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Modernizing Democracy: Computer Aided Citizen Participation and Decision-making in Planning (a talk given to staff at the Ford Foundation)

"Whenever the people are well informed they can be trusted with their own government" and "whenever things get so far wrong as to attract their notice, they may be relied on to get them to rights."

Thomas Jefferson, Letter to Richard Price
8 January 1789

The impact of modern media on the political process has been repeatedly discussed as each new wave of technology is mainstreamed. While the impact on public opinion by successive technological improvements in mass communication is undisputed, at least in its broad outlines, changes resulting from interactive, computer-based, person-to-person technologies are more elusive. What is meant by modernizing democracy through the application of information technology is explored in the context of the public policy and planning decision-making process and its ability to both stimulate and support citizen participation and decision making is the subject of the talk.

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As Donald Appleyard has noted "technical planning issues are not only value based, but identity based…physical planning decisions can, and frequently do, threaten the identity and status of certain groups while enlarging the powers of others…" Planning, including urban design and zoning, largely decides a community's physical form, and therefore is inherently local and generates an extraordinary amount of local attention because it deals with issues that affect everyone. As a result they have the ability to reinforce the relationship between people and places and to identify common ground between competing interests in an increasingly diverse society.

Further, as a result of extensive developments in the use and application of new tools to facilitate citizen input in the decision-making process, planning provides an excellent context to better understand what is meant by "modernizing" democracy through the use of information technology.

Citizen-based participatory democracy is a complex issue in itself. While this is not the appropriate venue to discuss the range of theories on the democratic process, an understanding of what creates a democratic process is fundamental. Robert Dahl has suggested (see Democracy and its Critics) that the process for making binding decisions, and in our case the appropriateness of the digital tools, should be based on the following criteria:

1. *Effective participation:* citizens should have adequate opportunities for effective participation, including placing questions on the agenda, and not have unequal participation, which violates the principle of equal consideration of interests. Tools that have their own built-in agendas and are deterministic fail this test.

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2. *Voting equality at the decisive stage* requires that each citizen has an equal opportunity to express a choice that is equal in weight to the choices of others. Tools that tend to devalue individual choices fail the test.
3. *Enlightened understanding* assumes each individual should have the adequate and equal opportunities to access information and to come to their own conclusions. Tools that suppress or manipulate information, or give some individuals easier access to information, fail the test. "Black Box" tools that are not transparent, where the processes, outcomes, and information are mystified, potentially may lead to manipulated outcomes.
4. *Control of the agenda* requires that individuals have the opportunity to place matters on the agenda that are to be decided during the democratic process. Tools that are inflexible and unresponsive to a dynamic planning and decision-making process may make it difficult to adjust the agenda to accommodate a new matter.

These qualities have guided the approach taken by the Environmental Simulation Center (ESC) in both the development of digital tools and their application in real world community-based planning projects.

Sophisticated PDDSS (Planning and Design Decision Support Systems) built on a Geographic Information Systems (GIS) platform, such as CommunityViz™, (designed and developed by the Environmental Simulation Center for the Orton Family Foundation) are always grounded in the experiential world of everyday experience. They are designed to make complex multivalent problems (a multivalent problem is one that contains incommensurablilties, e.g. do we fund daycare or police or libraries) sensible to both the lay public and professionals. PDDSS allows the user in a non-linear, non-hierarchical fashion to forecast the results of public and private decisions develop scenarios based on those policies and represent them in both 2D and dynamic real-time 3D virtual environments, analyze the scenarios' impacts on the fly, and iteratively refine the alternative scenarios. In CommunityViz™ the three-dimensional representation of alternatives in an information rich interactive virtual reality environment transcends the use of visualization and visual simulation as merely illustration.

Rather, visualization and visual simulation is used by the ESC to support the concept of design as inquiry and is based on John Dewey's Education concepts of learning by doing. The doing is using a 3D "kit-of-parts" or building blocks to assemble alternative development scenarios. The learning is through the objective evaluation of a design decision related to how well it performs against criteria and indicates established (and often ranked) by the participants in a collaborative, consensus building process. The planning and design process is iterative using the rapid feedback loops made possible by the application of information technology.

These concepts, tools and their application were explored through four case studies. The first case study focused on "Ground Zero" and the misuse of information technology, including electronic voting devices, by both the Lower

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Manhattan Development Corporation (LMDC) and the Regional Plan Association (RPA). In the case of the LMDC public outreach program choices for a master plan were pre-mediated and their presentation to the public mystified by making it virtually impossible to compare and evaluate the alternatives. The Regional Plan Associations' "Town Hall Meeting" where the process was manipulated to result in a desired outcome by controlling the agenda and limiting effective participation. Neither process satisfied Dahl's criteria for democratic decision making.

The other case studies focused on regional (Baltimore 2030), district/neighborhood (Southwest Santa Fe), and site specific (Hope VI Public Housing Project in New York City) projects done by the ESC and its collaborators that fully integrated digital tools with democratic decision making process values. In each the key to democratic public involvement and decision making process, rated on the type of question asked to participants. As typified by the "Ground Zero" example the conventional way to approach the public starts with the wrong question. "How do you like this proposal?" Reliance on this type of meeting and use of information technology has given public involvement its aura of futility and created public mistrust.

A democratic public involvement process starts by asking a very different question: "What do you want?" at the beginning of this decision-making process, before experts or policy-makers deliberate or develop the plan, giving value to the participants' comments. At each scale, PDDSS digital tools were used to provide information and assist the participants to frame issues, develop principles and building blocks that reflected the principles, formulate indicators to assess alternatives, create alternatives and frame choices. In the Hope VI project, the digital tools were also used to map the perceptions of all of the stakeholders as a way to identify potential conflicts, and periodically updated to assess whether the agreed upon interventions were making a difference and changing perceptions and behavior. The use of the digital technology longitudinally rather than episodically took advantage of the fast feedback loops.

In conclusion, public involvement and digital information technology together allow for the achievement of objectives that neither could achieve independently and that could not be arrived at in any other way.

- *Information at the public's fingertips* – visualizations and visual simulations distill enormous data resources in ways that are intuitively understood by the public. The public has access to the same information that planners have, and that enables them to make sound, informed decisions.
- *Test driving the future* – The public is given clear choices and can better define what course of action is best for the community.

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- *Instant feedback* – PDDSS tools close the "response gap" by providing instantaneous feedback on fundamental decisions
- *Permission to act* – public process encourages communities to identify shared goals. Visualization and visual simulations communicate a clear image of where the community wants to go.

18 September 2006