Chapter XIV
A De-Construction of Wireless Device Usage

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ABSTRACT

In this article, wireless technology use is addressed with a focus on the factors that underlie wireless interaction. A de-construction of the information processing theories of user/technology interaction is presented. While commercial and useful applications of wireless devices are numerous, wireless interaction is emerging as a means of social interaction—an extension of the user's personal image—and as an object of amusement and play. The technology/user interaction theories that have driven the discussions of computer assisted communication media are information richness, communicative action, and social influence modeling. This article will extend this theoretical view of wireless devices by using flow theory to address elements of fun, control, and focus. Then, these technology/user interaction theories are used with respect to wireless devices to propose areas for future research.

INTRODUCTION

Within the United States, wireless devices have become ubiquitous communication devices. Yet, in Europe and the Far East, these devices are not only widely used as communication devices, but as vehicles of commerce and of entertainment. It is widely known that the GSM telecommunications standard is not fully implemented in the United States, inhibiting the development of wireless applications by firms to support their mobile customers. Yet, there seems to be more to this than telecommunication standards. This article will examine social behavioral issues that affect wireless usage and propose a model to better understand this usage.

Wireless devices, serving as transmitters of information at a reasonable cost from point to point without being tethered to a wired line, are profoundly impacting how we communicate and perform work (Rudy, 1996). Little research exists on how to design wireless technologies to better

support wireless communications and applications (Te'eni et al., 2001). Research on information technology design finds that the technology should be fit to the user's task needs (Senn, 1998, Swanson, 1988). Since wireless devices provide a tool for convergence of voice, text, audio, photos, videos, and data (Yager, 2003), it is critical that the design of these wireless devices fits the multiple modes of data exchange and usage supported by the wireless devices.

Models to explain information technology design and adoption are rooted in the assumptions of the usefulness and usability afforded by the technology (Davis, 1989, Swanson, 1988), where the context for these technology design and adoption models is the workplace. As information technologies have become pervasive throughout the culture (Gaver, 2005), these technologies, while still an instrument to perform work more efficiently, have become a means of social networking, diversion, and entertainment for the homo luden (Huizinga, 1950). Yet along with this play aspect, the homo luden also gains control of his/her personal space. These aspects of mobile information technologies, usefulness, usability, play, and control will be explored in this article to determine how these dimensions of mobile information technology interaction can enable flow (Csikszentmihalyi, 1975) and enable homo ludens (Huizinga, 1950) to seamlessly process information for work and for play. Huizinga (1950) notes that play influences the culture of the players as well as Gaver (2005) observes that pervasive, "ambient" technologies also shape the culture in which the technologies are used. In this article, the discussion focuses on the use of these wireless technologies that have become artifacts representative of work, social, and play activities in our everyday cultural contexts, and how these same cultural contexts, in turn, are shaped by the wireless artifacts, and through this interaction, the enactment of additional uses for the wireless devices.

THEORETICAL FOUNDATION FOR WIRELESS MEDIA USAGE

Two theoretical approaches will be examined. First, the view of wireless devices as communication media based in information richness theory is presented, followed by the theoretical view of wireless devices using the social networking theory perspective. Secondly, wireless media will be addressed as objects of play and of control. Finally, a model is developed showing the bidirectional impact of wireless devices as artifacts that influence culture and the resulting culture that in turn impacts perceptions of the wireless artifacts.

Media Richness Theory

The rational choice model contends that users select the most effective medium for data exchange. Media richness theory (Daft & Lengel, 1984; Lind & Zmud, 1991) proposed that managers will use richer media in ambiguous contexts and the leaner media for more structured tasks. For example, face-to-face media that permit the transmission of nonverbal clues and immediate feedback will be used in contexts that are unclear and need to be sorted through in order to reduce the ambiguity of the context. In information richness theory (Daft & Macintosh, 1981; Daft & Weick, 1984; Daft & Lengel, 1984), it was proposed that communication channels vary in their ability to convey information and meaning. This theory suggests a continuum where the richest channels are those that provide for more face-to-face interaction and feedback, allowing for the communication of nuances, often unspoken, in adding meaning to communication. The leanest channels are those written or printed. Since research into information richness theory has met with conflicting results, especially in the area of e-mail studies, other theories and theory extensions have been explored. Neither voice mail nor e-mail allow for