The Amplification-Reduction Structure of Technology: The Example of the Intranet

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ABSTRACT

Information technology has long been recognised as a cause of social change. Recent developments in information technologies (IT), such as internet, intranet, and extranet, have stimulated considerable interest in how they will impact business organizations. Studies have largely examined the role that IT plays in improving information efficiency and synergies, in promoting collaboration and information sharing both inside and across organizations and in facilitating the transition to new forms of organizing. Most such studies take a technology-centric or human-centric approach. Whereas the former view reifies technology, assuming that its effects are predictable, stable, and performing as intended and designed across time, the latter minimizes IT to the point it becomes infinitely and flexibly interpreted. However, IT media are only significant to the extent that they do not only involve changes in and novel ways of communicating, but most importantly they change the meaning of what it is to communicate and the social and cultural frame that situates communication in unpredictable ways. Taking a communicational approach to organization, the present paper uses Jakobson’s 1960 semiotic model and ideas from Ihde (1990) to show how the implementation of intranets and email systems has amplifying and reducing effects on the interactions among members of a community. Finally, some implications for the theory of implementation of new technologies are drawn out.

Keywords: Amplifying Effects, Communication, Information Technologies (IT), Intranets, Meaning, Reducing

1. INTRODUCTION

Technology has long been recognised as a cause of changes, for better or worse (Mumford, 1934). Recent developments in information technology (IT) have stimulated considerable interest in how the net technologies (such as internets, intranets, extranets, etc) will impact business organizations. Studies have largely examined the role that IT plays in improving information efficiency and synergies (Dewett & Jones 2001), in promoting collaboration and information sharing both inside and across organizational boundaries (e.g., Barua, Sophie Lee, & Whinston, 1995; Lind & Zmud, 1995; Pickering & King, 1995; Quinn, Anderson, & Finkelstein, 1996a; Hiltz, Johnson, & Turoff, 1986; Fulk & DeSanctis, 1995; Damapour, 1991; Fulk & DeSanctis, 1995). Huber (1990) suggests that IT is a variable that can enhance the quality and timeliness of organizational intelligence and improve decision-making, thus

DOI: 10.4018/ijkbo.2013070102
promoting organizational performance. Dewett and Jones (2001), following Thompson (1967), propose that technology has to be regarded broadly as the process of managing the uncertainty and risk surrounding the transactions necessary to convert inputs into outputs. In treating the relationship between information technology and organizational aspects, scholars often take structural aspects (such as vertical control, horizontal coordination, decentralization, teams, etc) as their units of analysis and IT as a moderator that affects them in various ways (Dewett & Jones, 2001). For instance, it is assumed that IT creates a larger pool of codified knowledge that improves the employees’ initial base of knowledge when engaged in situations of problem-solving and decision-making (Leidner & Elam, 1995; Lado & Zhang, 1998). Nevertheless for some, the effects of new technologies are not universally positive. Hubert (1990) suggests that IT is a variable that can enhance the quality and timeliness of organizational intelligence and improve decision-making, thus promoting organizational performance.

By and large, two approaches are associated with organizational studies of technology adoption, diffusion, and use: technology-centred, or human-centred (Orlikowski & Scott, 2007). The techno-centric perspective is interested in understanding how technology leverages human action, taking a largely functional or instrumental approach that tends to assume unproblematically that the effects of technology are predictable, and stable, performing as intended and designed across time and place. This perspective tends to reify technology, and promote a deterministic view of its relationship with organizations (Barley, 1988; Kling, 1991; Suchman, 1994; Thomas, 1994). By contrast, the human-centered perspective focuses on how humans interpret, make sense of and interact with technology in undetermined ways. Here the technology is understood in different ways, depending on the different meanings assigned to it and the different ways in which people engage with it. While such a view provides a more dynamic and situated view of the relationship of technology with organizations it tends to minimize the role of the technology itself (Orlikowski & Scott, 2007).

However, researchers working from a phenomenological perspective, regard technology as not simply a more efficient, effective or more convivial method of doing things, but most importantly, it involves a practice that changes what it is to be done. For instance, information technologies (IT, such as internet, intranet, extranets, etc) are not only means of meeting a desire to communicate, but they also change the social, cultural, emotional frame which situates communication and interactions among people. New IT media are not simply instruments for pre-set purposes, but create new contexts which generate new meanings, rather than just mediating previously existing meanings in a more efficient way.

Taking a communicational, phenomenological approach to organizing, this paper seeks to contribute in a small way to this school of thought. More specifically, it takes Jakobson’s (1960) communication model to explore how new technologies change various organisational aspects of meaning embedded in a cultural setting. Intranets are not just a means of communication among organizational members, but they change our understanding of what organizing is about along with the performance of communication. Phenomenologically, some of the effects of the intranets are desirable and others are less so, as suggested by Ihde’s (1990) amplifying, reducing structure of technology.

The discussion is based on case study material gleaned from the Swedish Environmental Protection Agency (SEPA), an information-intensive institution. The SEPA has set up Intranets in an attempt to facilitate the flow of its information. The material to be drawn on is based on non-structured interviews with respondents working at SEPA. Intranets implied a new way of communicating for the employees, leading to a host of changes in the context of meaning.

Jakobson’s (1960) communication model is chosen because it depicts the various components constituting any given communication exchange. This enables us to consider the
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