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Classifying E-Commerce Trust Seals: An Analytical Framework

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Abstract

Trust seals are business assurance service in e-commerce. Vendors apply for trust seals to increase their trustworthiness. In this paper, we classify trust seals in five different categories: (1) comprehensive certificate provider, (2) seller evaluation service, (3) market evaluator, (4) market assurance service, and (5) niche service. We derive the five categories through three steps: (1) reviewing literature, (2) examining e-commerce processes, and (3) reviewing seal providers' documents. Our framework and analytical process can help e-commerce consumer to differentiate different types of seals and inspire seal provider to develop new services. We also identify many research opportunities for academics.

1. Introduction

In this paper we intend to answer the following questions. First, what does trust mean in the context of e-commerce? Second, can we create a simple framework to help people to differentiate the various types of seals? Third, what kinds of seals are currently available to consumers in e-commerce?

To answer our research questions, we proceed as follows: (1) From literature review, we create a theoretical framework (a classification scheme) identifying the role of trust in both traditional markets and electronic commerce. (2) We identify a list of the seals currently available in the United States. (3) We use our framework as an analytical tool to evaluate the seals identified in step 2. (4) Finally, we summarize our findings as a foundation for future research.

The results of the study will benefit both merchants and consumers. The framework used in this paper will help merchants to determine the seals that will be most effective in increasing consumers' trust, thus increasing sales. Our framework will also benefit consumers by helping them to discriminate among available seals. For the seal providers, our framework identifies opportunities for both new seal development and seal policy improvement. This paper will contribute to academics by identifying opportunities and directions for future research.

3. A Process Model to Identify the Sub-dimensions of Trust

Trust is a personal, organizational or mechanical status. It is people's willingness (for human systems) or a contract (for non-human system) to take risks in a relationship. Recently, researchers have recognized that trust is a multi-dimensional construct [20] [21] [22]. One method used to identify the sub-dimensions of trust is to identify the different types of trust-relationship and different risks associated with each type of relationship. For example, Sheppard and Sherman [22] studied the sub-dimensions of trust and developed a model to classify relationships in terms of form and depth. They note that there are four types of relationships: shallow dependency, shallow interdependency, deep dependency and deep interdependency. They also note that there are three types of risks associated with each relationship: (1) the risk of unreliability, (2) the risk of indiscretion, and (3) the risk of poor coordination.

Adopting the same method, we determine that we could develop a classification scheme if we could identify (1) the type of relationship being studied, and (2) the types of risks involved in the relationships. However, there may be many different ways to define the types of relationships and risks. We choose to classify relationships and risk by studying the e-commerce processes.

After reviewing Sheppard and Sherman [22], we adopt their definitions of risks involved in relationships and modify them for the e-commerce setting. We determine that there are essentially two types of risk involved in every trusting relationship: "risk of information disclosure" and "risk of task reliability". The risk of information disclosure is the risk that the trustee will not disclose relevant information fully and accurately. For example, sellers may not fully disclose their privacy policy. The risk of task reliability is the risk that the trustee will not perform the agree-upon tasks. For example, sellers may not deliver quality products or they may not be discrete with the buyer's private information.

Based on the above discussion, we develop Table 1 identifying 16 sub-dimensions of trust. Instead of describing the six possible trust-relationships, we simplify the framework by describing the responsibilities of three trustees, the buyer, the seller, and the market. Furthermore, since the objective of this paper is to help consumers differentiate among various seals, we exclude buyers as one of the interested trustees resulting in two trustees, the seller and the market.

Table 1. The 16 trust sub-dimensions

	Seller	Market
Trustee's Information Disclosure	1. Evaluation Phase	9. Evaluation Phase
	2. Purchasing	10. Purchasing
	3. Order-Fulfillment	11. Order-Fulfillment
	4. After-Sale	12. After-Sale
Trustee's Task Reliability	5. Evaluation Phase	13. Evaluation Phase
	6. Purchasing	14. Purchasing
	7. Order-Fulfillment	15. Order-Fulfillment
	8. After-Sale	16. After-Sale

Column 1 of Table 1 presents the two types of risk involved in e-commerce relationships: risk of information disclosure and risk of task reliability. Column two and three present the buyers' information disclosure risk and task reliability risk for each phase of the market process from the seller and the market respectively.

4. An Exploration Analysis of Current Web Seals

We used Table 1 to analyze the available seals. The unit of analysis in this study is each individual seal. Some companies offer many different seals to cover different interest groups. We treated each seal as an independent unit. We used two methods to identify currently available seals. First, we utilized two popular search engines, google.com and the Microsoft search engine, to find seals. We used two key words: "trust" and "seal", in the queries. All seals identified with country postfix in their URL were excluded. Second, the search results were given to 200 students (both accounting and MIS majors) in the Fall 2001 semester at a large state university. The students were given the opportunity to earn bonus points by identifying additional seals. Table 2 lists all seals identified through this process and will be used as our sample for analysis.

Table 2. A list of popular Web seals

Sponsor	Seal Program
ABAecom	SiteCertain Seal
AICPA	Web Trust
The Council of Better Business Bureaus	BBB online reliability seal
	BBB Online privacy seal
	BBB Online kid's privacy
Better Internet Bureau Association	Quality Assurance
BuzRate.com	BizRate.com seal
Digital Signature Trust (DST)	TrustID Certificate
EPublicEye.com	Web Watch Dog
Entertainment Software rating Board (ESRB)	ESRB Privacy online
GeoTrust	True Site
Internet Content Rating	ICRA Label

Association	
Invisible Hand Software	PrivacyBot
PriceWaterHouseCoopers	The Better Web Programs
Privacy Secure, Inc.	Privacy Secure Seal
Quality Testing Lab	QTL Licensing Program
SafeSerf	SafeSurf Logo
Safe Shopping Network	Tested for Safety Program
The Netcheck Commerce Bureau	Netcheck Membership seal
TRUSTe	Trustee Privacy
	E-Health Program
	Children's Seal Program
	EU Safe Harbor Program
Trustsecure	ICSA Security Certificate
VeriSign	SSL Certificate

Next we used Table 1 as our coding instrument. The three listed authors are the coders. We choose to limit the number of coder involved in the process for validity reason. For coding of latent content, too many coders involved in an early stage research project may result in wrong interpretations of the coding instrument [3, p. 311]. The coders obtain information about each seal by visiting its corresponding Web site. We coded each seal based on its functionalities or features as described in its publicly available documentation, such as FAQ, disclaimers, principles and guidelines, and/or application requirements etc. We used a simple "Yes" or "No" to describe if a certain seal provides assurance of a particular cell in table 1. After each coder completed all his/her evaluations, we compared our notes and identified the differences. We also set certain "rules" to resolve differences in coding (Table 3 is omitted to fit the page limit of this version).

Table 4a Comprehensive Certification Provider

	Seller	Market
Trustee's Information Disclosure	Evaluation Phase	Evaluation Phase
	Purchasing	Purchasing
	Order-Fulfillment	Order-Fulfillment
	After-Sale	After-Sale
Trustee's Task Reliability	Evaluation Phase	Evaluation Phase
	Purchasing	Purchasing
	Order-Fulfillment	Order-Fulfillment
	After-Sale	After-Sale

Table 4b Seller Evaluation Service

	Seller	Market
Trustee's Information Disclosure	Evaluation Phase	Evaluation Phase
	Purchasing	Purchasing
	Order-Fulfillment	Order-Fulfillment
	After-Sale	After-Sale
Trustee's Task Reliability	Evaluation Phase	Evaluation Phase
	Purchasing	Purchasing
	Order-Fulfillment	Order-Fulfillment
	After-Sale	After-Sale

Table 4c Market Evaluators

	Seller	Market
Trustee's Information Disclosure	Evaluation Phase	Evaluation Phase
	Purchasing	Purchasing
	Order-Fulfillment	Order-Fulfillment
	After-Sale	After-Sale
Trustee's Task Reliability	Evaluation Phase	Evaluation Phase
	Purchasing	Purchasing
	Order-Fulfillment	Order-Fulfillment
	After-Sale	After-Sale

Table 4d Market Assurance Service

	Seller	Market
Trustee's Information Disclosure	Evaluation Phase	9. Evaluation Phase
	Purchasing	10. Purchasing
	Order-Fulfillment	Order-Fulfillment
	After-Sale	After-Sale
Trustee's Task Reliability	Evaluation Phase	Evaluation Phase
	Purchasing	Purchasing
	Order-Fulfillment	Order-Fulfillment
	After-Sale	After-Sale

Table 4e Niche Service

	Seller	Market
Trustee's Information Disclosure	Evaluation Phase	Evaluation Phase
	Purchasing	Purchasing
	Order-Fulfillment	Order-Fulfillment
	After-Sale	After-Sale
Trustee's Task Reliability	Evaluation Phase	Evaluation Phase
	Purchasing	Purchasing
	Order-Fulfillment	Order-Fulfillment
	After-Sale	After-Sale

5. Some Preliminary Observations Toward Current Web Seals

A completed coding sheet is presented in available upon request. We classified Internet seals into five basic types (see table 4a to 4e).

We categorized the first type as "Comprehensive Certificate Provider." AICPA's WebTrust seal and PriceWaterhouseCooper's BetterWeb seal fall into this category. Both of these seals provide services similar to ISO9000 certificates that require trustees to document all their business practices and offer certificates after certain auditing procedures. We categorized the second type as "Seller Evaluation Services." Seals in this category include: BBBOnline's Reliability Program, ePublicEye seal, Privacy Secure Seal, Quality Testing Labs' QT Mark, and Netcheck.com evaluation service. This category represents the largest group in our study and provides assurance services about the seller but not the market. The third category includes SafeShoppingNetwork and BizRate.com. We labeled this group "Market Evaluator." This group differs from the previous group by providing certain assurances about market mechanism. Seals falling within this group evaluate task reliability but not

information disclosure. Unfortunately, the current two members of this group are themselves market builders, thus, rendering their assurances suspect.

The fourth category is the "Market Assurance Service" group. The group consists of Digital Signature Trust's Trust ID and VeriSign. Both companies sell either certification authority or Internet security software and services. Strictly speaking, they cannot be classified as Trust Seal since they do not act as third party evaluators. However, they do allow their customers to display their logos (this practice is very similar to the "Intel Inside" logo on many personal computers). This provides name recognition assurances to consumers by displaying the logo.

The last category is the "Niche Service" group. This group includes various privacy seals provided by TRUSTe, ESRB Privacy Seal, TruSecure Seal and ABAecom's SiteCertain Seal. Each of the seals in this group covers only one or two dimensions in our framework. Some of these seals provide even more narrow services targeting a particular industry or a particular interest group.

6. Conclusion

This research is exploratory in nature. The main purpose of this paper is to layout a foundation for future investigation on trust seals by creating a framework against which currently available seals may be evaluated. We identified currently available seals and used our framework to classify the seals into five categories. The categories are determined by the assurances they provide. The five categories are (1) comprehensive certificate provider, (2) seller evaluation service, (3) market evaluator, (4) Market assurance service, and (5) niche service.

Future research in this area could be aimed at answering the following questions. Do customers differentiate trust seals when they are conducting e-commerce activities? If they do, what underlying dimensions are they looking for? Can our framework raise the awareness and increase customers' capability in differentiating trust seals?

Our paper will extend the literature on trust in e-commerce. Currently this line of research is limited. However, the growing e-commerce market makes this line of research extremely valuable. We are sure that our efforts will inject energy to our research community and inspire new development in e-commerce.

References

References are available in the full version of this paper.