Chapter VIII

Inter-Organizational Information System Adoption and Diffusion: A Review and Analysis of Empirical Research

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Abstract

New technology, fueled by the Internet’s commercialization, has led to new types of business partner connectivity. However, statistics show business-to-business (B2B) electronic commerce (EC) and electronic market growth are slower than anticipated (Bartlett, 2001). Realizing the full potential of this emerging inter-organizational connectivity requires understanding what facilitates its adoption and diffusion. Given the need for research in this area, this chapter reviews the existing inter-organizational information systems (IOISs) adoption and diffusion research. The chapter analyzes twenty-five empirical inter-organizational information system adoption and diffusion studies. This study identifies several IOIS types and lists and categorizes variables found to significantly influence adoption and diffusion.
Introduction

Before inter-organizational information systems (IOISs), particularly electronic commerce (EC) and electronic markets, can change society or work practices, they must be adopted and diffused. However, statistics show business-to-business (B2B) electronic commerce (EC) and electronic market growth are slower than anticipated (Bartlett, 2001). What facilitates IOIS adoption and diffusion?

A history of IOISs adoption research exists in electronic data interchange (EDI). In a synthesizing empirical study, Chwelos, Benbasat and Dexter (2001) brought significant variables from 11 previous EDI studies into one model. Using this model, the authors tested the significance of these variables with a survey of purchasing managers with significant EDI experience. The authors found that readiness, perceived benefits and external pressure significantly predict EDI adoption intentions. Their model’s constructs include technological, organizational and inter-organizational categories. Based on their findings, Chwelos et al. hypothesized that technological, inter-organizational and organizational levels determine emerging IOIS adoption.

This chapter evaluates and extends Chwelos et al.’s hypothesis by reviewing significant adoption and diffusion facilitators for an array of IOIS types. This review includes 25 empirical IOIS adoption and diffusion studies published between 1985 and 2001. This chapter categorizes variables found to significantly influence adoption and diffusion of various IOIS forms. The categorization supports and extends Chwelos et al.’s hypothesis. Variables in both adoption and diffusion stages for an array of IOISs fall into Chwelos et al.’s technical, organizational and inter-organizational categories. However, some variables fall into multiple categories. Given this, we propose variables found to significantly influence IOIS adoption and diffusion also facilitate adoption and diffusion of emerging IOIS forms.

This chapter is organized into five sections. The second section describes IOIS types. The third section summarizes IOIS adoption and diffusion research. Section four shows the frequency of significant independent variables in IOISs.
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