Chapter XXXI
Theory of Planned Behavior and Reasoned Action in Predicting Technology Adoption Behavior

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ABSTRACT

Research related to the impact of individual characteristics in their acceptance of online systems driven by information and communication technology (ICT) observed that dissimilarities among individuals influence their adoption and use of the systems. Thus, research streams investigating this issue generally follow the traditions of the theory of reasoned action (TRA) or the theory of planned behavior (TPB). Research reveals that individual characteristics, mediated by beliefs, affect attitudes, which affect intentions and behaviors. These two major behavioral theories related to technology acceptance and the intention to use technology might provide significant theoretical paradigms in understanding how online system adoption and diffusion, driven by information technology, can vary globally. In this study, the authors' first objective is to understand TRA and TPB as they study ICT-based online adoption and diffusion globally. Then, based on that theoretical framework, their second objective focuses on developing a theory of ICT adoption and diffusion as an online behavior.

INTRODUCTION

Evolution, which may denote a variety of concepts, is most generally defined as the accumulation of historically acquired information in an organized fashion (Bandura, 1986). Technological evolution seems to refer to natural forces not dissimilar to the forces of natural selection. The technological stage of evolution is characterized by the development and expansion of technology and information from generation to generation and by intensification of competition between human groups. On the other hand, technological development implies complete control over the process. This controlled process of technology development, diffusion, disruption, and adoption has cultural, behavioral, and social aspects (Kumar *et al,* 2008).

The adoption and extensive use of ICT-based online systems in public and private organizations has expanded dramatically. The Internet has become, within a very short time, one of the basic media of modern society to accept ICT. Many countries now consider understanding online systems and mastering the basic skills and concepts of ICT as part of the paradigms of market development. It is the single most powerful tool for participating in global markets, promoting political accountability, improving the delivery of and cost cutting in basic services, developing efficiency in operations of public and private organizations, and enhancing local development opportunities. Researchers indicate that, from the last decade, about 50 percent of all new capital investment in organizations has been in information technology (IT)-based online systems (Westland and Clark 2000). This huge investment in online systems and ICT can only be realized if its full potential is achieved. For ICT to achieve its full potential, it must be accepted and used by employees of organizations internally and by citizens externally. Explaining user acceptance of new technology is often regarded as a research area of great potential in contemporary ICT literature (Hu *et al.* 1999). Organizational theorists, IT professionals,

psychologists, sociologists, economists, market researchers, policy makers, and academics are all keenly interested in analyzing different aspects of the IT-intensive online system adoption from their own fields. The globalization of the market economy is extremely helpful in understanding technology diffusion and adoption in developed countries as well as in some developing countries regarded as Asian giants—such as Singapore, Hong Kong, Taiwan, Malaysia, South Korea, China, Singapore, Thailand, and India. However, the diffusion of ICT and acceptance of online systems do not follow a single track for all countries. In each country, the different economic and government policies and differences in social, cultural, and behavioral aspects are very significant and prominent. This paper mainly concentrates on evaluating ICT-based online system adoption and diffusion criteria based on the previously mentioned perspectives. Researchers also argue that the cultural, social, and behavioral attitudes in adopting online systems are strongly affected by some external attributes arising from political, economic, and marketing issues (AL-Shehry *et al.*, 2006; Damodran *et al.*, 2005). However, before going into further analysis regarding those aspects, we should examine brief definition of IT. Information technology (IT), also known as information and communication(s) technology (ICT) is concerned with the use of modern computer-based technology in managing, organizing, diffusing, and processing information in different public and private sectors.

The fundamental opportunity offered by an online system is for suppliers, developers, and sellers (i.e., providers of ICT) to gain direct access to different stakeholders without the development and maintenance costs associated with the physical distribution channels. In the electronic medium, competitors can emerge from anywhere in the world with significant differences in attitude, especially toward adopting new ICT. As a result, national and also global cultural attributes show significant disparities in the behavioral intention

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