

How Understanding Trust Benefits E-Commerce

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The idea of risk is often associated with trust. “Trust signalling is always undermined by the hi-jacking of the signalling systems by untrustworthy operators,” says Kieron O’Hara, from the University of Southampton. He is speaking to the implicit concern with trust: those with malicious intentions may exploit risk. It is because of the possibility of attacks, threats, and risk that the concept of trust emerges. E-commerce is susceptible to those who attempt to hi-jack the signalling system. Practitioners of e-commerce should fully understand the theoretical aspects of trust and its relationship with risk before offering a valuable service. In this paper, I will present the (Mayer, et al., 1995) theoretical model for trustworthiness. The next section will identify three aspects of e-commerce that may qualify it as untrustworthy. The final section will show how practitioners of e-commerce can integrate the theoretical model and learn to value the understanding of trust in the business domain. I conclude that it is important for business and security managers to understand the nexus of e-commerce and trustworthiness before offering a service or implementing a solution.

Introduction

“Trust signalling is always undermined by the hi-jacking of the signalling systems by untrustworthy operators,” says Professor Kieron O’Hara. Signals of trustworthiness can be conveyed by a uniform, professional qualification, or a ritzy business card, for example (O’Hara, 2006). A police officer wears a uniform in order to be identified; so too can a criminal wear a police uniform to be misidentified as an officer. Trust may always be undermined, but the benefits of taking risks can outweigh the costs. O’Hara is describing how trust can be circumvented, but he is also describing perhaps the most salient characteristic of trust, risk. Risk is the possibility of suffering harm and losing something that is valued: “Trust implies uncertainty – and therefore risk,” (O’Hara, 2006). In order to trust, one must recognize the possibility of risk. I trust my friend to submit my paper for me, but I risk the possibility that he will forget to do so: “the antidote to perceived risk is trust,” (Boyd, 2003). More specifically, “Trust is not taking risk per se, but rather it is a willingness to take a risk,” (Mayer, et al., 1995).

To associate trust with risk is critical for e-commerce practitioners. The e-commerce market is indeed growing; in 2003, US retail e-commerce generated \$56 billion, up from \$44.3 billion a year earlier (eMarketer, 2004). Despite the economic growth of e-commerce, many consumers are still concerned that online transactions are untrustworthy. To many, e-commerce is unreliable, untrustworthy, and risky. E-commerce must overcome several obstacles, from reduced social cues to assuring consumers of a website’s security, in order to build trust.

This paper evaluates trust from a theoretical perspective in order to identify lessons for practitioners. It relies upon the (Mayer, et al., 1995) conceptualization of trustworthiness. After describing the theoretical model, I will apply it to e-commerce and identify three obstacles to achieving trust. After identifying the pratfalls of online transactions, I will conclude with a brief list of solutions. The tenor of this paper will focus on O’Hara’s quotation – trust involves perpetual risk. The goal of this paper is to elucidate why security and business managers should evaluate trust from a theoretical perspective.

Theoretical Model

(Mayer, et al., 1995) thoroughly examined the literature on trust and have provided a fine theoretical model and adequate definition: “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,” (Mayer, et al., 1995).

With this working definition of trust in mind, it is important to understand how it is achieved. That is, how does someone who is willing to trust or the “trustor” actually trust the one receiving the trust or the “trustee”? One must be trustworthy in order to gain trust. Trustworthiness is a personal construct in that it operates at the interpersonal level (Covey, 1992). Trust is “a relation between an agent and an object,” and in order for that relationship to work, it takes trustworthiness (O’Hara, 2006). Trustworthiness is what “lubricates social life,” or helps society run more smoothly (Putnam, 2001). (Mayer et al., 1995) describe the characteristics that qualify an individual or institution as trustworthy, thereby creating a theoretical model that one may evaluate e-commerce. The three characteristics are (1) ability, (2) benevolence, and (3) integrity, all of which are signalling systems for trustworthiness.

Ability deals with competence and capability. Experts and critics are often solicited for their opinions and advice because they are competent within their domain. Dr. Sanjay Gupta, the medical correspondent for CNN, for example, often doles out medical advice to millions of viewers. He is trustworthy because he is an acclaimed doctor. (Mayer, et al., 1995) recognize a difference between ability and competence, as ability deals with performing a task-specific process. That is, I have the ability to cook a tasty dinner even though I am not an expert chef like Jamie Oliver. Indeed, trustworthiness is “relative to a task,” (O’Hara, 2006). O’Hara puts forward the following proposition: “I am trustworthy if I claim I will do X under certain conditions, then I will do X if those conditions obtain,” (O’Hara, 2006). In other words, one is in control of one’s own trustworthiness insofar as the claim or task is obtained or completed. Ability is a signalling system because it shows that one is capable, competent, and able to

perform a task or operation.

Benevolence deals with good intentions and kindness. That is, the trustee exhibits a “specific attachment to the trustor,” (Mayer, et al., 1995). Benevolence is different from ability because it speaks to the personal or intimate nature of trustworthiness. This feeling of benevolence can arise from being familiar with the trustee. I feel my peers to be trustworthy not only solely because they are able and competent but I know they have good intentions towards me. My interactions with them over time have shown me their benevolence and compassion. Trustworthiness is “relative to an intention,” (O’Hara, 2006). Benevolence can often be found in cooperation: “If we are cooperating, then I do not have to oversee the subtasks I trust you to do (and mutual trust is bonding),” (O’Hara, 2006). In other words, mutual trust and bonding can lead to benevolent feelings. Benevolence is a signalling system because it connotes a personal bond between the trustor and trustee, which leads to feelings of trustworthiness and ultimately trust.

Finally, integrity deals with honesty and principles. The trustor believes the trustee to be trustworthy if the trustee operates under certain parameters. These parameters can be core values, a mission statement, a code of ethics, or principles, to name a few (McFall, 1987). Certain companies believe in avoiding taxes and relocating to the Cayman Islands or Bermuda. The trustor may see the company or the trustee as shirking its civic duty: a conflict of values arises. It is an even greater conflict if the company lives by a core value that states it will be engaged in the community and demonstrate corporate responsibility. The trustor will not trust the trustee because the trustee, in this case, is violating its core values. Integrity is a signalling system because it connotes the honesty, openness, trustworthiness of both the trustor and trustee.

These three characteristics of trustworthiness lead to “Proposition 2”: “Trust for a trustee will be a function of the trustee’s perceived ability, benevolence, and integrity and of the trustor’s propensity to trust,” (Mayer, et al., 1995). This is not to say that trustworthiness always leads to trust. A trustee like e-Bay could be able, benevolent, and replete with integrity, but the trustor still mistrusts the company. The nexus of trustworthiness and mistrust is known as “opportunity costs,” (O’Hara, 2006). E-commerce practitioners like e-Bay must strive to increase the probability of trust from the trustor by applying Proposition 2 to their operations, products, and services.

Untrustworthiness of E-Commerce

E-commerce consumers have not formed personal and intimate bonds with the shipping clerks or sales consultants of Amazon.com, like they may have at a brick-and-mortar bookshop. This is not to say that websites cannot reinforce more personable trust found at brick and mortar shops. The website Meetup.com brings millions of people together by organizing events: person A can meet person B and then keep up to date with each other by using Meetup.com service (Sander, 2005). The website keeps trust alive by using technology to help organize. Even though Meetup.com is not an example of e-commerce, it shows that technology, namely the Internet, can aid and abet already trusting relationships. It serves as the “sociological superglue” to relationships (Putnam, 2001). This is an important lesson to learn for e-commerce practitio-

ners—technology can reinforce already trusting relationships.

E-commerce often fails to meet Proposition 2. E-commerce is outside the social circle of customers: the customer has very little to evaluate a particular website since the social cues are removed. E-commerce does not always demonstrate ability, benevolence, and integrity – therefore, it has difficulty demonstrating the signalling systems of trustworthiness. I will use three examples to illustrate how e-commerce fails to adhere to Proposition 2. These examples relate to (1) lack of automation, (2) lack of social cues, and (3) lack of assurance. As a result, some “95% of consumers have declined to provide personal information to Web sites,” and 63 percent of these did not do so because “they do not ‘trust’ those collecting the data,” (Hoffman et al., 1999).

Automation helps to increase the likelihood of Proposition 2 and is a signaling system for trustworthiness. Take an e-commerce website that requires laborious efforts from the consumer: too many fields to complete and no automatic verification email for the purchaser. This e-commerce website is demonstrating that (1) it is not able or competent to deal with many fast transactions, (2) there are no signs of benevolence because the user has to spend more time, (3) the website seems unprofessional, untrustworthy, and without integrity. It fails to adhere to Proposition 2. To be sure, it is important that the information is recorded accurately and securely, but one of the primary advantages for e-commerce is that of automation, thereby driving down the transaction cost of an order (Lee, 2003). It is not only a way to demonstrate trustworthiness but a good business practice, playing to the market channel’s advantage. Automation also leads to predictability – an e-commerce website will operate in a particular manner (O’Hara, 2006). Many e-commerce websites do not understand that the “lack of automation really hinders in the efficiency and speed of meeting the customer needs,” (Lee, 2003). To automate the e-commerce system is to signal trustworthiness to the trustor.

Social cues help to increase the likelihood of Proposition 2 and are a signaling system for trustworthiness: “Human trust decisions, however, are also based on affective reactions, which can be triggered by interpersonal cues,” (Riegelsberger, 2003). E-commerce removes the social cues and increases the anonymity for trustors-cum-shoppers (Bargh & McKenna 2003). Take a website that has text-only ordering forms with no options to speak with a real person. This website is (1) demonstrating that it is not able to be personable, (2) there are no signs of benevolence because of reduced social cues, and (3) it seems removed from the knowable world, a world without integrity. Such a website fails not only fails to adhere to Proposition 2 and demonstrate trustworthiness, it is not doing good business. That is, many customers look for interpersonal social cues, and the e-commerce website is failing to meet this desire (Riegelsberger, 2003). Indeed, the Internet medium supposedly removes social and interpersonal cues from “real life” interaction: is it not just a sunk cost of e-commerce? This is not necessarily true, as a solution will be presented later, and e-commerce practitioners should recognize that social cues are a signaling system for trustworthiness. If I can see or hear someone, I gain an understanding of the person albeit a small one. This understanding can be enough to convince me to complete a transaction with the trustee. To increase social cues is to signal trustworthiness to the trustor.

Assurance helps to increase the likelihood of Proposition 2 and is a signalling system for trustworthiness. Consider a university bookstore that has an online ordering system. It wants to send an email to existing customers about discounts on new hardcover biographies. But the bookstore does not use any mechanism to assure customers that it is actually the shop sending the emails and not an impostor. With the litany of reports of online counterfeiting, fraud, and theft – how can the customer really be assured? By not taking the appropriate measures to assure the customer, the bookstore is demonstrating that it is not (1) able to communicate effectively with customers, (2) showing benevolence towards customers (as they needlessly worry), and (3) acting with integrity, as customers may doubt the legitimacy of the emails. It behoves e-commerce practitioners to demonstrate assurance in all operations as it is a signaling system for trustworthiness (Daman, 2006).

Signal Hi-Jacking

Not only do several e-commerce websites fail to adhere to Proposition 2, but even if they introduced new “trustworthy measures,” it would not guarantee total trust on the part of the trustor. That is, O’Hara’s comments now rise to the fore – trust signaling can be undermined by hi-jacking. Malicious users can hi-jack the characteristics of trustworthiness: (1) an expert assurance agent who demonstrates ability, (2) who shows good intentions towards you because he knows you, (3) and works at a well-respected company – can still overcharge and pocket the money. Someone who demonstrates the aforementioned and ostensible signs of trustworthiness can still be untrustworthy: “Once signaling systems are in place they can be forged,” (O’Hara, 2006).

Say the crooked insurance agent is discovered and the public learns of his scam. The trustor will then learn to become more vigilant and less trusting of the agent’s institution; moreover, the trustor will be less willing to send signals to the trustee, in this case, the institution (O’Hara, 2006). If the institution, at some point in the future, wants to solicit private details from the trustor, the trustor will probably think twice about trusting the company. Based on the trustor’s experience with the company, he or she is less inclined to trust. Therefore, if the trustor cannot trust the trustee, and the trustee cannot receive proper, trustworthy signals from the trustor – there is no use in pursuing a “strategy” of trust (O’Hara, 2006). In other words, a company that is not trusted will likely go out of business because customers want to deal with institutions that are trustworthy.

Signal hi-jacking is a recognized and assumed risk of trust. Even though the credit card databases of EasyJet.com or RyanAir.com could be hacked, I still use the website because it is efficient. Moreover, I feel the site is trustworthy because the company is (1) able to sell tickets, (2) benevolent as it informs me of cheap fares, and (3) honest (demonstrating integrity) because I have not experienced any previous breaches of trust. It is a risk every time one uses an e-commerce website, but e-commerce suffers because practitioners do not recognize that lack of automation, lack of social cues, and lack of assurance add to the worries of customers (Lee, 2003). Practitioners must learn how to make up for what e-commerce lacks, knowing full-well that signal hi-jacking will always be a threat.

While practitioners should work diligently to reduce the risk (and signal hi-jacking), it is equally as important to reduce the perceptions of risk for users (McKnight et al., 2002). That is, work towards finding ways to increase automation, social cues, and assurance. While trust may be perpetually susceptible to signal hacking, it is important that practitioners work towards assuring customers that the probability is low.

Lessons and Solutions for Practitioners

The three characteristics of trustworthiness – ability, benevolence, and integrity – are critical to understand for e-commerce practitioners because they create a model for which to strive. One may conduct rigorous quantitative and qualitative analysis on whether these aspects of trustworthiness are associated with the e-commerce company and website. The theoretical model can help to determine areas of concern and improvement. But before an e-commerce company starts to scrutinize the trustworthiness of its operations, it should consider a variety of solutions offered below that can lead to increased automation, social cues, and assurance.

Increased automation will help build trustworthiness for e-commerce practitioners because it will make the service faster, more efficient, and seemingly more reliable. One way to increase automation is to look towards the promises of the “semantic web.” Right now, most web pages are “stupid” in that they simply present data. There is no ostensible way to manipulate and use the information, from sports scores to financial figures (Frauenfelder, 2004). Take the example of a public colloquium occurring on 5 April 2007 listed on the LSE homepage. In order to manipulate the data and integrate it into one’s address book, one must open the calendar and manually insert the information. With the semantic web, one can simply click a button, informing the computer you will attend the colloquium. The information would automatically be inserted into your address book, provide Global Position Satellite (GPS) directions to the event, and inform the ticket office to reserve tickets (Frauenfelder, 2004). The implications for e-commerce are quite significant because transactions will be able to occur more quickly, not to mention kick-start the supply chain. Customers will be able to search in “ordinary language” as opposed to keywords because items will be classified with long descriptions and better explanations (Koprowski, 2003). E-commerce practitioners should look towards introducing semantic web solutions in order to increase automation and bolster trustworthiness.

Increased social and interpersonal will help customers feel more familiar with an e-commerce company. Perhaps this is why e-Bay, the biggest auction website company bought Skype, an internet telephony service, for some \$2.6 billion (Broache, 2005). Sometimes text is not rich enough to describe a particular item. The richer the media – sounds, photos, and videos – the more comfortable a customer may feel with the e-commerce website (Bos et al., 2002). Trustors are familiar with actual dialogue, as it is used on a daily basis. One can listen for insinuation, intonation, and expressiveness in an individual’s voice. In the e-Bay example, internet telephony will give the trustor a greater opportunity to gage the ability, benevolence, and integrity of the trustee. By increasing the social and interpersonal cues, the likelihood of Proposition 2 coming into effect is far greater.

Increased assurance will help customers feel more comfort-

able and secure with an e-commerce company. It will lead to the trustor overcoming feelings of doubt and risk. Take the Amazon.com recommendation system that allows users to suggest, laud, and criticize various publications. One of the problems to such a system, however, is “the reluctance of individuals to reveal preferences in order to find groups of people that share them,” (Huberman et al., 1999). Another pratfall of recommendation system is the “difficulty of convincing potential advice-takers of the credibility and reliability of the recommendations,” (Huberman et al., 1999). A community-wide conference key is suggested to help make the recommendation system as reliable as possible. That is, each member of a certain community, say a deontological philosophers group on Amazon.com, would be in possession of a community key for decrypting messages, recommendations, and advice. Community keys allow for the virtual replication of real-life communities and social life. By having a recommendation system where community members can partake in open, honest, and frank discussion and recommendations, customers are more assured of the relevancy and trustworthiness of information.

Discussion

While it is true that each these solutions can lead to increased trustworthiness, they are still susceptible to signal hi-jacking. Even if an e-commerce website introduces internet telephony or video chat, a malicious user could still hi-jack these signaling systems. What was meant to increase communication and trustworthiness may turn into a new avenue of attack for hi-jackers.

To rid e-commerce from risk is nearly impossible. E-commerce practitioners should concern themselves with reducing the perception of risk and increasing the perception of ability, benevolence, and integrity. It can achieve Proposition 2 by introducing measures or tactics such as semantic web services, internet telephony, or community-key recommendation systems.

Furthermore, brick-and-mortar stores have an advantage of having a physical locale. Customers can envision the store, whether it is in a safe neighbourhood, and the type of people who work there. E-commerce websites are limited to only a name or word such as “Amazon.com” or “Half.com.” Therefore, e-commerce websites must try doubly hard to associate their brands with words and perceptions of trust. An e-commerce website should work towards associating itself with descriptions such as “reliable” and “safe.” E-commerce websites must battle for the perceptions of trustors and customers. They can do so by introducing examples as mentioned earlier.

Conclusion

O’Hara’s remark is accurate in that signals of trust can be hi-jacked. But they have always been susceptible to hi-jack – before the era of e-commerce, and in the age of Democritus. The point is therefore not to attempt the nearly impossible and eliminate risk, but to reduce the concerns of customers. The relevancy and tenor of O’Hara’s remarks have been alluded to throughout this paper: risk is part of trust.

After examining trustworthiness with a theoretical model and

suggesting solutions, it is important to realise where this paper ends: it is critically important for security managers and businesspeople to understand the dimensions of trust. Even if trust is always undermined with the threat of hi-jacking, it is still important for e-commerce practitioners to understand how trust works and how it can benefit e-commerce. Practitioners can work towards reducing the threat of hi-jacking, and then creating the perception of strength among customers and trustors.

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