

Online Environmental Information Systems

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INTRODUCTION

In today's information society, electronic tools, such as computer networks for the rapid transfer of data and composite databases for information storage and management, are critical in ensuring effective environmental management. In particular environmental policies and programs for federal, state, and local governments need a large volume of up-to-date information on the quality of water, air, and soil in order to conserve and protect natural resources and to carry out meteorology. In line with this, the utilization of information and communication technologies (ICTs) is crucial to preserve and improve the quality of life. In handling tasks in the field of environmental protection a range of environmental and technical information is often required for a complex and mutual decision making in a multidisciplinary team environment. In this regard e-government provides a foundation of the transformative ICT initiative which can lead to better environmental governance, better services, and increased public participation in environmental decision-making process.

The concept of e-government refers to the use of ICTs to support government operations, engage citizens, and provide government services including online delivery of suitable local services and running online environmental information systems (EIS). By providing services, online EIS empowers the public to participate a policy decision-making in environmental issues facing our society. This enables the public to make environmentally friendly decisions and to understand how to protect themselves from the environment based on credible and accurate environmental information. Consequently e-government creates a demand for new

ways for citizens to engage, directly or indirectly, in shaping and supporting environmental policies and priorities.

BACKGROUND

E-Governance and E-Democracy

Increasingly, almost everything in our daily lives is being influenced by ICTs. The operation of governance is no exception with a number of national, state, and local governments utilizing ICTs to support daily decision making, engage citizens, and provide public services. The process of governance is now being prefixed with an "e." E-governance offers an opportunity for governments to re-invent themselves, get closer to the citizenry, and forge closer alliances and partnerships with diverse communities of interest, practice, expertise, conviction, and interdependence within the context of national development agendas. It brings together people and communities, regions, economy, and the environment with supporting respect, equity, reconciliation, sustainability, accountability, fiscal responsibility, and inclusiveness. E-governance can range from simple Web sites that convey basic information to complex sites transforming the customary ways of delivering all sorts of government services (e.g., downloading forms, lodging applications, and participating surveys).

The recent debates focus on the ways in which technology can aid democratic governance especially in the developed world since the 1980s (Arterton, 1987; Mclean, 1989). It accelerated with the proliferation of the Internet as an information and communication medium (Karakaya, 2003). The interactive nature of

the Internet in e-government allows contributions from the user instead of broadcasting data from one centre to many users (Hewitt, 2000; Yigitcanlar, 2003).

E-governance is like other advancements involving the utilization of ICTs. It is seen as somewhat of a revolution, with many researchers considering e-governance as part of a new vision of government for the 21st century (Jones & Crowe, 2001; Kearns, Bend, & Stern, 2002; Macintosh, Malina, & Whyte, 2002; Pardo, 2000; Socitim & Idea, 2002). The definitions of e-governance differ but generally read something along the lines of "the use of ICTs by government agencies to enhance the access and delivery of services to benefit citizens, business partners and employees" (Van Dermeer & Van Winden, 2003, p. 411). According to Mahizhnan and Andiappan (2002, p. 1) e-governance means more than simply technologizing government:

It requires a fundamental rethinking of governance itself and...a re-inventing of government...e-government re-examines the organizing principles of bureaucracy and governance re-defines the objectives and deliverables of government and re-deploys the resources available.

In practice e-governance reflects four dimensions each one dealing with the functions of government itself. The four are: (1) e-services; (2) e-management; (3) e-democracy; and (4) e-commerce (Cook, LaVigne, Pagano, Dawes, & Pardo, 2002). These government services include: paying taxes and utility bills; renewing vehicle registrations; paying for recreational programs; renewing driver's license; voter registration; voting on the Internet; ordering birth, death, and marriage certificates; sharing environmental information; and many more.

The Commonwealth Centre for Electronic Governance (CCEG, 2005) states that the route to e-governance is only now emerging, as governments and citizens around the world experiment with, and learn to exploit, new media and the new information technologies. E-governance involves new styles of leadership; new ways of debating and deciding on strategies; new ways of accessing services; new ways of transacting business; new ways of accessing education; new ways of listening to citizens and communities of practice; and new ways of organizing and delivering information. As a concept, e-governance can be perceived to be contextually inclusive of e-government, e-democracy, and e-business (CCEG, 2005).

E-democracy is a term that elicits a wide range of reactions. Briefly it is the use of ICTs and strategies by democratic sectors within the political processes of local communities, states, nations, and on the global stage. The democratic sectors include the following actors: (1) governments; (2) elected officials; (3) media and major online portals; (4) political parties and interest groups; (5) civil society organizations; (6) international governmental organizations; and (7) citizens (Clift, 2002).

Effective ability to access government information and to use information as a tool in all aspects of one's life, has become more and more vital in today's society. Recent research illustrates the following (CCEG, 2002):

E-democracy is a growing trend among outside groups, but most governments are still very much struggling with the concept.

E-governance is changing the ways in which government does business with the public and, in the process, is creating demand for some form of participation from citizens. This gives some credence to the ongoing thinking that e-governance will eventually result in some form of e-democracy.

E-democracy movements are founded on information precepts and engage in the sharing and developing of knowledge.

For the citizen to influence government policy, programs or policy evolution, the creation and sharing of knowledge by governments with the public will become mandatory.

Access to environmental information is both a consequence, and a driver of, the digital revolution. Governments can respond to the need to be more open by adopting a number of principles of information management, using a mix of technologies. E-government can serve as a major hub for environmental information as well as an over arching platform for environmental management and planning. Most importantly EIS can be accessible through e-government as a local e-service. This makes environmental information accessible to the public 24/7 and free of charge. It also helps in promoting sound environmental considerations; integrating environment and development concerns; and supporting sustainable development.

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