Chapter XXXV
Structuration Theory and Government IT

J. Ramon Gil-Garcia
Centro de Investigación y Docencia Económicas, Mexico

Shahidul Hassan
University at Albany, SUNY, USA

INTRODUCTION

The relationship between information technologies (IT) and organizational (structural) change has been a topic of interest for public administration and policy scholars for a long time (Dawes, Gregg, & Agouris, 2004; Fountain, 2001; Garson, 2004; Heeks, 1999; Heintze & Bretschneider, 2000; Kling & Lamb, 2000; Kling & Schacchi, 1982; Kraemer & King, 2003; Kraemer, King, Dunkle, & Lane, 1989; Rocheleau, 2000). Initially, most studies were somewhat deterministic in nature, arguing that either IT had the power to transform organizational structures, or that organizational and institutional factors largely determined the characteristics and effects of IT. Current research in information systems (W. Orlikowski, 2000; W. J. Orlikowski, 1992; W. J. Orlikowski & Robey, 1991), organizational studies (Barley, 1990; DeSanctis & Poole, 1994), and public administration and policy (Fountain, 2001), however, indicate that the relationships between IT and organizational structures are not so simple. In fact, they are recursive, complex, and somewhat unpredictable. Employing what has been called the ensemble view of technology (W. J. Orlikowski & Iacono, 2001), these studies argue that research on IT in organizations should focus not only on the technological artifacts themselves, but also on the social relationships around their adoption, development, and use. Thus, they use, and encourage others to use, theoretical approaches that call attention to the social and complex nature of IT in organizations. Structuration theory (Giddens, 1984) is one such theoretical approach that has proved to be useful in studying the dynamic relationship between IT and organizational structure.

In this chapter, we present several examples of how structuration theory has been applied to study IT in both public- and private-sector organizations. We highlight the usefulness of this perspective in understanding incremental and swift episodic change in organizational and interorganizational settings. It is, however, only a brief review of the use of structuration theory in information systems and e-government research. We hope this chapter will serve as an introduction to the topic and a useful starting point for scholars interested in

using social sciences perspectives in e-government research. The chapter is organized in six sections, including the foregoing introduction. The second section highlights the characteristics of the ensemble view of IT in organizations and provides a brief overview of structuration theory. The third section presents four influential models that apply structuration theory to information systems research. The fourth section argues that previous models have mainly explained incremental change within organizational settings, and that an important future trend for e-government research should be to understand radical change and interorganizational relationships. The fifth section provides some concluding remarks, and finally the last section suggests some future research directions.

BACKGROUND: INFORMATION TECHNOLOGIES, ORGANIZATIONS, AND STRUCTURATION THEORY

The Ensemble View of IT

The ensemble view of technology (W. J. Orlikowski & Iacono, 2001) acknowledges that information technologies are not only physical artifacts, but they also embody the social relations around their adoption, development, and use. The technical artifact is only one component of a more complex sociotechnical system (Kling & Lamb, 2000; Kraemer, Dutton, & Northrop, 1980; Pasmore, 1988) that includes an ensemble, or web, of tools, techniques, applications, resources, people, organizational arrangements, and policies, among other elements (Kling & Schacchi, 1982).

W. J. Orlikowski and Iacono (2001) identified four different variants of the ensemble view of IT: IT as a development project, production network, embedded system, and structure. To a certain extent, all these variants focus on the dynamic interactions among technology, structure, and human agency. Examples of theoretical endeavors grounded on the ensemble view of IT are the sociotechnical systems theory (Bostrom & Heinen, 1977; Kraemer & King, 1986; Mumford, 2000), social informatics (Kling, 2001; Kling, Rosenbaum, & Hert, 1998), the technology enactment framework (Fountain, 1995, 2001; Gil-García, 2005), structurational perspectives (Barley, 1986; W. Orlikowski, 2000; W. J. Orlikowski, 1992; W. J. Orlikowski & Robey, 1991), and adaptive structuration theory (DeSanctis & Poole, 1994; Poole, Jackson, Kirsch, & DeSanctis, 1998). In this chapter, we focus only on the models of technology based on Giddens' structuration theory (Giddens, 1979, 1984).

A Brief Overview of Structuration Theory

According to structuration theory, human actions and social structures are mutually constitutive (Giddens, 1984). More specifically, individual actions are constrained by certain societal rules, but at the same time, these practices shape or reinforce those social structures: "The basic domain of study of the social sciences, according to the theory of structuration, is neither the experience of the individual actor, nor the existence of any form of societal totality, but social practices ordered across space and time" (Giddens, p. 2). These social practices can refer to relationships among individuals and relationships between individuals and technological artifacts (DeSanctis & Poole, 1994; Gil-García, 2005; W. Orlikowski, 2000; W. J. Orlikowski, 1992).

There is no clear causality between social structures and individual actions. In fact, according to Giddens (1984, p. 19), "one of the main propositions of structuration theory is that the rules and resources drawn upon in the production and reproduction of social action are at the same time the means of system reproduction (the duality of structure)." Therefore, a dynamic interaction between individual actions and social structures exists. Previous studies using structuration theory have conceptualized information technologies as both a constitutive part of the structures and the result of the interactions between those structures and individual actors (DeSanctis & Poole, 1994;