ICT Technologies within the Grammar of Participatory Budgeting: Tensions and Challenges of a mainly 'Subordinate Clause' Approach[1]

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1. Introduction

Increasingly, in the latter half of the twentieth century, the consolidating of democracy as a political regime in Western societies (in the main grounded on liberal values and predominantly operating by means of representative democracy procedures) has co-existed with other democratic practices. Of the latter, many propose to reverse processes which have seen the gradual separation of politics and citizens, opening up windows for direct democracy or throwing their weight behind a mix of the latter and the functioning of representative institutions, which – through mutual support – may reinforce both in the face of market predominance, which affects in equal measure most decision-making in public life. With the mechanisms created, there has been interest to adequately respond to the crises in governance which translate into crises in confidence strategies and of the State legitimacy. It is in this context that countless forms of democratic experimentation or 'technologies of participation' (Nunes, 2006) have been developed. These new roles for citizens, associated to projects traditionally carried out from within the State – which during a given historical period became the Welfare State in the North and the Development State in the South – had as one of its consequences an opening up to intervention experiments and citizen organisation 'backed by mobilising practical know-how and the building up of a form of knowledge guided by prudence and by attention to the consequences of the action' (*idem*).

In the meantime, in the area of technology, development and diversification of information and communication technologies (ICTs) led to the expansion of the so-called 'information society', posing a new set of questions and challenges to politics, from the emergence of new identities and interest groups to new forms of political action linked to several different social and political players.

The possibility of coupling a greater depth of democracy to the development of new technologies led (in extreme situations) to the creation of a new paradigm, so-called electronic democracy (or E-democracy)[2], whose 'ontology' might be construed as

[1] Our special thanks to João Arriscado Nunes, Ana Raquel Matos and Daniel Neves, of the Centre for Social Studies, with whom we have shared the pleasure of studying the fascinating case of Belo Horizonte, and whose work has inspired us.

[2] The authors *here* understand electronic democracy as the set of democratic processes which enable citizen participation by means of the use of information and communication technologies and which are linked to fundamental issues about the nature of government and the decision-making processes occurring within the State, as also in the latter's relation to *citizens*. It differs from the concept of electronic government (or E-Government) which regards governments' use of information and communication technology as part of an endeavour to modernise and rationalise the provision of public services for *users*, improving service quality, cutting costs, and providing services which could not be effected under the traditional model (Bannister and Walsh, 2002; Ring and Walden, 2003; Deiber, 2003; Graft

'apparent' to the extent that its designs are influenced by the different concepts of democracy (Addison e Heshmati, 2003; Horrocks and Prachett, 1995).

Debate hinging on the effects and potentialities of this *association* has been tied up to the two great families of expectations. On the one hand, the positive expectations stemming from the potential contained which the linkage between democracy and ICTs evinces for the distribution of power, by means of a broadening of democratic participation in a kind of 'virtual public sphere', as also by the possibility of increasing transparency in government and its control by citizens. On the other hand, growing negative expectations ensuing from the realisation that very often, instead of contributing to the redistribution of power, E-democracy results in an even stronger concentration of power in the hands of few institutions, re-invigorating market predominance or the centrality of the State and its dominant position, to the detriment of the other players in the political system and in society (Hacker and Djik, 2000).

Taking as a departure point the contradictions which emerge from a number of relevant experiences centred on the building of innovative relations between representative democracy and participatory democracy, this article aims above all to analyse certain facets of this ambivalent relation, at a time when to these relations must be added the challenges generated by the broadening of means of communication and by the creation of new, possible spaces for political participation, which go beyond traditional 'formal' processes. More precisely, we will centre our article around an innovative form of building new relations among representative democracy, participatory democracy, and new technologies, which, in the past few years, has become prominent, acquiring its own status within the framework of institutional experimentations: Participatory Budgeting (PB). Taking as a starting point a scenario in which relations between the State and civil society are tendentially characterized by the principle of 'double delegation' (Callon et al., 2001) – which translates into a separation between specialists and lay persons, and between representation and participation –, PB experiences are a clear example of how the existence of strong social mobilisation and the convergence between State-associated political projects and civil society allow for consideration of democratic processes which may articulate representation and participation. And, at the same time, create spaces for citizen empowerment and involvement in domains traditionally viewed as the 'reserve territory of experts'.

Besides the reasons given for the choice of PBs, two further reasons must be added: they are very clearly defined objects as regards the features and presence of technical contents, and have been stamped by a trend towards multiplication and deepening, both numerically and qualitatively, in the world context. Indeed PBs – which are mass participatory practices applying the method of community debate (or co-decision) to budget portions of local public, infra-municipal or supra-local institutions – respond well to these challenges to clarity, pertinence and meaning.

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and Svensson, 2006). What both concepts have in common is the valorisation of information providing processes to community members.

This article is arranged into three parts. The first aims at situating, succinctly, PB experimentations in the arena of debate around the intensifying of democracy and – more specifically – on the association between democracy, technology and participation. The second part centres on the description of an experience of gradual intensifying of relations between PB and the use of ICTs, with the aim of offering readers concrete data of a model of relational grammar which tends to 'subordinate' the use of technology to the building of new arenas for public deliberation, clustered around the physical co-presence of the different players involved. The cases presented feed the concluding section of the article, where (also incorporating a brief reference to other PB mirror cases) a number of possible conclusions are presented. They leave issues open to further debate and challenges for in-progress reformulation on the linkage between the new technologies and broadened experiences of mass participation in building public policies for transforming and managing the territory.

There were three reasons for choosing the case of Belo Horizonte (BH), the Brazilian metropolis whose PB process started in 1993. First of all, the 'relevance' of the example, above all for the evolutive features of the 'institutional design' with which BH experimented Participatory Budget. These permit us to highlight significant changes of an 'adaptive' nature, especially concerning the introduction of new communication technologies in the continual reformatting of the political project. Secondly, the *medietas* of the 'model' put into practice there, which partially reflects the features of the urban and political context (in Brazil, as elsewhere), making it an exemplary case as regards many other trajectories with similar features and results. Thirdly, the capacity of the BH example to offer, 'from the South', pertinent reflections and innovative points of view on institutional re-organisation trends, which are also central in the countries of the North.

We do not wish to impose a 'romanticised' view of South-North relations in the field of the critical theory of modernity, but rather (in this specific case) we considered it pertinent to choose an example taken from what is considered 'the *semi-periphery* of the world of knowledge' (Santos, 2002), from the country where the first PB experiments were put in place. In fact, PBs took shape and root mainly in the South, from the 1990s onwards. Their adaptation to the European context dates back, at most, to 6-7 years ago. On the other hand, it is in the countries of the South that we find contexts of greater social polarisation, and they bear the brunt, in relative terms, of the digital divide. In choosing BH, a further, third reason could be offered: the PB practices with which this city experimented display the configuration of a 'bridge' between the Latin-American context and the arena of European PB (Kleger, Sintomer, Herzberg, 2008), especially in the concern over guaranteeing a continual 'modernisation' of the system (also through cross-fertilisation with overseas examples – according to Santos, 2006) and on a more general scale, through its linkage to municipal planning, funding and the territory[3].

[3] Evidence of this second concern is the move of BH's Participatory Budget to the Department for Planning, as also the directing (as coordinating partner) of international research projects, an example of which is the project 'Articulation Instruments between territorial planning and the Participatory Budget' (2004-2006 in Rede URBAL, nº 9, devoted to Participatory Budgeting). See http://www2.portoalegre.rs.gov.br/urbal9.

2. Democracy, technology and participation

2.1 – What role for Participatory Budgeting?

Univocally placing PB – as instruments for political innovation – in the context of six models of democracy proposed by David Held, is more difficult than it must have been in the early 1990s, when the first experiments took shape in Brazil, within a framework of great tension associated to the democratisation of local government centred around citizen involvement in public decision-making and the idea of the constructive contribution of the 'local' in reformulating national and global strategies. Held's classification includes a construction of ideal-typical models of democracy defined as 'legal, competitive, pluralist, participatory, libertarian and plebiscitory'. The latter three could be contained in what Santos and Avritzer (2002) title 'high intensity democracies'. Especially after the 'return of the caravels' (Allegretti, Herzberg, 2004), that is, the phase of PB 'experiment massification' (Cabannes, 2004) – which led to the extending of the South-American example to more than 1,200 cities of the American sub-continent[4], some African cities, and some hundreds of European municipalities –, the univocal inclusion of PB in a single one of these types becomes more risky, although it is clear, in most cases, that PB tends to fit into 'high intensity' democratic conceptions.

This is due to the fact that PB sets up an 'articulation centre', increasingly key to other participatory experiences, but do not hold any 'monopoly' where possibilities arise for experimenting with innovative processes of citizen participation in public choices. On the contrary, PBs tend more and more to become 'contaminated' and to fuse with other experiments, 'diluting' the features with which they started out, adopting different, consolidated techniques and thus affirming themselves in the collective imagination as 'meta-models', adaptable to different conceptions of democracy which shape numerous practices (Bobbio, 2006; Allegretti and Secchi, 2007; Chavez, 2007). The variety of reference political 'horizons', as also the overall and specific objectives which sustain many PB practices, is particularly clear in Europe, as shown by Sintomer, Herzberg and Roecke (2007), evincing, at motivational level, new 'ideal-typical models' for PB adoption in the Old Continent. These relate to neo-corporatist forms (of which the forging of public/private partnerships is also an example) or pursue objectives for building 'participatory democracy', 'participatory modernisation of the public administration apparatus', or simply 'proximity democracy' or 'community development'. Besides, it is impossible nowadays not to highlight the 'entropic evolutivity' and sometimes 'schizophrenia' of PB (Allegretti, 2007), evinced in pan-European comparative research, outlining the fluctuating of concrete practices between different reference political models for each type of experimentation[5].

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[4] The manual *72 Frequently Asked Questions about Participatory Budgeting,* 2007, coordinated by UNHABITAT and authored by Y. Cabannes, takes into account a number of national laws which made PB a 'compulsory' urban management methodology for the municipalities of some countries (Peru, 2003, and the Dominican Republic, June 2007) and highly recommended by national governments, such as that of Venezuela.

[5] The text by Sintomer *et alii* also presents 'six procedures of European PBs', mapping out (through a hexagonal graph) 'participation typologies' which range from 'participation of organised interest', to Porto Alegre in Europe', through 'Public/private negotiation tables', 'proximity participation' and mere 'consultations on public finances'.

Adding a new variable (such as the relation between participatory processes and ICTs) to this variation in the users and 'ordering' of PB within the different conceptions of 'grand democracy' (to employ a much-used definition in Scandinavian Europe), might – theoretically – complicate modelisation of these processes. However, experience tells us that in many cases ICT use does not determine new PB 'hybrid configurations'. Rather, it tends to lend new vigour to the main interpretational line of each experiment. From this point of view, it is worth referring to Hacker and Djik's study (2006). For these authors, the main democratic goals to be reached with ICT support relate to the six democracy models put forward by David Held, including the objectives and strategies for their use. For us, the relation between Held's models and ICT use would indicate that 'legal democracy' allows for ICT use as a means of supplying more and better information for governments, administrators, representatives, and citizens, bearing in mind efficacy and efficiency, as well as greater transparency and responsitivity on the part of the political system. From this point of view, the main strategies for ICT use are campaigns, civic services and information centres, public information systems, systems for government recording and surveys addressed to citizens. ICT use in favour of 'competitive democracy' would aim to strengthen governments', politicians' and administrators' position (as in general election campaigns) and to this end would mainly make use of the mass media (TV and radio) and new media techniques, such as direct mailing, marketing, or visual manipulation.

When ICTs are used within 'pluralist democracy' models, the main goal appears to be that of favouring applications which strengthen information and communication at the core of civil society organisations, and between the latter, such as registration systems, computer surveys, but mostly conversation systems: emails, chat lists, teleconferences, support systems for decision-making regarding complex problems, among others. PB experiences appear to be well represented from the point of view of ICT use in models of 'participatory democracy' put forward by Hacker and Djik. Here, ICTs should be used mainly to educate and 'activate' every citizen, through collective opinion shaping processes in debates and educational settings. These include computerised information campaigns, mass public information systems, provision for access by users, electronic debates to mould opinions, active learning and participation – lists of debate on public computer networks, teleconferences and the building of Telecentres where people can meet in person and collectively use technologies for a deeper dialogue and easier communication with institutions.

The 'libertarian' conception of democracy would emphasise virtual communities and horizontal communication on collectively created networks, and, to this end, citizens would have to be kept up-to-date by advanced, free information systems, which would afford them conditions for voicing opinions and voting. From this point of view, relevant technologies would be those enabling online conversations, discussion groups, chat sites, interpersonal emails, online ballot boxes, online voting. To conclude, the 'plebiscitory model' of democracy would see ICTs perceived as communication channels which magnify citizens' voices, demolishing the barriers to direct democracy in complex societies. Preference should be given to ICT use permitting opinions and votes to be

recorded, such as online ballot boxes, online referenda and telephone, Internet, or cable TV voting.

In the proposed reading, it seems clear that a gradual configuration is taking place of a type of 'ladder' of increased intensity in the 'democratising' use of ICTs on the part of different democratic horizons (here too described according to an 'increasing intensity'). This configures an object in symmetry with the 'ladder of participation' designed by Sherry Arnstein (1969), where some 'steps' (such as those relating to the centrality of information) are configured less as isolated situations (or models as such) and more as pre-conditions integrating each of the other levels of participatory content.

It seems consistent that – beyond identifying objectives and strategies for ICT use in its relation to models of democracy – Hacker and Djik (2006) should also put forward two sets of concepts containing a dimension for the evaluation of the relation between 'power' and social players, which appear to be of use for the political analysis of technology use. A first set deals with patterns of 'information traffic', attempting to show who holds power over the information. Thus, 'allocution' is used where there is a central player providing information to several units; 'consultation', where there is a central player opening up information systems to public consultation; 'recording', where there is a central player gathering information; or, lastly, 'conversation' where there is an exchange of information among different types of player. The second set of concepts regards the level of interactivity[6] in the communication. Hacker and Djik write of the importance of individualising the 'spatial dimension' (twofold communication, action and reaction), the 'temporal dimension' (synchronic communication), the 'action dimension' (degree of control exerted by the players involved over the communication and the possibility of exchanging roles according to the time and content of the communication), and the 'mental dimension', which regards the intelligence of the contexts and shared understanding. The latter appears to be the only level which symmetrically combines face-to-face interaction using ICTs.

Until now, most PB has tended to favour spaces for direct meeting among inhabitants and between these and the (political and technical) representatives of the institutional sphere. This is not only due to an overall setting which has viewed PB as a space for rebuilding social ties and interrupted or polluted relations between administrators and citizens, as well as the results of real experiences. These have proved to be positive in rebuilding a social pedagogy (Schmidt, 2000) and a negotiated solidarity (Abers, 2000), also in circumstances where 'concrete results' have not differed widely from that which could have been provided by the traditional exercise of power delegated by competent administrators (Ravazzi, 2007).

In this overall picture, the 'grammar' of relations between PB and ICTs has favoured a 'subordinate' position for technologies, in the face of possibilities for wasting energy and

[6] Interactivity is the degree to which players have control over and are able to exchange notes in mutual discourse (Williams, Rice and Rogers, 1988, in Racker and Djik, 2006). The lesser degree lies in finding the information and the greater degree is an exchange of communication within a context which can be managed by both parties, as in face-to-face conversations.

resources (human and economic) in activating 'hot' methods of interaction among territorial players. Viewed as a 'cold medium' for interaction (on a similar level to referenda or questionnaire-driven or telephone surveys), ICTs have been 'relegated' to the fringe of participatory processes, with proposals being submitted by real-time meetings to 'after-the-event control'[7]. This has also occurred in situations where ICT use was explicitly evaluated (Borghi, 2005) as a 'social inclusion' factor regarding persons or groups (commuters, families residing far from the centre where meetings are held, the sick or mobility-challenged) whose timetables or rhythms do not dovetail with public offline meetings, as in the case of Modena, Italy. There – in 2006 – a pilot project integrated in the municipal system of electronic information, *Unox1*, provided online streaming for some meetings, and some temporal 'pauses' to allow for interventions and suggestions which could later be presented for presence-driven debate taking place in the PB 'main branch'.

In this reading, evaluation of the new 'spaces' under construction through the cycle of debates made possible by the existence of PB has been much more important than a reflection on the 'time' of this interaction, although this has meant broadening participation to the whole year (from January to December), or that depth has been sacrificed to evaluation techniques on the feasibility of proposals put forward by inhabitants in every situation where the PB cycle has been limited to the second half of the year. Thus, ICTs have hardly ever been valorised as regards the 'instantaneity' component itself (capable of modifying the volume of the 'time' factor in the process), but have been submitted to deadlines of real-time debate taking place in meetings, in studios or in local and thematic working groups which characterise most of the PB 'organisational architecture'.

Only rarely was greater attention given to the valorisation of ICT potentialities, such as in Jun, a municipality of little more than 2,350 inhabitants, in the Spanish province of Granada. There – since 2001 – all the families were made 'literate' so as to use computer means and were assisted in buying family computers or in using public spaces with Internet access. This pre-condition has made voting possible in the Annual Budget held in the Municipal Assembly plenary meeting almost simultaneously with inhabitants' web-based voting.[8] In this case, the temporal 'gap' between the two voting situations is politically motivated, since it aims to secure for those elected the final vote on public documents (although already voted – on a consultive basis – by the inhabitants). This represents an acknowledgment of the prominence of representative democracy.

Pilot schemes such as the above are directed at linking the real-time components of PB processes and ICT use through a syntax based on 'coordinate sentences'. However, it would appear difficult to reproduce these on a larger scale, for practical and economic reasons. It is, however, true that – although there are as yet no comparative analyses on

[7] In countless examples, suggestions put forward by inhabitants by computerised means (email or web pages with interactive files) are put to the evaluation of public meetings, as is the case in Venice Lido, Pieve Emmanuele or Grottomare in Italy.
[8] See http://www.ayuntamientojun.org

PB use of ICTs[9] – the impression is felt, based on fact, that the majority of experiences did not aim to build virtual spaces for attributing to ICTs the function which Hacker and Djik (2006) might define as 'conversation' among players, based on the acknowledgment of their capacity to stimulate the 'mental dimension' of interchange and shared understanding.

Where Vignola, Italy, is concerned, implementing the new technologies in the PB process was indeed made along different lines, not favouring articulation between real-time components and online voting. In this case, the same importance was accorded to real-time voting and online voting. This meant that the winning project was approved by 60% of electronic votes, which played as a disincentive for physical participation in meetings, leading the 2005 PB experiment to death.

2.1. 'Democratic Experimentation' and Local Government

Consulting comparative literature on PB, we see that there are four main dimensions contributing decisively to the success of 'experimentations': political will, the self-organizing capacity of the social fabrics, financial autonomy of the institutions which develop these experiments, and the institutional design of the process (Avritzer and Navarro, 2002; Grazia and Ribeiro, 2003; Allegretti, 2003, Cabannes, 2004). The latter dimensions represent factors which justify inserting PB in the context of technical processes, either because they enable social interaction on 'high technical content' themes, or because the interaction in question is enabled through complex, creative and innovative 'social engineering' procedures. These must take into account the difficulties, firstly, of stimulating public participation on an apparently complex theme and, secondly, of relating social debate to the operating of administrative apparatuses, very often displaying inertia.

With regard to the first factor, the greatest innovation of PB could even be condensed to its capacity for 'socialising' the debate on public costs (and sometimes even on revenues), without trivialising it, but bringing to the fore the 'narrative' and more communicative dimension of the theme broached (Allegretti, 2003), and at the same time, demystifying the more technical components of the contents through a repoliticising of the debate and a 'translation' of traditionally inaccessible and 'elitist' languages. It is the 'architecture' of the process itself which must guarantee 'accessibility' of the themes under debate through linkage of the specific spaces given over to ascertaining the technical aspects of the proposals debated and the capacity of the process to shape awareness and 'enable' greater depth of language and knowledge to benefit participants 'in the course of action'. This indispensable engineering explains the caution with which many institutions organizing PB process decisions approach the use of other elements which might be perceived by inhabitants as a medium for a 're-technicisation' of budget decisions and for a 'progressive deflecting' of inhabitants from decision-making processes, giving the impression that the political will for a true 'opening up' of the

[9] Recently, the project 'ePOLIS' (Co-operative Research on ICT and Participatory Budgeting in Local Governance) was created by the TNI Institute of Amsterdam, within the VII Framework.

public apparatus to incisive contribution on the part of the territory's inhabitants may amount to little more than false propaganda.

Usually, this type of fear affects the use of 'calculation matrices' which contain socio-technical factors for vote-counting in regard to those participating in meetings[10]. Similar considerations apply to ICT use in PB, in roles placing them beyond a merely 'informational' use or process monitoring (Allegretti, 2007). Presumably, it is the image of ICTs as a strong technological component and containing potentially 'elitist' elements in terms of access that determines a 'syntax of ICT use' centred on its 'subordination' to the real-time parts of PB cycles. What is worth highlighting is that this 'image' might represent the 'projection' of the fear of generations as yet not totally at ease with technology. This has a negative effect on dialogue with other groups (such as young people) for whom the language of the new technologies is user-friendly and even stimulates their engaging with public debate.

These reflections show the complexity of integrating PBs – as technological instruments – in debates centred around democracy and technology, just as it is not possible to place PBs univocally – as instruments for political innovation – in the sphere of the six families of democracy summed up by Held (2006).

3. The Case of Belo Horizonte, Brazil

3.1. Which model of Participatory Budgeting?

PB took shape in Brazil in a context of the re-democratising of the country (after two decades of military dictatorship), in which social forces endeavoured not only to restore the democratic regime, but also to re-define the very meaning of democracy. This context worked in favour of effective de-centralisation of political power, which strengthened municipal governments and enabled some of them – those of a more progressive and innovative nature – to begin experimenting in the area of new political participatory institutions, until then in government hands.

Within these democratic experimentations, PB, a process of public deliberation on public municipal budgeting and policies, stood out given its capacity for democratising a central dimension of public decision-making until then centralised in the hands of techno-bureaucracies (the public budget), for combining direct and representative democracy, and for placing citizen-individuals at its centre, going beyond visions of social dialogue centred merely on strong pre-organised stakeholders.

[10] In Europe, these matrices (very widespread in Brazil) are used only in some cases in Spain and England. Their central tenet is that the needs of those present at PB debates are not the only ones in the territory. Thus, 'pondering' the weight attributed to the votes of those present with other objective factors (number of inhabitants in an area, beneficiaries of a project, degree of need of the action proposed, capacity of the proposal to create 'positive discrimination' for more deprived social categories, etc.) may help to bear in mind – while the process is ongoing, and not just after the event – the needs of players absent from same, as also territorial sustainability features.

In some cities which took the process on the way to radical horizons (as occurred in Porto Alegre, the metropolis whose success made PB be adopted by several Brazilian municipalities, at times in a mimetic fashion), the origin of the instrument put down roots in the pressures of organised civil society. The case of Belo Horizonte does not belong to that family. Indeed, the capital city of Minas Gerais (2.4 million inhabitants in a metropolitan area with 5 million) saw the first PB edition applied in 1993, on the exclusive initiative of the government, when the Workers' Party came to power in the municipal government and decided to follow the national party political mainstream.

Commonly referred to as 'OP/BH' (i.e. PB/BH), the process in Belo Horizonte was characterised by a great capacity for evolution. Initially designed to adhere to a strategy whereby the entire administration would be involved in implementing it (through the creation of a communication plan and the pre-definition of the values destined for public deliberation), as time went on, PB/BH saw its design altered in almost all of its editions, stamped by two major phenomena. The first – consonant with what had occurred in other cities – was the conversion, in 1999, to biennial cycles (as opposed to annual, as had been the case). The second might be defined as a gradual 'political marginalisation' which led the PB to be moved from the Mayor's Office (which secured its transversal control over all investment areas) to the Planning Secretariat, through the Public Participation Coordinating body, as is the case in many countries. Another reading of this move to the Planning Secretariat is that of the institutionalisation of the process, which coincides with the creation of a specific institutional structure to put it in place, removing the need for the Mayor's role as activator of the process. Paradoxically, these changes were the result of an intention – just, but almost obsessive – to guarantee that endeavours co-decided with the inhabitants are carried out in a manner that prevents a decline in process credibility which affected other examples negatively. This same intention gave rise to three main transformations in the PB/BH format, with the aim of increasing progressive control by the citizens on the life of public works:

1) vinculation to the Office for Planning, organised as a space which is able to secure the best concrete effects and linkage to long-term investment;
2) the creation of Citizens' Committees for Inspecting and Follow-up (COMFORÇAS) for the implementing of choices co-decided with the inhabitants, who also feature as agents for the control of building sites;
3) the creation in 2004 of a Participation School[11] aiming to create 'social multipliers' to broaden the PB social catchment area, offering training opportunities for community leadership and for other persons involved in the city's participatory network. By means of the systematising of the different initiatives which were being undertaken in this regard, the School has already, in a few years, helped expand the organisation of civil society (Avritzer, 2007).

As demonstrated by Avritzer (2007), in the past few years Belo Horizonte's PB has had an average investment, decided with the inhabitants, which does not exceed 3.93% of the total budget, having had a maximum investment of 5.35% of available resources. Compared to cities such as Porto Alegre, which reached levels of investment ranging

[11] The school was set up close to civil society institutions such as the FASE NGO and the Pinheiro Foundation.

from 20 to 30% in the mid 1990s, it is easy to understand how PB/BH had a 'residual' range (instead of a 'pivotal' one), being shaped as an effective 'sector policy' in the area of social policies and recovery of auto-produced foundations, centring around 22.29% of the capital city's population.[12] Although the variation in *per capita* investment, distributed by means of PB in the different BH districts, has hardly ever exceeded R$90[13], economic surveys show that PB/BH has succeeded in providing a good equity level and sweeping distribution of benefits (Pires, 2003), especially in the most deprived areas of the city.

The search for this redistributive justice led to a number of innovations in the institutional design of the PB/BH in the 9 infra-municipal districts.[14] Of these, the creation of 'priority caravans' deserves special mention. These consist of collective inspections so that citizens' delegates can get a 'feel' for the sites of the inhabitants' choice of demands, believing that 'physically crossing the territory' ('*walking along it, getting your hands and feet dirty*', as the urbanist Patrick Geddes used to say[15]) helps build disseminated civic awareness and urban solidarity.

Given that, from its first edition, the PB/BH aimed to re-direct public spending towards areas regarded as being in greater need of public investment (that is, it endeavoured to associate participation with re-distribution of public goods and services), decisions as to the object of public resources linked to the process have been sustained by harmonising inhabitants' votes with other decision-making criteria. These are territorially based and consider the lack and/or deterioration of social equipment, the populational mass, and the Urban Quality of Life Index – UQLI[16] – adopted from 2001 on. Thus, more densely populated areas with a lower UQLI are the recipients of greater resources. In addition, decisions now made regarding poor or informal neighbourhoods have been included in a Global Development Plan drawn up for these areas, and participation rules set out a quorum (0.5% of each district's population) for public meetings, with a view to securing approval of priorities

The large number of demands in the area of affordable housing gave rise in 1996 to a specific PB – the Housing PB – which makes decisions on investment in this field, in a separate process coordinated by the Belo Horizonte Urbanisation Company (URBEL). 1999 saw the creation of 'City PB', aimed at defining budget priorities for sector policies, articulating planning decisions with those made in other participation arenas, such as the

[12] Whereas in 1950 there were about 25,000 persons living in 18 shanty towns, in 2006 the number of sub-housing had become 209, with 499,000 dwellers. Today the shanty towns occupy 16.14 square kilometres, a heavily populated area which represents little more than 5% of the total area of the city (data supplied by Horizontes Institute, August 2006).
[13] About 33 Euros, on 10 August 2007. In Porto Alegre the average variation up to 2001 was of 100 to 1,650 R$, according to Pires (2003).
[14] The city of BH is divided into nine Administrative Regions (Barreiro, Centro-Sul, Leste, Nordeste, Noroeste, Norte, Oeste, Pampulha, Venda Nova). Nowadays, the PB holds a first plenary meeting in each district, to present and discuss the process, a second 'sitting' (physically based in sub-districts) to pre-select priorities and for selection of the people's delegates, a regional caravan of priorities to inspect the territory, the Regional Forums for Budgeting Priorities (for approval of the Regional Task Plan, and election of representatives on the Inspection Committees – COMFORÇAs).
[15] See Boardman (1944).
[16] The Urban Quality of Life Index, which combines factors linked to the number of inhabitants and income levels, comprises 54 indicators relating to supply areas, culture, education, sport, housing, urban infra-structures, environment, health, urban services, and urban security.

Public Policy Councils and the Sector Conferences (health, social security, children and adolescents, etc.). The so-called 'District OP' (the original PB design, based on priorities elected by the inhabitants of the city's districts and sub-districts) remained active for the definition of local investment.

These transformations during the course of the years evince a new, complex institutional design which could not have been sustained had decisions regarding change (albeit proposed by the Municipality) not been made collectively with the participation of the inhabitants, as happened elsewhere.

3.2. Creating the 'Digital PB: you can be proud of it. Belo Horizonte is the first city in the world to have one'[17].

Since its original design, the PB/BH combined direct citizen participation with that of representatives of associations, especially Neighbourhood Committees, in their deliberation processes.[18] In this respect, the Internet was used for many years essentially as a means of 'information' for the middle to high income social strata, with full awareness that the remaining inhabitants required investment in other forms of communication such as leaflets, sound cars, bill boards, advertising on community radio stations and other media. The contents of the information conveyed by the Internet was hardly ever of great consequence, regardless of the existence of a cycle of real-time meetings where communication is orally transmitted. Again, the 'works maps' funded under the PB/BH, accessible on the Internet, did not allow for the interactivity and 'mass control' regarding each of the building sites, a role attributed to the activity of COMFORÇAS. Unlike other cities (such as Porto Alegre[19]), the PB/BH web page does not display interactive databases which can be consulted by means of passwords, just as there is no detailed 'spatialisation' of mass demands projected on city maps in the Geoblog format, not even with the reduced degrees of 'interactivity', as is the case of the PB in the Rome XI Municipality[20].

In 2006, there was a greater change in BH, when the so-called 'Digital PB' was associated to the process of public deliberation on the City Budget, offering the possibility of choosing 'some' investments via the Internet. The building projects put forward for a vote within the framework of this process derive from a selection effected jointly by City Hall and COMFORÇA. The building projects selected are put to the vote

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[17] The title of one of the information disseminating leaflets sent to each household in BH.

[18] The presence of inhabitants from each neighbourhood in the PB determines the number of delegates to each Regional Assembly, which chooses one delegate to represent the community associations sited in the region. The remaining delegates are elected in accordance with the number of persons present at the meetings: up to 200 persons elects one delegate per 10 (i.e., up to 20 delegates), between 201 and 400 persons elects one delegate per 15 persons present, and in excess of 400 persons elects one delegate per 20 persons present. All the delegates have substitutes. For more details on PB/BH, see http://portal1.pbh.gov.br/pbh/index.html?id_conteudo=12255&id_nivel1=-1

[19] See www.observapoa.com.br/

[20] See www.municipiopartecipato.it. Here in 2006 the 'eDem 1.0' Project, funded by the then Italian Ministry for Technology and Innovation, made available a website where – drawing on GoogleEarth maps – territorial areas, citizens' concerns, and demands are viewed. The site represents a *GeoBlog* model requiring an 'external moderator', since users cannot print their indications and messages directly onto the maps.

over an established time frame and the nine receiving the largest number of votes are selected (of the 4 initial proposals, one is selected per district).

To implement the process, the City Hall of BH set up approximately 170 polling stations in the city, and information was provided for those who would be present at those same stations to lend assistance to voters who came along. These polling stations were strategically placed in lower-income areas. The adoption of a spatial criterion for the distribution of equipment did not, however, take into account the fact that within each zone, including those considered higher-income areas, there are unequal conditions of access to IT equipment. This initial survey was not carried out by City Hall. Information regarding the siting of all the voting stations was sent out by mail to all the households in the city. These stations, besides participating in the voting process, provided access to multiple types of information about PB and enabled virtual visits to the building sites, participation in debate forums, among other activities.

Additional resources were allocated to putting in place the Digital PB, increasing total investment in the PB process by about 20%. In total, the district PB became responsible for deciding on ¾ of the total available amount, the digital PB being allotted approximately ¼ of this amount; unlike the case of the real-time process, this is divided equally among the City's Administrative Regions.

The way this innovation was put in place shows us that the process was introduced with prudence, almost taking on the shape of a pilot intervention. The main reasons given for choosing this strategy were:

1) the need not to alter excessively the PB image as an instrument that allows 'priorities' to be 'reversed', working in favour of the more fragile social strata (who very often coincide with those who do not have independent access to most ICTs);
2) the need to broaden the 'appeal' of real-time PB. In fact, although weight was lent to virtual technologies, 'limitations' were placed, in order to persuade internauts to take part in meetings so as to retain the onus of the proposals themselves within public debate.

Opening up a space such as the digital PB naturally led to a clear definition of participation rules, this having been opened up to all the city's voters, i.e. every citizen above the age of 16, the voters in BH. Each voter may only vote once, to this end using their voter's number. Of a total of building works put to the vote – totalling 36, which corresponds to 4 per each of the 9 districts –, each voter was able to choose one per district.

As for the overall reason for introducing the 'Digital PB', the Municipality explained the need to reverse a number of 'reductionist' trends in the participation of the district PB inhabitants.[21] Since the Digital PB functioned as a complement of real-time PB,

[21] In the thirteen years' existence of the district PB – carried out in annual cycles between 1993 and 1998 and in biennial cycles from 1999 to 2006 – mass participation displayed great fluctuation. Up to 1996, participation levels

endeavours were directed at broadening existing levels of participation and at strengthening PB interaction with urban and social intervention, of great importance for the regional forms. In the first edition of the digital PB, 172,266 voters took part, a total of 503,266 votes having been counted (since each voter could cast up to 9 votes, one in each district). In that same year, approximately 38,302 persons participated in the real-time PB. These two types of participation – in meetings, in real-time PB, and via the Internet, in the case of the digital PB – are counted autonomously.

The objective of extending participation in the PB process has become apparent not only in larger numbers, but also in the endeavour to reach other social sectors in order to include new players in the process. Thus, there was an attempt to capture the attention of new social strata and new social groups, especially the young, up to then visibly absent from the process. In fact, unlike other PB experiences, BH did not create mechanisms specifically directed at attracting the participation of younger people (the so called "*Children or Teenagers' PBs*"; so introducing new technologies into the process, promoted by the Digital PB, aimed to a very large extent to reach this populational stratum.

On the other hand, the digital PB was conceived to acquaint the population with the city as a whole. Participation in real-time PB enables each citizen to gain an in-depth insight into the district where he/she lives, for it is at this level that citizens' participation is promoted. Giving people the opportunity to choose a building plan per city district, City Hall endeavoured to create a mechanism whereby a broader view of the city could be gleaned by those who participated in the digital PB.

Lastly, and despite the fact that the amount available for the digital PB was significantly lower than that for real-time, the only building work chosen for voting was that of a more structuring nature and which embodied regional interest. The focus of this choice was to identify building work requiring a higher investment sum and which would never be approved at the real-time PB, given its high costs. Voters were thus urged to choose building work which would serve the totality of their district and not just their neighbourhood.

In this first edition, the 9 building projects receiving the most votes (one per district) were: two refurbishment projects of social equipment, two road improvement projects, two ecological parks, restoring one medical centre, restoring a leisure area and one sports facility. Although it is not possible to establish a comparison with the typology of building works approved in real-time PB, in the latter's thirteen years' existence, 67% of building works approved corresponds to projects for infrastructure building and urbanisation (802 out of 1,184). If we add to these projects the building work carried out in the areas of health and education, we find that this percentage rises to 88%. Building

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underwent a progressive increase; this dropped off significantly in the following two years. The introduction of biennial cycles led to a further increase, which became consolidated in the first two cycles, but this trend was again reversed in the 2003/2004 cycle, with a reduction of 13,000 participants in regard to the 2001/2002 cycle. It was in this context that the digital PB was introduced. In the 2005/2006 real-time cycle, there was another surge, increasing participation numbers in the district PB by about 8,000.

works covering social security, culture, sports, and the environment account for a mere 12% of the sum total of building work approved.

3.3. The effects derived from adopting digital PB

Although, undoubtedly, in the first decade of PB/BH the stress was laid on the issue of 'efficacy' of public policies (including its distributive justice feature), as discussed earlier, the introduction of the digital PB marks a transition towards seeking greater 'efficiency', i.e. towards greater amplitude of the process, with costs increasing only slightly.[22] It also marks a move to a greater broadening of participation in the PB process, by means of 'seducing' new participants, through use of the new technologies.

Naturally, we do not wish to arrive at major conclusions here regarding a process which has been under way for only one year. Despite this, some results are already visible, which we feel are worth recording.

As mentioned earlier, this initial experiment of articulating real-time PB with digital PB had as one of its main objectives that of expanding participation in the process. In merely absolute terms, this expansion is undeniable, since approximately 38,000 persons took part in the real-time PB (representing an increase of about 25% with regard to the previous edition) and approximately 172,000 persons in the digital PB. The nature of this participation cannot, however, be directly compared, and we will return to this below. Although it is true that there was a significant increase in the district PB, only time will tell whether this increase will become consolidated. Investment in divulging the digital PB – with marketing campaigns and sustained during the course of time – will have had a multiplying effect for the district PB, which manages a much broader volume of invesments put to deliberation. The available data do not yet make it possible to determine how many persons were drawn to the district PB as a result of the digital PB.

One of the aims of the digital PB was to promote more structured knowledge within the city, allowing participants to choose one building project for each of the 9 districts. This intention failed, at least partially. The approximately 172,000 participants cast about 500,000 votes, which means that the average choice per participant was less than three (out of a maximum 9). Even creating possibilities for expanding decisions, the proximity factor appears to have prevailed when the time came to choose.

The decision to implement the digital PB gave rise to some public criticism, especially as regards info-exclusion.[23] In this regard, mention should be made of the fact that the City Hall stepped in, the end result being the articulation of the digital PB with a programme of digital inclusion. As already stated, many polling stations were set up all over the city and persons were trained to man these stations throughout, in order to assist the voting process. Integrating the digital PB in a wider programme of social inclusion guaranteed

[22] Cf. speech by Júlio Pires, Secretary of Planning, Budget and Information of Belo Horizonte City Hall at the seminar "*Participatory Budgeting: Building Participatory Democracy and/or Improving Municipal Finance*", 21 June 2006, Networking Event of the UN-Habitat "*Third Urban Forum – WUF3*", Vancouver, Canada.

[23] Field work in BH made it possible to talk to several persons living in deprived areas. It was apparent that the initial decision to proceed with the digital PB process had not been well received in these communities.

the permanent placing of IT equipment in the more deprived areas of the city, for uses other than voting. This feature is particularly relevant. Research recently carried out in Europe (Graft and Svensson, 2006) on governments who innovated and adopted electronic tools to support democracy, shows that motivations are much more pragmatic than substantive or normative. Most municipal governments which adopted electronic processes for democracy did so because they already had the technological means (hardware, software, specialised staff and specific departments) enabling them to promote democratic processes through ICTs, or they can attract new ones specifically provided by other levels of the State. In the case of BH, the proposal for the digital PB went far beyond this pragmatic orientation. A specific intervention took place with a view to securing the resources deemed appropriate to enable the experimentation in tandem with a proposal to enlarge democratic participation.

On the other hand, the integration of the digital PB in the PB/BH process was not conducted so as to form hybrid processes which might combine face to face interaction and differentiated technological instruments. In actual fact, these were created as complementary processes. Under the digital PB, the choice of priorities is effected individually, without interaction, and without the possibility of having this interaction alter individual preferences, much less the possibility of building up collective preferences during the course of the process. Thus, decisions become confused with the vote inherent in any electoral process. The latter is, indeed, another feature which it is important to problematise. Civil society players who were better organised were able to spend resources on campaigns designed to call for voting in favour of their choices. Although, on the one hand, the process thus designed made a strong contribution to mobilise organised civil society, on the other, it created very unequal action-taking capacities, as the outcome of available resources.

Lastly, reference should also be made to the fact that the digital PB – directed more at enlarging participation and drawing in new sectors of the population – did not achieve one of the main features of many PB processes – priority inversion. Equitable resource distribution among all the districts weakens the redistributive capacity of the PB process. It must, however, be mentioned that this feature is fully present in the district PB (namely in applying the UQLI), with BH being one of the examples where criteria envisaging priority inversion have more weight. Since the digital PB did not decrease the amounts for PB investment, on the contrary, increasing it, the greatest investment tranche continues to be directed at reducing social inequality.

4. Some Reflections

This text set out to reflect in detail on innovative relations between representative democracy and participatory democracy against a backdrop where these complex relations must be considered with the added factors of the challenges presented by the introduction of new technologies, aimed at expanding the formal spaces of political intervention. The PB of BH, as an exemplary case of these relations, served as a script for this debate.

As can be inferred, resorting to new technologies in participatory processes and policy decision-making takes on a very different form; it can be taken as a limited inclusion – serving as information instruments or, at most, as assisting inspection or debate – or, in certain cases, as a more advanced use of the potentialities deriving from these, assisting the policy decision-making processes themselves. The cases we have presented throughout represent these different configurations, the BH example being closer to the last configuration presented, albeit with some restrictions.

The case of BH emerges as a clear example of the differences between a 'subordinate' use or a 'coordinate' use of ICTs in democratic processes. The former is a result of applying hybrid or complementary processes which unite forms of face to face interaction with different technological instruments/means. An enlarged conception of e-democracy makes it possible to think that it is not simply governments which can be its agents, but also individuals and organisations within society, who now establish new forms of information and communication relations. If, on the one hand, governments can use ICTs as a means of increasing participation and legitimising decisions, society can use them as a means of accessing the information relevant for its political organisation and to mobilise around issues it considers pertinent. On the other hand, government use of technologies can strengthen the technocracy specialising in information systems (or *infocracy*), which can attain importance and independence in regard to the government itself (Hacker and Djik, 2000).

As shown by Sheila Jasanoff (2003), the affirming in political literature that the quality of solutions directed at solving problems depends on the adequacy of its initial framing has become an undeniable truth. In our reading, if an issue is too narrowly, or too vaguely, or simply wrongly framed, the solution chosen will suffer from the same ills (*idem*). What the example of the district PB of BH shows us is that the 'framing' of the issue is quite as important as the process itself. If we are faced with iterative processes, whoever takes part in them will end by being able to redefine the framing and adapting it to actual needs while the process itself is under way. The framing of the digital PB and the way the process was conducted resulting in success and flaws. The youth of the experiment, its adaptive capacity and reinvention are still open-ended.

As participation technologies, PB are in a position to configure processes which, instead of reproducing separations which are very much present in several democratic models – separation between representatives and those represented and between specialists and lay-persons – , contribute to promoting cognitive citizenship. This capacity requires citizens' involvement – endowing them with decision-making capacities – in processes involving technical dimensions (including social technologies) and which interfere in the State intervention sphere in an area traditionally configured as the preserve of State regulation. However, neither democratic reinforcement, nor the contribution to citizen empowerment can be attained at the expense of introducing ICTs. In processes such as the one presented here – combining social technologies and material technologies – we conclude that the potential for citizen involvement and empowerment is more successful in the district PB than in the digital PB. In the former, participants must have a good grasp of the process and its working rules in order to participate in it; in the latter, where participation can be

reduced to using a given technology, participants do not have to know how the relevant technologies work (telephone, the Internet, etc.) in order to use them.[24] Summing up, it is not enough to amplify the process democratically in terms of participation, it is also necessary to democratise it in terms of knowledge.

One of the conditions for securing wider citizen participation (which implies ensuring their inclusion in the processes irrespective of gender, ethnicity, age, income, education, inaptitude, language, Internet experience) is the provision of ample and varied accessing means, including an understanding and use of these means. A second condition is contained in making the necessary information available, not only to ensure the quality of participation in the deliberative processes (understood here both in the sense of debate and decision-making, cf. Avritzer, 2000), but also to ensure its transparency. A third condition regards the diversity of means and processes which make participation viable, including the different ways of acquiring information, expression and deliberation, especially on the part of those who will be affected by decisions. A fourth condition is related to responsitivity and government commitment to carry out the decisions made in processes of this nature.

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[24] A situation which B. Latour (1999) characterised as being the result of the 'black boxing' process, i.e. when technologies function properly, scientific and technological work is invisible. Paradoxically, this means that, as technologies enter our everyday life, the more opaque and obscure they become.

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