

Electronic Government-to-Government Collaboration

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INTRODUCTION

Most of the effort of e-government researchers and practitioners today is focused on G2C (government-to-citizen) and G2B (government-to-business) e-government, aiming at the development of information systems that offer to the citizens and businesses the capability to communicate and perform their transactions with the public administration (e.g., various declarations, applications, etc.) electronically, over the Internet or other electronic channels. Taking into account that the quality of most public administration policies and services (delivered through physical or electronic channels) depends to a large extent on the extent and the quality of the collaboration among many involved public organizations (e.g., ministries, regions, prefectures, municipalities, and so forth), it has been widely recognized that much more research is required concerning the exploitation of information and communication technologies (ICTs) for supporting and enhancing government-to-government (G2G) collaboration (Lenk & Traunmüller, 2002; Leitner, 2003; Traunmüller & Wimmer, 2003, 2004; Scholl, 2005). According to Scholl (2005),

current e-Government research might possibly suffer from the iceberg phenomenon, where most attention is dedicated to the above surface phenomena (i.e., G2C and G2B e-Government), while “sub-surface” phenomena (such as the G2G e-Government, etc.) not readily available to scientific scrutiny have been spared.

The collaboration among public organizations, from the same country or even from different countries, has become today much more important and at the same time much more complex than it was in the past, mainly due to the globalization of the economy (resulting in increased interdependence among national economies), the development of various super-national entities (such as the European Union, the North American Free Trade Association (NAFTA), etc.), the continuous growth of the new digital economy, and so on. Also, the growing complexity and the international nature of many problems of modern societies necessitate extensive collaboration among many public organizations of various administrative levels,

competences, and mentalities, from one or more countries, for the design and implementation of effective public policies for managing these problems. Additionally, in most cases, the participation of representatives of citizens and enterprises is necessary as well. For example, the design and implementation of environmental policies for a wider area, such as for a wider river basin or lake area, requires extensive collaboration among several public organizations of different administrative levels, competences (e.g., concerning environment, agriculture, forests, industry, tourism, etc.), and mentalities. These public organizations initially have to exchange experiences, knowledge, and views on the environmental problems of the area. Afterwards, they have to design collaboratively effective policies for managing these problems; then follows the collaborative implementation of these policies, which very often includes long and complex interorganizational processes, for example, to grant various licenses for projects or activities having an impact on the environment of this area, and so forth. Also, periodic evaluations of these policies and their implementation are required in order to identify weaknesses, and if necessary, to proceed to corrective actions. The growing importance of the various types of public sector interorganizational networks (e.g., policy networks, service delivery networks, knowledge networks, etc.) have been strongly emphasized in the relevant research literature (e.g., Dawes, 2005; Provan & Milward, 1995; Raab, 2002, etc.), which investigates their basic characteristics, forms, performance, and critical success factors.

However, the G2G collaboration required for the design of effective public policies today is based mainly on physical meetings of various interorganizational physical committees, which are costly in terms of time and money, and very often inefficient, unproductive, and slow. Also, the G2G collaboration required for the implementation of these public policies and the production and delivery of the corresponding services is based on the exchange of information among the involved public organizations using “paper documents”, which is costly, slow and inefficient as well. Therefore, it is of critical importance to support electronically the various types of G2G collaboration required for the design of effective public policies (strategic level) and the implementation of them (opera-

Figure 1. Classification of groupware tools

	same place (collocated)	different place (remote)
same time (synchronous)	Electronic Meeting Systems Team Rooms Group Decision Support Syst. Electronic Whiteboards	Videoconferencing Teleconferencing Document Sharing Electronic Whiteboards
different time (asynchronous)	Shared Containers E-Mail Electronic Bulletin Boards Virtual Rooms Document Management Syst.	E-Mail Workflow Management Syst. Formflow Management Systems Messaging Systems Routing & Notification Syst.

tional level). Moreover, the realization of the highly innovative vision of integrated electronic service delivery (online one-stop government) (Kraaijenbrink, 2002; Wimmer, 2002), through virtual public agencies, these terms denoting single access points to many related electronic transactions and services—usually the ones required in a particular life event of the citizens or enterprises, or by a particular group of citizens or enterprises—which are managed by several different public organizations, will necessitate extensive electronic support of G2G collaboration (mainly at the operational level).

In this direction, this article presents an integrated G2G collaboration platform, which has been designed, developed and evaluated in the project ICTE-PAN (Methodologies and Tool for Building Intelligent Collaboration and Transaction Environments for Public Administration Networks) of the Information Society Technologies (IST) Program of the European Union (IST-2001-35120) (<http://www.eurodyn.com/ict-e-pan>). In particular, the next section provides the background concerning the electronic support of G2G collaboration. Then the architecture and the basic components of this G2G collaboration platform are presented. In the final two sections the future trends and the conclusions are outlined.

BACKGROUND

The development of information systems (IS) which can electronically support the collaboration (e.g., the communication, the interaction, the information or knowledge exchange, the coordination of actions) among the members of a team, who can be either remote or at the same place, both at the strategic and at the operational level, has attracted considerable research interest. This research has resulted in the development of various types of software tools, which can electronically support various types of collaboration, collectively referred to as groupware (Beaudouin-Lafon, 1999; Lococo & Yen, 1998; Ehrlich, 1999; Munkvold 2003a, b; Thomas, 1996), and has

given rise to a new research field, referred to as computer-supported collaborative work (CSCW), dealing with the exploitation of ICTs for supporting and enhancing collaboration.

According to Ehrlich (1999), groupware generally supports one or more of the following four basic elements of the teamwork: communication, meetings, information sharing, and coordination of actions. As main groupware tools for supporting communication he mentions videoconferencing, shared whiteboard, group editors, shared documents-applications, media spaces, and e-mail. As groupware tools for supporting meetings, he reports various kinds of software that allow participants to enter ideas and comments on the ideas of the other participants, vote on various issues, and so forth, such as the electronic meeting systems. Information sharing is usually based on enabling any member of the team to store a message or document in a database, which is accessible by all the other members of the team. As main applications for this purpose he mentions electronic bulletin boards and document repositories. Finally as the main groupware applications for supporting the coordination of the actions of the team members, he mentions Workflow Management Systems and Calendar & Scheduling Systems.

In Figure 1 we can see another classification of groupware tools (Lococo & Yen, 1998), which is based on the following two dimensions: (1) whether they support collaboration among participants located at the same place (collocated) or at different places (remote) and (2) whether they support synchronous or asynchronous collaboration.

Groupware tools can be also classified according to the type of collaboration they support into the following two categories:

- a. Structured collaboration support tools, such as the workflow management systems
- b. Unstructured collaboration support tools, for example, the group decision support systems, the forums, and so forth

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