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Chapter XIV

Technology Trust in B2B Electronic Commerce: Conceptual Foundations

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ABSTRACT

A comprehensive conceptualization of trust in B2B electronic commerce should include trust in the infrastructure and the underlying control and support mechanisms. We refer to this new target of trust as "technology trust," which is described as the subjective belief by which an organization assesses that the underlying technology infrastructure and support mechanisms are capable of supporting inter-organizational communications, transactions, and collaborations. We describe technology trust as a higher-order construct comprising of transaction (a) confidentiality, (b) integrity, (c) authentication, (d) non-repudiation, (e) access control, (f) availability, and (g) best business practices. We conceptualize technology trust drawing upon the notion of institutional trust, and particularly the dimension of situational normality. We describe how bi-lateral (dyadic) and third-party institutionalized technology-related practices can institute situational normality in B2B electronic commerce. This chapter contributes to the understanding of the conceptual foundations of technology trust by bridging

the gap between technological solutions from an institutional trust perspective (technology trust), interorganizational trust, and value creation in B2B electronic commerce. We conclude by discussing the study's theoretical and managerial implications toward instituting and making use of technology trust.

INTRODUCTION

Business to business (B2B) electronic commerce is notably characterized by the extensive use of information technology (IT). The central role of IT in online interorganizational relationships utterly emphasizes the magnitude of the technology aspects of interfirm transactions. Given the abundance of benefits from employing IT, such as reduced transaction and coordination costs and the reduced cost of using the Internet infrastructure (as opposed to private networks), organizations are better off heavily utilizing Internet-based IT to communicate, transact, and collaborate with suppliers and customers. However, Internet-based technologies stress the importance of security, privacy, and proper technology use since online transactions take place over the widely accessible Internet infrastructure. Managers must recognize and appreciate the dangers, uncertainties, and security concerns associated with the reliance on IT for transactions, and find ways to take advantage of IT to improve interorganizational relationships rather than exposing their organizations and trading partners to excessive risk.

The prominence of trust in B2B electronic commerce has been widely touted by practitioners and academicians alike (Heil, Bennis, & Stephens, 2000; Keen, 2000). There is a consensus that trust is a key success factor in interorganizational relationships (Zaheer, McEvily, & Perrone, 1998), and particularly those taking place online (Pavlou, 2003). Trust is a key element of social capital (Mayer, Schoorman, & Davis, 1995), and it has been related to desirable outcomes such as partner performance, satisfaction, and competitive advantage (Barney & Hansen, 1994; Ganesan, 1994). Whereas the concept of trust has predominantly focused on the trading partner (interorganizational trust) or its representatives (interpersonal trust) (see Zaheer et al., 1998 for a review), a comprehensive conceptualization of trust in B2B electronic commerce should include trust in the technology infrastructure and the underlying control and support mechanisms. Given the extensive reliance on IT and the inherent uncertainties from their use, it becomes necessary to consider the technical dimension of trust. We posit that trust in electronic commerce implicitly incorporates the notion of technology trust, which is described as the subjective probability by which an organization assesses that the underlying technology infrastructure and control mechanisms are capable of supporting interorganizational communications, transactions, and collaborations. Drawing