New Information Technologies in Public Participation:
A Challenge to Old Decision-Making Institutional Frameworks

by

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ABSTRACT

Given the progress in information technology (IT) in the past 30 years, I hypothesized that radically new conditions exist for a qualitative improvement in public participation in decision-making. Two examples of key challenges are: 1) to bring more interaction early-on to the dialogue between citizens and decision-makers, rather than a "tunnel" two-step process (compile opinions-consider them at the very end); 2) to enable common, lay citizens to give meaningful contributions to decisions that require expert knowledge to understand the alternatives available. In order to test my hypothesis, I developed a prototype of an Intelligent Multimedia System to support public and technical consultation and, together with Internet-based collaborative tools, introduced it in the environmental impact assessment review process, for the solid urban waste incinerator of S. João da Talha, Portugal.

Supported by the evidence gathered from this experiment and by my analysis of the qualitative jump these IT developments represent, I argue that it is possible to use this new IT to capture and represent meaningful planning knowledge and with it enable multiple improvements in the public consultation, both qualitatively and quantitatively. On the other hand, observing the institutional responses and constraints during the process, my findings strongly suggest that the current institutional and regulatory context, inherited from old frameworks, is an impediment to fully set in place the improvements enabled by these IT developments. In other words, the decision-making institutional framework has not evolved at a pace fast enough to provide adequate responses to the challenges brought by the new IT. My findings also illustrate how different actors in a decision-making process are constrained by these old frameworks to follow different planning paradigms, further emphasizing the need to adjust to the new technology reality.

In this thesis, I present my hypothesis and research questions; the methodology I followed; the scientific traditions and bodies of literature that support this research; the case study and thesis experiment used to collect direct evidence; the analytical reasoning concerning the IT qualitative jump; the suggested research agenda for this domain; and the conclusions derived from this research, suggesting possible avenues to institutionalize some of the demonstrated IT-based improvements in public participation.

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I dedicate this thesis to my Father and my Mother.

GLOSSARY

AI. Artificial Intelligence

CD-ROM Compact Disc - Read Only Memory

CITIDEP. Centro de Investigação de Tecnologias de Informação para uma Democracia Participativa (Research Center on Information Technology and Participatory Democracy)

CTRSU. Central de Tratamento de Residuos Solidos Urbanos (Solid Urban Waste Processing Unit)

DB. Data Base

DGA. Direcção Geral do Ambiente (Environmental Ministry General Agency)

DRARN-LVT. (or DRA-LVT) Direcção Regional do Ambiente e Recursos Naturais - Lisboa e Vale do Tejo (Environmental Ministry Agency for the Region of Lisbon and Tagus Valley)

DCEA-FCT-UNL. Departamento de Ciencias e Engenharia do Ambiente, Faculdade de Ciencias e Tecnologia, Universidade Nova de Lisboa (Dept. of Environmental Sciences and Engineering of the New University of Lisbon).

EIA. Environmental Impact Assessment

ENGO. Environmental Non-Government Organization

EPA. Environmental Protection Agency, USA

FCT-UNL. Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Portugal

GEOTA. Grupo de Estudos de Ordenamento do Território e Ambiente (Environmental and Land Use Planning Study Group, an ENGO)

KB. Knowledge Base

IPAMB. Instituto de Promoção Ambiental (Institute for Fostering Environment)

IT. Information Technology

IMS. Intelligent Multimedia System

LPN. Liga para a Protecção da Natureza (Environmental Protection League, an ENGO)

MARN. Ministério do Ambiente e dos Recursos Naturais (Ministry of Environment and Natural Resources)

MDB. Multimedia Data Base

MIT. Massachusetts Institute of Technology

NGO. Non-Governmental Organization

PP. Public Participation

Quercus. Associação Nacional de Conservação da Natureza (National Association for Preserving Nature, an ENGO)

SUW. Solid Urban Waste

WB. World Bank