

# HYBRID PARTICIPATORY BUDGETING: THE CHALLENGES OF A MULTI-CHANNEL PARTICIPATION<sup>1</sup>

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## INTRODUCTION

Over the past 25 years in many European democracies took place a bloom of experiments of Democratic Innovation (DI) and the development of tools for active involvement of citizens and their organizations in public policy-making processes (Allegretti, 2010). Institutions, Civil Society organizations, researchers and professionals have been involved in a complex activity of design and implementation of participatory procedures, with a special attention on territorial development issues: Participatory Budgets, Participatory Planning, Participation to Strategic Environmental Assessment (SEA), Agenda 21, Scenario Workshops, etc.

Between the existing urban participatory democracy practices, this paper focuses on Participatory Budgeting (PB), a structured mechanism where the inhabitants are engaged in the definition of (part of) the financial priorities of the Local Authority in charge of urban management, generally a Municipality (Sintomer and Allegretti, 2009; UN-Habitat, 2004; Wampler, 2012). Firstly experimented in Brazil in late 80's, during the last 25 years PB has been spreading worldwide reaching an indicative number of 3000 cases at world level (Ganuza and Baiocchi, 2012; Sintomer et al., 2013). While Latin America is the continent where PB this practice has been diffused widespread, around a third of these cases take place in Europe, where PB recently started to be experimented in relevant capitals and metropolises as Paris, Lisbon, Milan. Participatory Budgeting is "a mechanism (or process) through which the population decides on, or contributes to decisions made on, the destination of all or part of the available public resources"(UN-Habitat, 2004, p. 20). This "decision" is generally the final outcome of a structured deliberative mechanisms that take place on a long term and is organized around subsequent stages of deliberation and refinement of proposals, defined as the "cycle" of PB<sup>2</sup>. In addition, based on a previous research carried out in Europe in the period 2005-2009 five "loose" criteria and rules to describe Participatory Budgeting are identified: 1) Explicitly discussing public expenditures; 2) Having a structured (not necessarily formally) deliberative procedure; 3) Coinciding with an institutional responsibility of the Local Authorities in charge for public budgeting, generally a Municipality; 4) Having some degree of co-

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<sup>2</sup> The reference to a PB cycle regard its iterative repetition year after year, consistently with the pace of financial planning for local authorities. Generally a cycle starts with the definition by the authority of a pot of resources to be discussed and decided publicly. It is composed by four main stages: i) A preliminary stage of Idea Gathering; II) Ideas filtering and development into projects; III) Decision/Selection of the ideas – generally through voting -; IV) Implementation and Monitoring). Decisions made under PB are generally implemented by the public sector through ordinary procedures.

decision that makes the outcomes of PB binding for public decision-making; 5) Giving feedbacks to citizens over the implementation of PB outcomes in public policies. (Sintomer et al. 2008, p.168). Within this loose definition PB processes have been experimented worldwide with a wide difference of rules, methodologies, and sequences, developing and integrating a great variety of design solutions.

On one hand contextual variables strongly influence the design of a PB process, but on the other hand also the availability of new procedural solutions diversified the design models of PB in a great diversity of practices. Indeed in recent years, the emergence of the new technological paradigm based on information and communication technologies (the consolidation of the network society (Castells et al., 2006)) profoundly and rapidly transformed the context of implementation of PB hybridizing as well the design of those processes. The widespread diffusion of ICTs technology profoundly and rapidly innovated the design strategies of PB by providing a number of standardized and simplified procedural solution for the configuration of participatory assemblages, that have been enthusiastically adopted by governments as well as by Social Movements and Organizations of the civil society (Allegretti, 2011). If on one hand there are undeniable successes in terms of numbers of participants and reduction of costs and time invested in the design and management of participatory assemblages, on the other hand certain consequences of this enthusiastic hybridization of participation seems not yet adequately deepened.

The main hypothesis of this paper is that the design of a DI is not neutral to its legitimacy because it entrenches the substantial ideal of democracy that underlie the participatory spaces. As a consequence, the hybridization of design influences directly the legitimacy mechanisms of PB, by influencing its substantial democratic features of an inclusiveness and empowered deliberation. The objective of this paper is to set up a theoretical framework to interpret the main impact of ICTs in the design of PB and how it affects its legitimacy mechanisms. The paper is structured in three sections.

The first part provides a general framework regarding the theories regarding legitimacy of PB, advocating for a normative and rational approach to legitimacy centered on the key relation between the design and the context of implementation of PB.

Second, an overview of the different dimension of design in a DI (object, procedural and institutional design) and their relative importance in building the legitimacy of PB, as well as their interdependence.

The third part include a preliminary review of the main implications of the hybridization of PB, regarding respectively: the procedural hybridization, the emergence of complex system of multi-channel participation and finally the progressive gamification of the interaction design.

This paper reports early results of the research component of the project EMPATIA, an Horizon 2020 project focused on the development of ICT tools and methodologies to support Participatory Budgets and Democratic Innovations.

Being developed in the first months of the project it does not entail field research methodologies, but relies on the literature review of scientific articles, books and case studies on the key topics of Democratic Innovation, Participatory Technology, civic technology and collaborative platforms. Its exploratory purpose is reflected in the open conclusions that postulate a new set of research hypothesis to be tested in future field research.

## DESIGN AND CONTEXT IN THE LEGITIMACY OF DEMOCRATIC INNOVATIONS

Democratic Innovations (DIs) as the Participatory Budgeting (PB) could be defined as “institutions that have been specifically designed to increase and deepen citizen participation in the political decision making process” (Smith, 2009). Differently from other definitions, (Participatory Processes, Deliberative Processes, Technologies of Participation, Experiments of Participatory Democracy, etc) the notion of DI explicitly refers to “innovation” applied to existing democratic settings, as a sub-set of features of system of democratic governance and explicit strategy to respond to perceived democratic deficit (Smith, 2013).

It is useful to remind how the political legitimacy of DIs is established in relation with the political legitimacy of the related democratic institutions involved (eg the municipality) as well as the general degree of legitimacy of the democracy as an ideal in the political culture of the contest of implementation. As a consequence, the legitimacy of DIs regards not only those that are actively engaged in their participatory machinery, but also the relation between active participants and the rest of the players officially legitimated to make decisions: the elected bodies, but also the rest of the citizens that participate to democratic life.<sup>3</sup>

According to a pragmatic and instrumental perspective, the legitimacy of DIs depends by the outcomes they generate. Obviously an abstract definition of “good outcome” can’t avoid a certain level of ambiguity and could be interpreted in different manners. It could be defined for example: i) with respect to the object of discussion/deliberation: the consensus toward decision that have a practical influence on the life of participants and of the other people/citizens that will be influenced even if they didn’t participate (in the case of Participatory Budgeting it refers to the decisions on budgetary priority); ii) with respect to the subject of the process and the empowerment of social and institutional actors and stakeholders engaged; III) in terms of democratic intangible goods as for example “inclusiveness, popular control, considered judgement and transparency” (Smith, 2009, p. 186). According to Peter “instrumentalism take it as a premise that there is an ideal outcome that can be identified independently of the democratic process, and in terms of which the value of the democratic process, its legitimacy, can be gauged” (Peter, 2016).

Observing DIs from a different perspective, a purely normative approaches highlights the relevance of the design of process, rules and means of interactions in the mechanisms of legitimacy of DI. This approach reflects on the scale of DI the main mechanisms of legitimacy generally advocated in hegemonic theories of democracy (Avritzer and Santos, 2005), including authors as Kelsen or Bobbio. In this perspective a DI is legitimate if its procedures of decision making are consistent with democratic rules and mechanisms. It refers to the explicit legitimacy related to the legal status of Democratic Innovations (legitimate if legal), and at the same time to the implicit legitimacy in following the implicit authoritative mechanisms entrenched in the liberal democratic tradition, in particular on the central importance of representation and selection mechanisms in the procedural design of decision-making. Representation remains an important intrinsic element of legitimacy of DI at least for two other reasons. First for a matter of authorization, especially in those DI that have direct influence on public policy making, based on the principle that . For this reason PB, that have binding effects on public policy making requires to have a sufficient quantitative base of participants to ensure its political legitimacy and introduces more than one authoritative moment along its procedure (the election of delegates, the vote of the

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<sup>3</sup> In a DI as PB, that is open to public participation For example, an important consideration regards the fact that, even in the most successful Ps, the range of participants is always significantly minor of those who participate in elections for the elected institutions. For example in the case of the PB of Porto Alegre, one of the most popular and successful cases of DI studied worldwide, the range of participants never overcame the 10% of the participant to the local elections.

priorities), based on the aggregation of individual preferences. The introduction of these authoritative stages increase DI's political legitimacy also because replicates models and procedures already consolidated in the public of democratic societies. Second, because of the idea that adequate procedures can select a representative sample of a large-scale political society, able to replicate on a small scale a representative spectrum of the actual political opinion and debate. The importance of the relation between scales, so central in the classic debate on liberal democracy (ie (Dahl, 2000) is then reflected in the basis of legitimacy of DI, in particular in those where the large territorial scale or where there is a significant quantitative difference between the number of active participant and the rest of the population.

But as we said in the introduction the concern of DI is grounded in the critic to the hegemonic liberal model of democracy and the new wave of DIs started in the last decades is strongly influenced by the anti-hegemonic conceptions of the democracy developed in the second part of XX Century. A first group of theories focused on the possibility to renew the institutions re-signifying the democratic procedures in an inclusive perspective. It is an attempt to re-think the relation between Institutions and Society, seeking a "reconciliation between proceduralism and inclusive participation" (Avritzer and Santos, 2005). In this perspective not only the design of the procedure of a DI is not independent by the social and democratic outcomes that it aims to generate, but also by the substantial ideal of participation and social justice that is evocated with those same design. In a rationalist procedural perspective, the substantial idea of democracy behind DIs shapes their procedure explicitly and implicitly and rely on a political legitimation of condision of this idea of democracy.

Bobbio refers to a "dilemma" of participatory democracy, referring to the inherent tension between procedural design and and substantial objectives of social emancipation (Bobbio, 2006), where the risk to exceed in proceduralism is balanced by an excess of political expectations, where activists and advocates of DIs expect to enable the expression of radical alternatives and face actual complexity of negotiation, resistences and blurred situations. What are then the substantial social and political goods pursued thorough Democratic Innovation? Normative literature on DIs highlights at least two features that are relevant for the purposes of this paper: on one hand DIs can deepen democracy by giving voice to those that are commonly underrepresented in local democratic mechanisms. DIs aim to broaden the local public sphere including marginal groups as well as those counter-publics characterized by a resilient or a confrontational approach toward public policies (Avritzer, 2006; Avritzer and Santos, 2005; Wampler and Avritzer, 2004). On the other hand DIs can enable alternative bottom-up processes of knowledge production and sharing. Dis can be considered as an epistemic mechanisms aimed to produce alternative proposals for policy making based on the contamination between lay and expert knowledge (Fung, 2006; Nunes and Carvalho, 2013). Within this stream, Habermas's complex work on the public sphere, communicative action and the ideal of deliberative democracy (Calhoun, 1992; Habermas, 1989) is a milestone for the development of a theoretical framework of participatory democracy. The conditions for an ideal discourse could be summarized in the principles of equality and symmetry of all the participants, their right to set the agenda of the discussion and to "initiate reflexive arguments about the very rules of the discourse procedure and the way they are applied" (Benhabib, 1996, p. 70). More than one scholars argued that participatory democracy entails the definition of a new inclusive public sphere that could embody these ideal features (Avritzer, 2006). The normative ideal of deliberative democracy could be considered the pillar of the development of participatory democracy practices, where the effort to create the conditions for an ideal discourse is paired with the objective to make a final decision representing the common interest of the participants.

Social Inclusion and deliberative quality are at the center of the concerns of another group of anti-hegemonic democratic theories that, criticizing the deliberative approach, focused on the role of the social movements in the “institutionalization of cultural diversity” and of the social conflict as a practice able to broaden the political sphere and re-signify the democratic spaces. These theories embrace an *agonistic*, social-movement model for democracy (Mouffe, 2000) that denies the possibility to reach a rational consensus in the public sphere and criticize the universalism of deliberative models of participatory democracy, opposing the idea of an agonistic pluralism where the relations of power within human relations are recognized as unavoidable and different publics compete in parallel spaces (counter publics, according the definition of Fraser (Fraser, 1990). This kind of approach also highlights the existence of competitive spaces of participation within and aside official Democratic Innovation, where spaces of participation “by invitation” coexist with spaces created “by Irruption”(Ibarra, 2007). The pursuing of a substantial participatory democracy requires then to conceive social inclusion not only in terms of active engagement of individuals, but also as capacity to include new participatory spaces where publics are not composed by individuals but by organized groups, each one carrying its peculiar deliberative methodology.

“Inclusion” and “Deliberative Quality” of a PB are shaped by both procedural and contextual variables. A significant part of the studies on DIs are indeed oriented to research “How should democratic innovations be designed and how should they relate to existing representative institutions” (“Standing Group on Democratic Innovations,” n.d.) the relation between the design of these processes, their objectives and outcomes and also with the conditions that ground their legitimacy. A large part of the literature on DI focuses on their procedural dimension, trying to grasp the implication of procedural choices on the outcome of those processes, establishing models and patterns recognizable over time and space. For example according to Smith, the procedural dimension of a DI “The procedural design characteristics affect the legitimate reach of democratic innovations, be it in terms of the appropriateness of issues or the stage at which the innovation is embedded within the decision-making process. The manner in which innovations realise very different combinations and weightings also highlights the extent to which it is near meaningless to make generalised statements about the legitimacy of citizen participation per se. Institutional design matters” (Smith, 2009, p. 189). But if the design is a key variable for the understanding of DIs, the localized context is the second determinant one While the definition of DI per se do not imply a direct reference to a specific scale of implementation, it is to highlight how the large majority of contemporary Democratic Innovations take place in small scale, often relating to an urban dimension and involving directly a local authority. Without having the space to report in this paper the complex debate on the relation between participatory democracy and social production of space, it is important to remind how the context of implementation is the second macro-variable that is necessary to take into account once we study DI. It is impossible to analyze and observe the outcome of a PB without taking into account contextual variables as for example the territorial scale of the innovation, the features of the political and administrative systems involved, the autonomy of the local civil society, the level of deliberative skills (including digital skills) and the pre-existent participatory patterns (Sintomer et al., 2014). If we get to the analysis of case-study, it is possible to infer how procedural models and socio-political context are at the same time non-separable features. For example Allegretti, taking the definition from Appadurai, defines Participatory Budgeting as an Ideoscape<sup>4</sup>, signifying a “political model that travels globally but exists through local appropriation, so incrementally transforming the model itself through its concrete localized implementations.”

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<sup>4</sup> From Arjun Appadurai, "Global Ethnoscapes: Notes and Queries for a Transnational Anthropology", in R. Fox; Santa Fe, N.M (eds.), *Recapturing Anthropology: Working in the Present* (School of American Research Press, 1991): 191-210.

(Allegretti, 2011, p. 151). This image is useful to remember the mutually conditioning relation between design of PB and the contextual condition of its implementation.

## THE DESIGN OF PB

In order to proceed with the analysis of the influence of design choices over the legitimacy of PB is important to frame exactly the conception of “design” in Democratic Innovations. Indeed the design of DIs can be intended in (at least) four different manners according to the use done in different disciplines. In each one of these dimension of design the participation of citizens has a different space and function.

*Interaction Design.* Refers to the means of interaction and the exchange of knowledge between participants (including machines) and the object of participation. At object-level, the participatory design refers to the object of participation and to the interface mechanisms through which participants interact in shaping plans and projects: the design of an artefact, proposal, an urban plan, etc. through the active engagement of the participants (users/citizens). (Eva Brandt, 2006). This meaning is used significantly in “technical” disciplines as Urban Planning, Engineering or industrial Design and it is also similar to the meaning attributed in marketing studies aimed to engage potential clients in the design of a product. This conception is popular also under the framework of New Public Management framed under the assumption that a better engagement of users will provide feedbacks and guidelines for an effective service/product delivery also within the public sector (Davies, 2012). In Participatory Budgets it refers mainly to the mechanisms through which ideas and proposals that are generated, filtered and selected throughout the PB Cycle. But in general could be intended also as the mechanisms through which knowledge regarding a possible issue and its solution is generated and shared between participants. Indeed PB can be considered as an epistemic machinery aimed to produce alternative representations of urban space based on the contamination between lay and expert knowledge (Fung, 2006; Nunes and Carvalho, 2013). Through public participation, knowledge regarding the urban space and the uses done by its inhabitants is translated (often with complications) into rationalized and measurable representations of space reflected in formal projects described with the language of the Public Administration. Development of proposals into projects in PB entails the engagement of a broad number of social, political and technical actors in subsequent stages of refinement of proposals that starts from the identification of a territorial need and proceeds to the detailed definition of a intervention plans. An analysis of the strategy used to design the proposals of PB can reveal much of the epistemic mechanism through which street science (Corburn, 2005) could influence definition of alternatives to mainstream proposal of solutions. It is important to highlight how a complex participatory process as PB includes more than one space of interaction, implying the design of different means of interaction and knowledge exchange between participants.<sup>5</sup> In an instrumental perspective the rationale for legitimacy of object design depends by the importance of object of participation and the perceived relevance of the topic of public discussion and finally by the consensus aggregated around the detailed solution developed. From a rationalist perspective it is relevant the extent to

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<sup>5</sup> For example in many PB: the stage of initial gathering of proposals is on geographic base, fostering the emergence of instances on territorial bases. Following this initial step, proposals are debated in thematic groups where experts from the public and private sectors are involved in their analysis and development.

which different kinds of knowledge production mechanisms (top down and bottom-up) are actually included in the definition of the features of the proposals discussed.<sup>6</sup>

*Procedural Design*, the set of procedures that regulates formally the decision making process of a participatory space. In the case of PB it often correspond to the design of the “cycle” defining the exact succession and links between different stages of the decision-making procedure and the specific methodology for decision making in each stage, namely through deliberative methods (in the first stages of development of proposals) paired with aggregative voting methods (in the final selection of the proposals to be financed with public money). The procedure level is typically considered in the normative literature as the main space where are defined the rules of selection of participants and adapted the ideal condition of the discourse, the rules through which participants create and compare their opinions and arguments and decide for the best common good attainable. In the majority of PB the procedural rules for decision making are established by the institutional level and often based on previously existing “models” of implementation. Sintomer et al. defined a few years ago a classification of PBs according to families of procedural models. (Sintomer et al., 2013). Nonetheless there are cases of active engagement of the participants in the definition of the decisional machinery of PB, including in particular guidelines for selection of participants, discussion, deliberation, delegation and eventually voting methods and all the other feature that regulates decision making within the PB. In the majority of cases known (for example the case of self-regulation of PB processes, as in the case of the PB of Sevilla (Presupuestos Participativos Sevilla, 2008) or in Porto Alegre, where the rules have been co-discussed by citizens in different occasions along the long life of local PB (Allegretti, 2003). It is evident the relevance of procedure design for any proceduralist perspective on legitimacy. In a “pure” proceduralist approach the consistency with the language of liberal democracy (and the imitation of procedural elements of representation) as well as the existence of ideal procedural models (ie the PB of Porto Alegre) is central to the legitimacy of the PB. On the other hand we could conceive procedural design as an orchestrator of the formal relations into and between different spaces of interactions. In this second perspective procedural design legitimizes and is legitimated mutually by the consistency with the interaction design that regulates: if procedures overwhelm the interaction design there is always risk of bureaucratization of PB and consequent creation of an elite of participants (experts of procedures) and barriers to inclusive access. At the opposite a PB completely lacking a formal procedural dimension could suffer a lack of legitimacy and be exposed to political turmoil.

*Institutional Design*. If these levels are referred to dimensions of “internal design” of Democratic Innovations, there is a third macro-level that refers to the design of the interaction between PB and elected institutions. It refers to the mechanisms and rules through which the outcomes and the decisions made within the PB do actually influence public policy making and service delivery. Such kind of advanced interaction necessarily depend by the democratic *institutional design* itself and involves “how democratic institutions might be, and ought to be, constructed” (Olsen, 1997) in order to respond to participatory inputs. In PB this level is represented for example by the pot of money that each year the Local Authority decides to dedicate to a participatory decision but also in general the set of norms and responsibilities that regulate the institutional life of Local Authorities. In a number of Italian cities PB was established as a principle in the municipal statute (Sintomer and Allegretti, 2009), but in general the degree of institutionalization is lower. In many municipalities

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<sup>6</sup> Literature on PB highlights indeed that proposals who are able to engage participants since the ideation stage have chances to be realized also when they are not actually funded through the same PB process, finding other additional resources to be realized. This is the case for example of

there is a formal act that commit the elected body to respect the decision made through the PB as an internal regulation or a simple formal deliberation from the municipal council or the executive body. In many other the agreement remain informal, being exposed to a more discretionary power of the elected institutions. In this perspective is pivotal the design of an effective relation between PB procedure and the institutional procedure of budget-making, involving both political and administrative bodies, in a manner that the decision made through the participatory process can be translated in authoritative decisions through the official approval of acts and deliberations by the Local Authority. The Institutional Design of PB entails then the definition of the relation between the process and the socio-institutional context where it takes place. The relevance of this dimension for the legitimacy of PB is evident both in an instrumental and in a rationalist perspective. Indeed the features of the Institutional Design have direct implications on the outcomes potentially attainable by a PB and the definition of its procedural interconnection (how the public sector will implement not only politically but also administratively the decisions of PB) is a key for an effective implementation of those decisions. At the same time the Institutional Design makes explicit a significant part of the power relations insisting over the PB, meaning the forces that influence directly and indirectly the procedural design (the rules of PB) and the object design (the construction of the possible alternatives).

As it is evident the boundaries between these three levels are blurred and especially the mid-level (procedural design) can be stretched or extended according to the point of view of the design analysis. In terms of legitimacy these three dimensions of design are interdependent. Indeed the institutional design of PB shapes the space of participation where the decisions are made according to a procedural design that defines rules to design proposals and projects through the active engagement of citizens. Each dimension of design of PB has a different influence on its legitimacy, it is evident that a rational approach to legitimacy concerned with substantial impacts on democratic empowerment, would consider the overall design of the process and its interdependences. In this perspective it is not possible to separate the mere procedural design from the relation with the object of participation (interaction design) and the interaction with the democratic institutions as well as with other participatory spaces existing in the same context.

## **CHALLENGES OF THE ICT-BASED HYBRIDIZATION OF PB**

In recent years, the emergence of the new technological paradigm based on information and communication technologies profoundly and rapidly transformed the context of implementation of PB affecting as well the design techniques of those processes. It enabled a new generation of hybrid processes where traditional in-person participation is combined with new digitized means of interaction, generally structured around web based collaborative platforms (Peixoto and Sampaio, 2014; Stortone and De Cindio, 2014). The hybridization of the participatory sphere introduces new challenges and opportunities to the legitimacy of PB and its capacity to enforce inclusion in decision making and enable new mechanisms of knowledge production and selection.

To what extent the hybridization of the design of PB affects its mechanisms of legitimacy formerly exposed? This concern is at the center of the activity of the EMPATIA project, a research and innovation project financed by the EU under the program Horizon 2020 and started in Jan 2016. The objective of EMPATIA is to “radically enhance the inclusiveness and impact of PB processes, increasing the participation of citizens by designing, evaluating and making publicly available an advanced ICT platform for participatory budgeting, which could be adaptable to different social and institutional contexts.” (empatia-project.eu). For this purpose the research



component of the project, led by the Centre for Social Studies of the University of Coimbra, started observing and analyzing the different impacts that the new digital paradigms are producing on design strategies of Democratic Innovations and PB in particular.

At the current stage of the research just preliminary conceptualization has been reached. Here they are briefly presented including a description of the main key issues according to the three main categories of design formerly presented.

#### 1) Gamification of the interaction

In the previous paragraph we described the interaction design in DI as the settings of interactions oriented to the object of decision making, centered on the exchange of knowledge between participants. It would be relevant to highlight how in computer science the notion of *Interaction Design* is used to define "the practice of designing interactive digital products, environments, systems, and services."(Cooper et al., 2007). The introduction of Digital Platform and ICTs in PB management putted the interaction with digital devices at the center of the overall interaction design as nowadays in hybrid PB data and information are collected and organized through digital tools. The digital interaction design became a key element in PB engagement capacity and part of the recent expansion of European PB in large scale cities (as for example Paris, Madrid, Milan, Barcelona, all started PB in the last three years) relies on the fact that digital interaction allow to a bigger number of people to participate actively overcoming spatio-temporal barriers.

With the purpose to attract always more participants and to convince them to continue to interact (Mahnic, 2014) expert and practitioners of Democratic Innovations are now experimenting new forms of gamification of the interaction experience. Gamification can be described as "the use of design elements characteristic for games in non-game contexts" (Deterding et al., 2011). We refer then to the increasing use of languages, techniques and of a "grammar of human-machine interaction" shaped and defined in gaming environment and particularly established in the videogame industry. The objectives of Gamification are to use game design elements to engage participants in providing information and feedback regarding topics and issues not related with the game environment and to keep them participating on medium and long term by introducing incentives to repeat and extend participation over time. Examples of gamification are for example the introduction of competitive mechanisms based on leaderboards, badges, points, progressive levels, turns, etc. For example many platforms for PB are starting to introduce profile badges, classification of users according to the intensity of participation, possibility to rank and like other's proposals and other small game elements that already pervade the user experience in the web 2.0. The tendency is still limited for PB but much advanced for other kind of DIs (Lerner, 2014) and already experimented in a number of other public policy sectors (Hamari et al., 2014; McGonigal, 2007). According to advocates of gamification the integration of behavioral incentives based on games can engage people in providing information regarding their opinion and preferences relevant for decision making on important issues. As a consequence "participation becomes more attractive, effective, and transparent. Game design can make democracy fun – and make it work" (Lerner, 2014).

The critics of gamification (Bogost, 2013) focus of the behavioral consequences of a system of incentives disconnected by the actual objectives of engagement. The "operational conditioning" of game-based design would overcome other drivers of the participants, by orienting the interaction to obtain satisfaction from the game results. (Ippolita, 2016). In this way an external epistemic mechanisms based on psychological incentives risks to steer the exchange of knowledge between participants, reducing their autonomy. Moreover, it is not

easy modify the setting of a gamified interface and a participant is introduced in the logic of the game without having room to connect the direct interaction with the higher procedural dimension of design.

## 2) Hybridization of PB Procedures

The definition of “Hybridization” of PB can be used to describe an ongoing transformations of a procedural model that has been based on stable methodological principles for a relatively long time. According to Allegretti (Secchi et al., 2016), many of this transformations took the form of hybridization processes, a term meaning many different things, but always indicating the gradual abandonment of a supposed ‘pure archetype’, which possibly never existed but has often been identified with the first largely renown experience, as that of the Brazilian metropolis of Porto Alegre. These different forms of hybridization can’t be addressed completely to the ICTs, but are the result of a combination of: I) Convergence of different tools and methods into PB: association of diverse range of tools and method originated in other territories or in the digital domain as the experience of e-participation based on collaborative platforms and social networks; II) Cross-fertilization with different discursive models of democracy: Other forms of hybridization at the discourse level as those where participation strongly dialogue with issues related to transparency, open government and the production and release of open data. The rapid expansion and evolution of Information and Communication Technologies (ICTs) and their growing use in connection with PB undoubtedly maximized and accelerated the mentioned scenario. Although ICTs have been often intentionally used with the hope to amplify effects (and especially the general audience) of PB while reducing organization costs, the common denominator of online/offline forms of hybridization has been mainly represented by the general lack of organizational intentionality, while mixing different models, tools, channels and philosophies of participation (Allegretti 2016).

Hybridization provides a number of challenges to legitimacy principle based on pure proceduralism because introduces spurs elements in the tradition of PB (for example mini-publics used to collect proposals as in the case of Cascais (PT)). At the same time new challenges regards also the delicate balance between social inclusion and deliberative quality that is at the core of the substantial legitimacy of PB. Two tensions are important. First, the tension quantity/quality. The integration of ICT in PB management opened a new set of opportunities for the engagement of new larger publics. At the same time it fostered a procedural component based on individual aggregation of preferences emphasizing the session of voting of PB with respect to the deliberative spaces, where the number of participants remains significantly less. For this reason a large part of the participants who takes part to the formal decisional procedure (the vote) do not participate actively in the ideation and development of proposals (Stortone and De Cindio, 2014). As a consequence the deliberative dimension could suffer a loss of legitimacy. Second, the tension between citizens as individuals or on the organized groups that compose the local civil society, already central in the mechanisms of legitimacy of (Ganuza et al., 2014), risks to be increased by the general growth of individual participants and by the same individual perspective at the base of digital means of interactions.

## 3) Emergence of Multi-Channel participation.

The third tendency is a consequence of the hybridization and individualization of procedural design that multiplied the publics of PB and the spaces and channels of participations. In addition, PB often must coexist with other DIs that overlap and compete for publics or objectives. This fragmentation pressures the institutional design. Indeed, the institutional design defines the borders of the “space of Participation” not only by defining the relation between PB and Democratic Institutions, but also between PB and other DI’s coexisting in the same public space. Institutional Design should consider the complex interactions between different

channels within a DI, but also between different DIs themselves, shaping the participatory system of a given context (Spada et al., 2016 use the definition of multi-channel participation). We can refer in this case to the design of multi-channel Democratic Innovations, participatory systems where different channels integrate and collaborate to define and develop a broad range of public policies. An example of multi-channel participatory system is for example the case of the Municipality of Canoas in southern Brasil, where 13 different DIs (ranging from PB to Public hearings, including individual and collective means of participation) are integrated in an unique design (“OIDP Distinction ‘Best Practice in Citizen Participation’ | OIDP,” n.d.) .

Even if there are existing empirical cases of integrated design of multi-channel participatory system, the research on DI’s generally preferred to isolate a specific practice and analyze its design and outcomes independently by the interrelation with other participatory mechanisms taking place in the same context., while a little has been written on methods and strategies to pursue an ideal institutional design of participatory systems.

Spada et al. suggest three possible forms of interaction between channels and spaces of participation: I) Managed Competition: to allow different processes to compete for the same resources. This is the case for example of coexisting PB on the same urban context but referred to different institutional scale (ie the PB at city level and the PB at neighborhood level, as in the case of Lisbon (Dias, Allegretti) ). The risk of this approach is the increase of tension between the competition moves from agonistic to disruptive; II) Isolation: The complete isolation of two channels in a phase of a democratic innovation is another possible form of integration strategy. Isolation might also be particularly useful to dedicate specific spaces to minorities, as in the case of many youth PB, where the young population is engaged to participate in a space completely independent and non-communicant with the adult pb (ie in the case of Boston). On the other hand, isolation of channels appoints a great responsibility on the organizing entity, that is the only player able to regulate the access and communication between compartmented chunks of publics; III) Integration: rational integration mechanisms explicitly designed and implemented to improve the efficiency and internal legitimacy of multichannel democratic innovations. These mechanisms should be inscribed in the institutional design and influence directly the procedures as well as the interaction design. In these three example it is evident as the main concern of the institutional design of multi-channel participation regards the risk of mutual de-legitimation of the different DI’s at play. Overlap between publics, complexification of procedures, increased competition and confusion on the objectives of participation can alter the delicate relation between form and substance that is at the base of their Legitimacy. It could happen because a bad management of complex system enables disruptive and generative competition between DIs, or simply because the participatory spaces that are not designed to include specific publics while are not backed by a significant and consistent institutional design, became empty procedures.

In summary, the Hybridization of PB do affects not only of decision making procedures, but also the other dimension of PB’s design. In this way it strongly modifies the mechanisms of social inclusion and transform epistemic mechanisms at least in three different manners:

- By introducing a gamified interaction design where the game-based engagement strategy on one hand works perfectly for the purpose to increase and keep participation high, but on the other hand risks to subject the epistemic mechanisms to an external system of rewards based on behavioral incentives, reducing in this way the independence and autonomy of participants as well as their capacity to produce new knowledge throughout the process.

- By hybridizing the procedural design, with a tendency to increase the role of aggregative components against the deliberative ones, with a consequent risk of increasing the tension between individuals and groups and to juxtapose quantity and quality of participation in a trade-off relation.
- By increasing the complexity of institutional design toward the management of systems of participatory spaces and democratic innovations. The design and management of this complexity requires a new range of technical and conceptual skills and risks to enforce excessively the position of designs architects.

## CONCLUSIONS

In this paper has been discussed a framework to interpret the possible impact of the hybridization of the design of democratic innovations on their legitimacy, focusing on the case of participatory budgeting.

First I advocate for an approach to the legitimacy of PB based on the relation between the context of implementation and the design of the process. While procedures are a relevant variable of legitimacy they aren't independent by the substantial form of participatory democracy implemented in that context and by the actual power relations between the stakeholders that takes part to the PB.

Second I tried to deconstruct the concept of design in three interdependent layers of interaction design, procedural design and institutional design. Each dimension entails design choices that can affect the legitimacy of the PB process.

Finally I proposed three research hypothesis regarding the impact of the hybridization of PB on its legitimacy, namely I) the hybridization of its procedures with the risks of a conflict between individual and collective participation and the trade-off inclusion/quality of deliberation; II) the risks and opportunities of the gamification of PB interaction design; III) the emergence of complex institutional design regarding systems of multi-channel participation.

As described in the introduction the paper represent a preliminary result of an ongoing project that will deliver research activity on these fields along the next years under the framework of EMPATIA project.

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