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Modeling trust context in networks

Adali S., Springer Publishing Company, Incorporated, New York, NY, 2013. 89 pp. Type: Book (978-1-461470-30-4)

Date Reviewed: Feb 11 2014

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Information and privacy issues are strongly connected with issues of trust. Every human who uses communication must attempt to assure a trustworthy dialog with reliable information exchange. However, trust issues in a digital world are composed of numerous constituent parts, and we have to understand the context to better understand the security, privacy, and information quality issues in modern digital communication networks. The author of this book explores most of these issues of trust from various approaches and in different situations, based on a primary definition of trust as a relationship between the trustor and the trustee. She states that the value of trust could be measured in quantitative or qualitative form and that it strongly depends on the context. Trust is a category of social science, but it is also a category in computing, each with its own context.

The author starts with an introduction and a short description of the mission of the book. The second chapter, "Trust as a Computational Concept," explains some basic approaches for evaluating trust in various trust environments. This is supported by examples of various trust contexts with emphasis on trust context in networks where new digital technologies are involved. Communications networks provide context for trust differently than face-to-face communications do. Thus, trust is contextualized in technology, in information, and in other communicators (individuals, groups, and communities). The author also defines trust in the context of evaluating the elements on which trust depends, such as trust goals, trustworthiness, and especially the environment in which trust is evaluated.

The next chapter, "Trust as a Social and Cognitive Construct," is about trust as a social category as well as a cognitive element on which people base their trust of each other. The author describes this kind of social category with two distinct attributes: the trustworthiness of the trustee and the trustee's competence, both of which have an impact on trust as foundational aspects of social relations. That is why the book separately describes trust in a social context in terms such as trust in social relationships, trust in economic institutions, trust in legal and political institutions, and trust in teams. This last issue is of interest to modern virtual teams working on a global scale in electronic communications networks. The author presents an interesting discussion of trust as belief in trustworthiness, especially the trustworthiness of nonhuman actors, which is of great importance for many technology-based ecosystems on which people's lives and work strongly depend. Further, she decomposes the idea of trust in information into trust in the information source and trust in the information content.

Chapter 4, "Trust in Computing," deals with system and data security. Computing infrastructure, security, and privacy are important components of trustable systems, for which identity management is of crucial importance. Adali characterizes trust in computing with the term "reputation," which becomes more challenging in online systems where people can easily create new identities. Hence, reputation management systems must improve trust by providing useful information about trustees that can be used to form beliefs about their trustworthiness. This discussion should interest online businesses and online e-commerce sites that allow buyers and sellers to interact with each other. The author notes that the goal is to build a trustworthy reputation system that is robust and secure. The chapter explores notions of crowdsourcing in the context of trust, including Wikipedia and open-source software initiatives. This chapter also describes trust as a belief, with an emphasis on social trust involving trust agents and trust in information.

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The final chapter, "Trust Context," summarizes the discussion of trust issues and trust contexts in modern communications networks. The author briefly explains different institutions related to trust, from cultural and organizational institutions to computational tools and network agents. This chapter also considers reputation issues in the online world, where the reliability of a reputation method is the main determinant of how much it can be trusted for a specific action. In general, trust context is recognized as a vital factor in network-based business and social relationships, where trust goals define the trust behavior of parties involved in the communication process. These issues influence trust constructs and beliefs. The book concludes with a discussion of important components of trust context. Given that the definition of trust context does not contain all possible elements of the trust context, some elements are almost unexplainable or unknowable. The author also explores the elements of context that have been studied in social and cognitive psychology, and in computer science and engineering.

I would note that trust and security are two interdependent concepts, and Adali defines them interchangeably with easy-to-follow examples. Many terms are well discussed, with references to current literature; each chapter includes a rich list of references. The term "trust," by its very nature, is complex. When considered in a network environment, it becomes more complex, involving many different issues from social, computer, and information sciences. The author achieves a brilliant equilibrium of various terms in a relatively small volume, making it very easy to read. Readers can easily understand various trust issues and the modeling of trust context elements. Given the number of social and business relationships conducted over communications networks, trust is of crucial interest. I found this book a valuable contribution to the literature in social, computer, and information sciences. It certainly will make interesting reading for researchers, students, and professionals in fields such as online and viral marketing, public relations, news agencies using social networks, and information services.

Reviewer: [F. J. Ruzic](#)

Review #: CR141991



Would you recommend this review? yes no

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