

Chapter 7.4

Trust in E-Technologies

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INTRODUCTION

When reflecting the term *trust*, there are two main hypotheses which can be found in most of the literature: First, trust is presented as an amorphous phenomenon, which is difficult to measure empirically (Endress, 2002). Second, the characteristic of trust is rather fragile. Trust as a mediator of social interactions cannot be quantified precisely, it has to be generated and recreated at any time varying with its social context. Volken summarizes this particular connection between trust and the context in which it is created: “Trust is a complex construct with multiple dimensions, and their relative effects on innovative actions may be highly dependent on their respective social context” (Volken, 2002).

In the age of globalization trust is particularly important when one operates in the areas of e-commerce, e-government, and mobile commerce, or develops IT-systems which are touching the interface between technical innovation and its application by users. The latter live and work

in a certain social context in which trust can be established in various ways. This necessarily has consequences for IT-solutions and IT-security which this chapter tries to explore. Giddens (1990) pointed out that “mechanised technologies of communication have dramatically influenced all aspects of globalization since the first introduction of mechanical printing into Europe [Johannes Gutenberg, 16th century]” (p.77).

Without Johannes Gutenberg, there would have been no Reformation, without information technology, there would have been no global information age. Both historical developments, as different as they may be, took place in a certain social context, of which technical innovation became a part. At the same time every society depends on the key ingredient, which is a requirement for social interaction: Trust.

As a reader of the Gutenberg *Bible* trusted that his book is complete and correct, any user of information technology trusts that the applied system functions properly and is reliable. The following questions arise: How does trust which

basically is part of most social interactions fits within information technology using “0” and “1” to enable any sort of interaction? How is trust created, maintained and developed in the information age? Which forms of trust exist and are necessary to operate in an interconnected world?

The chapter will explore these questions by describing current definitions and concepts of trust outside and inside a context of information technology. After exploring the link to concepts of trust in social science and culture a new concept of trust in e-technologies such as e-commerce, e-government, and mobile commerce will be developed. Important trust-building factors such as transparency or participation will be analyzed in order to conceptionally deal with the increasing importance of trust in a virtual world.

BACKGROUND

As a background, an overview is presented about trust from the social science perspective. While trust is defined in various ways, this chapter concentrates on the most relevant definitions influencing e-technologies.

Trust in Social Science

Trust as a concept of social science was firstly written down by Georg Simmel, who differentiates three trust phenomena in the context of the “Philosophy of Money” (Simmel, 1989):

- a. Microlevel (“natural trust” in direct, intuitive social relationships)
- b. Mesolevel (“rational trust” in professionals and the role of a person)
- c. Macrolevel (“systemic trust” in interactions which are mediated through symbolic tokens such as social subsystems, e.g., money)

Trust, its creation, presence and its maintenance extends through all three levels. By focus-

ing on the meso- and macrolevel, this can be outlined as the first impact on the view of trust as a concept for e-technologies. Discussing trust regarding e-technologies means to clarify the relation of trust and virtual systems of information technology (IT systems). Thus, the circle of trusted dependencies is enhanced concerning e-technologies, and this creates sustaining trust of a wider scope considering more subsystems within the macrolevel, such as contracts, system hardware and several types of system software.

Further in this context, Simmel (1992) developed a second distinction of the term *trust* and positioned three hypotheses:

1. **Trust as a general confidence and as a “weak inductive knowledge”:** Trust is the confidence in certain, constant elements in the human life or as a type of unspecific expectations, or alternatively, general hopes. But it has to be distinguished that “trust presupposes awareness of circumstances of risk, whereas confidence does not” (Giddens 1990, p. 31)
2. **Trust as a form of knowledge. Trust in somebody (or something):** Trust is the hypothesis of future behaviour, which is certain enough for establishing practical acting. Trust is the medium state between knowledge and ignorance. The one who has complete knowledge does not need to trust, and the one who does not have any knowledge cannot even develop trust. (Simmel, 1989)
3. **Trust as a feeling. Trust as a belief or faith in somebody. Trust as an inner *unreservedness* towards someone else:** Although trust is always partly determined through feeling and emotion, these aspects have no purpose in the debate about trust and IT-systems. When looking at IT-systems one proceeds from the assumption of an average participant and trust can be treated rationally compare to Giddens and Luhmann. Both

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