty of tracing the development of a discussion. Those who wish to publicly interact with another user can only do so by embedding an individual contribution in their own single post. The design of the platform is thus well suited for a brief exchange between two high-profile users, but it becomes impractical when a large number of people wish to engage in a series of interactions. In contrast, Aragón et al. [57] demonstrate that offering users a hierarchical view of conversation threads significantly enhances deliberation on an online discussion interface. Changing platform design from a linear to a tree-like display of comments increases the likelihood of interaction among users and the depth of their argumentation [57]. The debates on the platform envisioned in this paper will also be organized into a multi-level commenting thread. In each comment, users should be able to embed a portion of a previous comment for ease of reference and traceability of the evolution of the discussion. Hence:

***DP-6:** The commenting function of the platform should encourage meaningful interaction among users by means of hierarchical (multi-level) visual organization of commenting threads and by allowing users to easily cite the original argument.*

Repeated interactions with other users carry a social, binding force, which increases the quality and depth of conversations [5]. This is why Towne and Herbsleb [10, p. 111] recommend that for an online deliberation platform to be highly effective, the designers should “open opportunities for communities to form.”

The users of a successful participatory platform will then gradually form a community of practice through participation in the debate, actively enforcing the deliberative culture of the platform. On the lowest level of effort, users should be able to upvote comments of high (deliberative) quality, thereby promoting content that embodies the spirit of deliberation as opposed to contributions with which the largest group of participants agrees. Users should also be allowed to summarize the arguments of each side of the debate for other users’ overview, which is also an exercise in truly considering the merits of each individual viewpoint [29]. General content summaries are becoming relatively common practice on existing fora such as YouTube or Quora. Lastly, to be inclusive of participants of various levels of knowledge, more advanced concepts should be hyperlinked to an open-source explanatory “encyclopedia entry”; users should also be able to add and edit such entries. The case of Wikipedia shows that individuals are willing to invest extensive work into content writing and website maintenance in the interest of others’ learning. Thus, we derive:

DP-7: To contribute to the formation of a community of practice, users should be encouraged to collaboratively maintain and edit certain functions of the platform, such as pro/con argument summaries and term explanations.

4.5 Design Principles for Reflexivity

Following Habermas’s conceptualization of the rational-critical debate, a deliberative discussion should not be a chain of immediate reactions, but a series of “thought out arguments and reflections” [44, p. 216] justified by validity claims [34]. Merely asking participants to uphold such standards tends not to be sufficient — yet, innovative platform design choices can encourage a culture of reflection. To function properly, a deliberative space requires that participants engage in a reflexive thinking process before they voice their opinion. Reflection is a microlevel process of making sense of information and forming thoughtful judgements, that enables macrolevel deliberation [28]. In Dahlberg’s words, this entails a critical examination of one’s “values, assumptions, and interests, as well as the larger social context” [34, p. 29].

We propose a DP inspired by Verdiesen et al. [33], where each comment posted on the platform would be visually divided into an underlying fact and its interpretation, i.e., the argument itself. The fact can be further reinforced by a collapsible hyperlink to the source, while the interpretation can be supported by a meta-field with the assumptions, values, or motivations informing it. This feature would not be mandatory, but comments making use of it would be considered more in line with the deliberative spirit of the platform, and thus more likely to be read and responded to. Structuring their comments according to this scheme, users would be encouraged in individual as well as collective reflection over the factors that shape their attitudes and feelings. Thus, the respective DP reads:

DP-8: To encourage users to think reflexively, the platform should contain an optional feature allowing a visual breakdown of comments into a fact (with a

collapsible reference to the source) and an interpretation (with a collapsible reference to any assumptions).

The following DP is motivated by a desire to highlight and reinforce Habermas's much-quoted notion of the "forceless force of the better argument" [in 39, p. 332]. A Habermasian public sphere emphasizes due consideration of all sides' (rational) arguments [58]. The ultimate manifestation of this attitude is a readiness to change one's mind when presented with persuasive reasons to do so [10, 16]. Hence, to encourage users to be open to modifying their opinion in light of strong arguments, each comment posted on the platform should have a special button for declaring that a contribution caused a reader to change his or her mind. In the deliberative culture of the forum, authors of comments that swayed a large number of users could display this on their profile as a badge of honor. The frequency at which this button will be pressed will be a good proxy for how deliberative the forum really is. Therefore:

DP-9: *To encourage users to be open to modifying their opinion in light of strong arguments, the platform will have a button for declaring that a contribution caused a user to change his or her mind.*

4.6 Design Principles for Perceived Impact

In their empirical research on the quality of political conversations, Janssen and Kies [38] touch upon the concept of strong vs. weak discussion spaces, putting the focus on perceived impact that participants have in regard to their contribution. They build their argumentation based on Fraser's [59] definition of strong public spheres as the ones that encompass both opinion formation and decision making in deliberative practices. Later Friess and Eilders [39] refer to the same distinction when talking about empowerment of the public in online discussions. Indeed, empowered individuals tend to deliberate more seriously [60] and are motivated to provide high quality input [61].

Scholars have discussed different factors impacting public perceptions of a discussion space such as availability of visibility numbers on the platform - engagement/outreach, politicians' involvement in the discussions or the opportunity for participants to impact the outcomes/decisions [24, 38]. To allow for actual impact on decision-making, users of the platform should be able to follow up on the discussion and see whether it has reached the politicians, and their consecutive actions. Additionally, for politicians to make use of the discussions held, they need structured information about the process and the outcome of the discussions. Here the platform should facilitate easy access to burning topics, scan and feature relevant questions and concerns users raise in the forums. Thus:

DP-10: *Politicians' engagement should be openly communicated on their profile so that platform users can follow up on the discussions and consecutive actions.*

As outlined above, a discussion tends to be more deliberative when participants are aware of the potential impact it might have. This however does not mean that every discussion should have a tangible result in form of a policy change or a reform. This rather means that participants should believe and trust that their engagement and contributions are valued by the policy makers. However, if the contributions are unstructured, they might not even reach decision makers. Hence, the platform should generate structured reports on the discussions to make it easier for politicians to process

the information. These reports should contain information on the frequency and the nature of common concerns and the questions raised. To summarize:

DP-11: The platform should provide tools and instruments to systematically generate structured reports on the processes and outcomes of the discussions to support decision makers with direct contribution on the relevant topics.

As already described in the section above, users are more encouraged to engage in the discussions and contribute in a serious and respectful manner when they feel their ideas are reputable within the community. The ability to track the impact of their contribution motivates the users to engage and contribute to the discussion in a more mindful way. On the other hand, the opportunity to share and reflect on others' comments triggers argumentation and reasoning, as people address specific opinions raised in the forum. Hence:

DP-12: To encourage meaningful contributions and to boost engagement, the platform should show users the number of views their comments garnered, while also allowing comments to be shared/reshared by other participants.

5 Conclusion

Approaching platform design through the lens of democratic values poses inherent difficulties. Most notably, practical issues emerge that can be described as a kind of gap between theory and reality. For a practitioner to be able to develop a public participatory platform, a theoretical concept related to democratic values needs to be translated in an applicable principle, which then can be translated once more into actual design. This series of translations proves to be a significant challenge, evidenced by the low success rate and limited engagement of many existing publicly owned online platforms.

This paper seeks to make a modest contribution in tackling this challenge. The aim of this paper was to generate an artifact which would enable practitioners to develop a public online participatory platform well-suited to allow citizens, governments, and other actors to partake in deliberative political discourse. To this end, six success criteria for online deliberation were developed, along with 12 concrete design principles supporting these criteria. Some of the ideas presented here, such as polarization scanning mechanisms, decentralized up- and downvoting of user-generated content based on deliberation potential, or reporting functionalities directed at policymakers, can be seen as an original contribution to the online deliberation literature. Further research could elaborate on these suggestions or put them to the test in a platform prototype. Future work building on our contribution could also explore the theme of the impossibility of value-free design, examining the ways in which design teams tasked with developing an online participatory platform, may be affected by their own sets of values, which may interact in various ways with the design requirements, potentially leading to a variety of possible instantiations.

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