Chapter 2.14

Social Networks Applied to E–Gov:
An Architecture for Semantic Services

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ABSTRACT

The technological advances establish new communication forms between people and have also reached the government sphere and its activities, improving access to information and allowing greater interaction between citizens through C2C (Citizen to Citizen) Services. Based on these aspects, this chapter presents a proposal for software architecture, using a social network to map the relationships and interactions between citizens, accounting and storing this knowledge in a government ontological metadata network. Using UML notation (Unified Modeling Language) for Software Engineering process and Java platform for development, a software prototype was modeled and developed in order to manage and handle e-Gov-driven social networks, using ontological metadata to computationally represent the social ties. This prototype is also capable of providing graphical display of social networks, enabling the identification of different social links between citizens, creating a tool intended for government agencies, since it allows a quantitative analysis of information in the social network.

INTRODUCTION

The accelerated advances of Information and Communication Technologies (ICT) have facilitated information exchange among people, geographically separated or not. The availability of faster, computer-mediated interaction devices and technologies enabled the emergence of new kinds of relationships

Figure 1. e-Gov as a merge of CRM, SCM and ERP systems
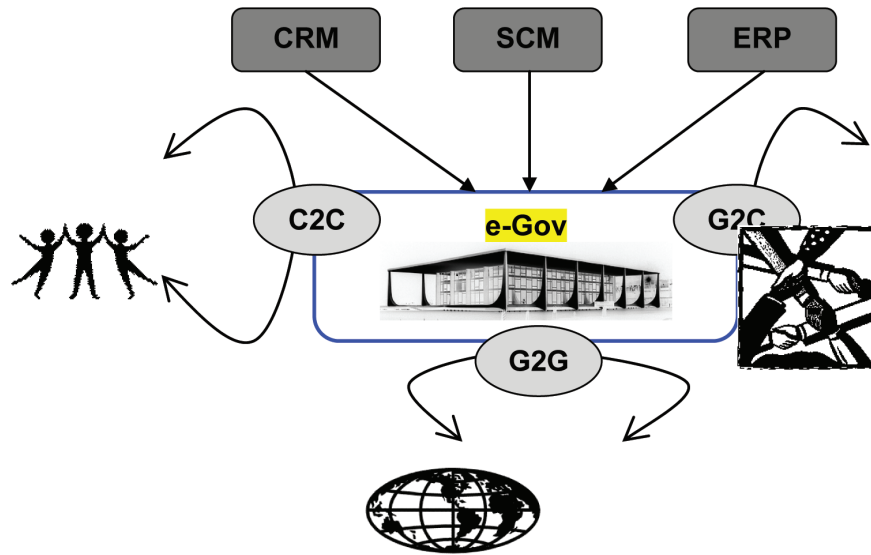
among people, establishing the concept of virtual communities (Rheingold, 2000).

Similarly, governments have been following the above mentioned technological trends, as a way to improve the services they are meant to make available to their citizens, or even for training civil servants in order to improve the decision-making process. This progress enabled the emergence of a new concept for such strategies of computer-mediated governance, often called e-Government (briefly, e-Gov).

These new strategies of using computer-based solutions for improvement of governmental actions have led governments to look for digital convergence through the integration of different systems (G2G), providing faster and clearer information to citizens (G2C), creating solutions to a more participatory politics with the community (C2G) and promoting interaction and integration among citizens (C2C). The development of such structures should take into account the ability to provide high-quality services, besides facilitating an efficient integration between citizens and government agencies, thus making them each time more similar to CRM (Customer Relationship

Management)-based systems (Sang et al., 2005). Such e-Gov systems must also handle massive volumes of data, a considerable number of actors, as well as the multiple variables involved in procurement and financial transactions in a similar way to SCM (Supply Chain Management) systems. Another aspect that must be implemented efficiently is the standardization and management of operations and processes, similarly to the functionalities normally found in an ERP (Enterprise Resource Planning). Figure 1 shows how the merging of such different systems could result in more efficient e-Gov systems.

E-Gov systems that are targeted directly to citizens must promote social integration and must also have tools to help people to meet their needs. A possible way to achieve this goal is through the implementation of adaptive systems that are able to modify themselves according to each information and data inserted into them. Through the use of technical analysis (Hanneman, 2005), each citizen could be represented as an actor in a network; interactions and relationships among them could be represented as relational ties, thus forming an one-mode network.

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