Antecedents of Information Technology Trust and the Effect of Trust on Perceived Performance Improvement

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ABSTRACT

Trust is a broad and multidimensional concept that has been widely studied in many disciplines, such as psychology, sociology, and management. In addition to interpersonal relations trust also plays a significant role when technology acceptance is concerned. Information technology (IT) is not an exception but there is a growing interest for understanding the mechanisms of trust formation as well as the impacts of technology trust in IT field, too. This research investigates the impact of social, institutional, and technological antecedents on the formation of technology trust as well as the effect of the trust on the perceived performance. The authors specially study the behavior of technologists, people who have technological education and experience and who are currently working in a high-tech organization. Drawing on the existing theoretical literature a conceptual research model with hypotheses is deduced. Data for the study were collected through a survey among IT technologists working in a high-tech organization. The survey data were analyzed using structural equation modeling technique. The findings show that the perception of a user’s skills, power relations, and appropriately utilized organizational structure aid in increasing an individual’s level of technology trust. Moreover, it was found that technology trust plays an important role in increasing an individual’s perception of the performance increase.

Keywords: Disposition to Trust, Information Technology (IT), Organizational Structures, Perceived Performance, Power Relations, Technology Trust, Technology Usability, Trust, User Skills

INTRODUCTION

Information technology (IT) projects are often targeted at reaching a single goal: to increase the performance of employees (Goodhue et al., 2006). This expectation of performance increase can be realized through technology usage. However, before employees introduce the technology fully into their working routines, they undergo a formation of a trusting relationship, commonly labeled as technology trust. Trust, in essence, has a notable effect on the
perceived (or anticipated) performance increase of employees.

Trust is a broad and multi-faceted concept that has been widely studied in many disciplines; consequently, multiple definitions exist for the concept. Some researchers define trust as a somewhat negatively biased situation, where individuals are acting against their rationale when they are willingly becoming vulnerable to their counterparts’ actions (Mishra, 1996). Organizational studies of trust often refer to it as a way to reduce the control of employees and enhance cooperation. For example, Mayer et al. (1995) define trust as “the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party”.

Trust is of substantial value in organizational contexts: it increases organizational performance and commitment, enhances leadership, facilitates cooperation between individuals, teams and departments and reduces the need to monitor the employees (Mayer et al., 1995). Within the realm of economics, trust is seen as a utility, a way to lower the transaction costs of value exchange between two entities (Williamson, 1993) High levels of trust have also contributed to the success of multiple partnerships as well as to enabling strategic organizational operations such as mergers and acquisitions (Dodgson, 1993). When implementing information technology, higher trust levels ultimately lead to increased acceptance of new technology, effectively increasing the probability of conducting a successful IT program (Pavlou & Gefen, 2004). However, technology acceptance is an initial step toward technology trust, as the technological dimension is just one of the three areas affecting technology trust (Misiolek et al., 2002). Social and institutional factors affect technology trust as well and are discussed later in the paper.

For this research we adopt the following definition of technology trust: “technology trust is an individual state involving confident positive expectations about a technology and an institution’s motives offering that technology with respect to oneself in situations entailing risk” (Boon & Holmes, 1991). In a managerial setting, the research of technology trust is significant as it provides directions on concrete activities for increasing the level of technology trust in organizations, thus enhancing the speed of technological implementations and lowering the risk of failure for these projects.

Although technology trust as a concept has been researched before, this paper adds to the current body of knowledge specifically by looking at the trust-to-performance process. We first determine the specific antecedents affecting technology trust and second, propose a conceptual model to outline the relation between technology trust and technology-enabled performance improvements. The underlying theme of the study is that trust lays the foundation for performance effects that are realized through technology use. We study technology trust in a specific context, namely within an organization consisting of information technology professionals.

The objectives of the research are achieved by first theoretically discussing the foundations of technology trust and proposing a research model and selecting research methodology. Then the empirical results are analyzed and their value evaluated. Finally, the theoretical and empirical results of the study and the application of the proposed approach are discussed and the conclusions drawn.

THEORIZING THE RESEARCH MODEL

Technology Trust Foundations

Trusting technology arguably has similarities to social life situations, where an individual needs to make a decision whether to trust their counterpart. The antecedents for technology trust can thus be partly derived from the corresponding literature on social trust that is reviewed in the following sections. Additionally, we have to consider the technological antecedents that
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