

***Trust and Reputation for Service-Oriented Environments:
Technologies For Building Business Intelligence And Consumer
Confidence***

by Elizabeth Chang, Tharam Dillon, and Farookh Hussain
(Wiley, 2006)

Reviewed by Ross Gagliano

Primarily produced as a graduate text, this book may have wider appeal to a less technical audience. With relatively new applications of primary human interaction, this book addresses important issues relative to the creation of confidence in both human/users (agents) and hardware/software systems (objects).

The two lead authors are experts in e-commerce, having written a previous book on its fundamentals and applications with Henry Chan. As is well known, commerce is the simple economic activity of buying/selling or trading of either goods or services. The concepts of trust and trust relationships underpinning electronic transactions can include notions of trustworthiness value and prediction. Behind all are concepts like reputation and reputation management.

From ordinary experiences with on-line auctions, such as eBay, one may have already encountered trust-building in their so-called "feedback system" that provides on-line information on possible traders. Individuals view the "reputations" of others, express opinions relative to transactions, and generally seek viable commercial partners of known trust and/or similar experiences.

In a second example, one could have also been a target of a more recent Internet scam called "vishing." This "voice phishing" is a ruse in which scammers circulate e-mails, fishing for personal information via telephone responses to a voice mailbox. Such e-mails appear authentic, even sent from major corporations. The question always is: can they be trusted? Obviously, recipients should never submit private information based on gratuitous e-mail requests. A third situation occurs when data, information, or software are obtained from previously unknown Web sites or those of unknown reputation.

Such ideas, notions, and concepts are both complex and dynamic. What this book, one of the first such, does is to propose a reputation ontology, explain trust modelling techniques, and discuss the assignment of trustworthiness values. For those desiring formalisms, the use of postulates, semantic representations, plus tree and

hierarchical diagrams are presented. For the more calculating, there are metrics, scales, and measures, including those statistical. Single and multiple agent examples are developed along with trustworthiness system designs coupled with validation and testing.

One goal of this book is to show how to build trusted partners, networks, and organizational accountability. In turn, there is hope for greater business value, consumer confidence, and possibly higher social trust and reputation. Nonetheless, some computing trust concepts are controversial. Advocates of so-called "trusted computing," as an example, claim that it would result in safer computers, less malware and viruses, and greater end-user reliability. Opponents counter that wholesale trust of the industry is undeserved, placing too much power into the hands of system and software designers and engineers.

Computing security, a sub-field of general security, is concerned with computer usage risks, in addition to physical security. What this means is that platforms have to be designed such that agents (either users or programs) perform only allowable actions. It is also clear that no single technique can produce completely trusted components. In any event, trust remains a social phenomenon, even for the physical sciences where belief is typically built from formal criteria, such as theorems and proofs.

Basically, reputable objects should not be construed as simply "blindly trusted" versus "untrusted." Trusting even a text or image processor to perform faithfully in its next application is not always a sure bet. On the other hand, the power of social processes, as proposed in this book, has been shown to be successful, specifically in no-cost, source-code-available products such as Linux, web tools, and various mark-up languages. In such cases, software objects are tended by volunteers while being scrutinized by an international network of enthusiasts through modern WWW facilities (list-servers, FTP, Usenets, etc.).

Ross Gagliano is a retired professor, having helped found the computer science department at Georgia State University. He previously was a senior researcher at the Georgia Tech Research Institute.

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