

Myth or Reality: Effect of Trust-Promoting Seals in Electronic Markets

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1. Introduction

With the unprecedented growth of the Internet, business-to-consumer (B2C) commerce has grown to vast proportions. However, after years of practice, how to promote consumers' trust towards their storefronts is still the most critical challenge for B2C online merchants (Hoffman and Novak 1996, Jarvenpaa et al. 2000, Kovar et al. 2000). Presently, the main strategy for online B2C merchants is to display trust-promoting seals on their websites. They hope to use these seals provided by some trusted third parties (TTPs) to assure consumers that they are trustworthy online merchants. In this research, we refer to all the signs, logos or seals attached to an online storefront, which aim to promote consumers' trust, as trust-promoting seals.

Do these trust-promoting seal really work? How much do the trust-promoting seals contribute to consumer's willingness to buy (WTB)? Do the seals evenly affect different types of product in electronic markets? Are the seals' influences different across various types of online shoppers? These are the questions we seek to answer in this research.

2. Background and Hypotheses

In current B2C electronic markets, various TTPs have been established to provide trust-related services.¹ If consumers click on the seals provided by the TTPs, they can get the detailed disclosures explaining the services provided by the TTPs. Basically, the seals and their disclosures are designed to assure the consumers that the online transactions at a particular website reflect the high standards for transactions associated with the various seals' principles and criteria.

In research on electronic commerce, trust has been recognized as a critical factor to facilitate online transactions. Stewart (1999) explores trust transferred across hypertext links and from physical to virtual stores, Jarvenpaa et al. (2000) study the consumer's perceptions of trust in an Internet store, and Gefen (2000) shows the important roles of both familiarity and trust for consumers' shopping decisions. Concentrating on WebTrust seal, Kovar et al. (2000) find that consumers who pay more attention to the seal and disclosures or who have been exposed to WebTrust advertising have higher online transaction expectations and a stronger WTB online than their counterparts. In contrast with Kovar et al.'s work, which focuses on one particular seal, we classify trust into five dimensions (Table 1), each of which is represented by one popular trust-promoting seal, and explore whether these seals are effective to promote trust in B2C electronic markets.

¹The TTPs include Trust.e (www.truste.com), WebTrust (www.webtrust.org), VeriSign (www.VeriSign.com), BizRate.com (www.bizrate.com), epubliceye.com (www.epubliceye.com), *BBBOnLine* (www.bbb.org), and America Online (www.AOL.com) and so on.

Using trust-promoting seals to influence consumers' decision making is supported by Petty and Cacioppo (1986)'s Elaboration Likelihood Model of Persuasion (ELM). ELM states that the effect of a persuasive communication on consumers' expectations is decided by the degree to which consumers consider the information provided in the persuasive communication. When consumers shop online, if they notice that a storefront displays a trust-promoting seal, and if the service provided by the seal can exactly solve the consumers' concern, then the seals can affect consumers' decision making. In this research, we examine whether displaying a trust-promoting seal on a storefront can enhance consumers' WTB. Therefore, we have the following hypotheses:

H1: Displaying the Trust.e seal (privacy-related trust-promoting seal) on an online storefront will positively influence its consumers' willingness to buy.

H2: Displaying the VeriSign seal (security-related trust-promoting seal) on an online storefront will positively influence its consumers' willingness to buy.

H3: Displaying the BizRate seal (consumer satisfaction-related trust-promoting seal) on an online storefront will positively influence its consumers' willingness to buy.

H4: Displaying the BBBOnline Reliability Program seal (reliability-related trust-promoting seal) on an online storefront will positively influence its consumers' willingness to buy.

H5: Displaying the AOL Certified Merchant Guarantee seal (insurance/guarantee-related trust-promoting seal) on an online storefront will positively influence its consumers' willingness to buy.

Product characteristics are important factors in consumers' abilities to ascertain the quality of products online, which consequently affect their shopping decisions. De Figueiredo (2000) develops an e-commerce product continuum in which he characterizes products into commodity products (e.g., oil, paper clips), quasi-commodity products (e.g., books, CDs, videos), "look and feel" products (e.g., suits, homes), and "look and feel" products with variable quality (e.g., art). Quality is easiest to judge on the web for commodity products but most difficult to judge for "look and feel" products with variable quality.

Following De Figueiredo (2000)'s analysis, we combine commodity products and quasi-commodity products together, and name it *online commodity products*. Likewise, we combine the other two types together and name it *online "look and feel" products*. We attempt to find how the trust-promoting seals will influence consumers' WTB in terms of different product categories. We have the following hypotheses.

H6: A trust-promoting seal can positively influence consumers' willingness to buy for online commodity products.

H7: A trust-promoting seal can positively influence consumers' willingness to buy for online "look and feel" products.

In addition, two factors that might affect consumers' online trust are also surveyed.

H8: A trust-promoting seal can be more effective to promote trust for online shoppers who have the knowledge of trust-promoting seals than their counterparts.

H9: A trust-promoting seal can be more effective to promote trust for experienced online shoppers than new online shoppers.

3. Methodology

3.1 Subjects

The subjects in this research were 206 business undergraduates enrolled in two American universities. According to the OECD report (1998) and Kotkin's research (1998), online consumers are generally younger and more educated than are conventional consumers, thus undergraduates are good representatives of online shoppers.

3.2 Subjects' Familiarity with the Trust-Promoting Seals

Subjects' familiarity with the trust-promoting seals is shown in Table 2. Of the five seals, VeriSign is the most well known one, while BBBOnline is the least recognized seal.

3.3 Products

We used a total of four types of products in this research. We chose a book and digital camera as commodity products, and a suit and genuine leather chair as "look and feel" products.

3.4 Procedures

Two rounds of questionnaires were distributed in this study. In the first round, a benchmark case for online WTB is investigated. It consists of four parts: 1) basic information about online shopping experiences, 2) questions about online shopping, 3) familiarity with the trust-promoting seals, 4) demographic information. After the subjects finished the first questionnaire, we immediately gave the same subjects the second questionnaire where a trust-promoting seal was added on the unknown store's website. The subjects were asked if they would buy the product from the unknown store with a seal.

4. Results

4.1 Benchmark Case

In the benchmark case, subjects were assumed to buy a book, a digital camera, a suit and a genuine leather chair, and these products were found from a local physical store with a certain price. Then they were asked how likely they would buy these products from a completely unknown online store with a 10% lower price. Results in Table 3 indicate that more than 50% of the subjects had concerns on shopping from an unknown online store even though the prices were 10% cheaper. The WTB for the "look and feel" products in general is lower than that of the commodity products.

4.2 With Seal Case

Table 4 provides the results of the comparison between the WTB under the "with seal case" and the benchmark case. Among the five seals, VeriSign, BBBOnline and AOL Certified Merchant Guarantee significantly and positively influenced the consumers' WTB ($p < 0.01$). Trust.e's effect is also significant at $p < 0.05$. The most

interesting finding is for BizRate that has no significant effect on consumers' WTB. Therefore, hypotheses of H1, H2, H4 and H5 are supported at $p < 0.05$, while hypothesis of H3 is not supported at $p < 0.05$.

4.3 Effect Under Product Category

Other interesting issues we investigate are whether the trust-promoting seals are effective on the two product categories. Book and camera belong to the same category, while suit and chair belong to the other. Table 5 records the comparison results.

According to Table 5, there is a significant enhancement on WTB on both product categories under the VeriSign, BBBOnLine and AOL Certified Merchant Guarantee seals. Therefore, the hypotheses of H6 and H7 under these seals are supported. Trust.e significantly increases the WTB for the "look and feel" products (hypothesis H6 is supported), while not significantly for commodity products (hypothesis H7 is not supported). BizRate's effects on both product categories are insignificant. Therefore, we cannot support the hypotheses H6 and H7 for Bizrate.

4.4 Effect of Seal Familiarity and Prior Shopping Experience

Seal Familiarity and Willingness to Buy: Seal familiarity is defined as the following. Among the five categories of trust seals, if a subject is aware of at least one of the seals in the survey, the subject is defined as "with knowledge of trust-promoting seals" and vice versa. For all seals, the hypothesis of H8 is supported (Table 6), which shows that consumers who are more aware of the trust-promoting seals are more willing to shop online when a significant trust seal is present on the online store.

Online Purchasing Experience: In this part, subjects are divided into two groups: a group with previous online shopping experiences, and the other group without experience. Results show no significant difference between the two groups of consumers. The hypothesis of H9 is not supported.²

5. Discussions and Conclusion

This study examines whether displaying a trust-promoting seal on a storefront can significantly influence consumers' willingness to buy online. This study is the first to classify consumer trust into five dimensions and address each dimension on building trust for online merchants. We believe that this study has practical implications for online merchants to revisit the means to promote trust in online B2C markets. This study discovers that some trust dimensions (e.g., providing insurance or guarantee, security and reliability) are more essential for enhancing consumers' willingness to buy online than others. Moreover, our results show that consumers who are more familiar with the trust-promoting seals are more willing to buy from an unknown storefront bearing a trust-promoting seal than their counterparts. This indicates that the seal providers, the TTPs, should invest more on marketing their seals in electronic markets.

Due to the limitation of empirical research, this research might suffer from some problems not uncommonly seen in exploratory studies. This study is limited to four products due to the length restriction of the survey, and the subjects in this research did not have a financial stake in their shopping decisions since they were asked to

² The table is omitted due to the length restriction of the paper.

imagine purchasing some products rather than really buying the products. Therefore, the limitations might affect the generalization of the research's results.

Future research on trust-promoting seals needs to address the effects of combining different seals on the same online storefront, and to discover the price threshold for a trust-promoting seal.

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Table 1: Seal Functions, Representative Seals and Storefronts with Seals

Dimensions of Trust (Seal Functions)	Representative Seals	Storefronts with Seal
Protecting Privacy	Trust.e	www.oshmans.com www.drugstore.com
Providing Security	VeriSign	www.bigzoo.com www.ashford.com
Demonstrating Consumer Satisfaction	BizRate	www.eastbay.com www.hifi.com
Providing Reliability	BBB <i>OnLine</i> Reliability Program	www.footlocker.com www.cdnw.com
Providing Assurance or Guarantee	AOL Certified Merchant Guarantee	www.hifi.com www.bridalpeople.com

Table 2: Familiarity with Trust-promoting Seals

Seals	Count	Percentage
Trust.e	52	25.24%
VeriSign	89	43.20%
BizRate	32	15.53%
BBB <i>OnLine</i>	25	12.14%
AOL	59	28.64%

Table 3: Benchmark Case: Online Purchasing Activity

Product	Purchasing Percentage	Standard Deviation	Count
Book	41.30%	49.42%	206
Camera	35.51%	48.03%	206
Suit	18.84%	39.25%	206
Chair	25.55%	43.77%	206

Table 4: Comparison between Total WTB under With Seal Case and Benchmark Case

Seals	With Seal Case Purchasing %	Benchmark Case Purchasing %	t-Value	Hypothesis Testing
Trust.e	36.89%	30.25%	1.74*	H1 Supported
VeriSign	40.29%	30.25%	2.60**	H2 Supported
BizRate	33.25%	30.25%	0.79	H3 Not Supported
BBB <i>OnLine</i>	39.68%	30.25%	2.42**	H4 Supported
AOL	43.69%	30.25%	3.39**	H5 Supported

** p < 0.01 * p < 0.05

Table 5: Two Cases Comparison on WTP under two Product Categories

Seals	Categories	With Seal Case	Benchmark Case	t-Value	Hypothesis Testing
Trust.e	Book/camera	44.17%	38.41%	1.33	H6 Not Supported
	Suit/Chair	29.61%	22.10%	1.83*	H7 Supported
VeriSign	Book/camera	48.30%	38.41%	2.23*	H6 Supported
	Suit/Chair	32.28%	22.10%	2.44**	H7 Supported
BizRate	Book/camera	40.78%	38.41%	0.54	H6 Not Supported
	Suit/Chair	25.73%	22.10%	0.90	H7 Not Supported
BBB OnLine	Book/camera	46.36%	38.41%	1.79*	H6 Supported
	Suit/Chair	33.01%	22.10%	2.60**	H7 Supported
AOL	Book/camera	50.97%	38.41%	2.81**	H6 Supported
	Suit/Chair	36.41%	22.10%	3.35**	H7 Supported

** p < 0.01 * p < 0.05

Table 6: The Relationship between Seal Familiarity and Willingness to Buy

Seals	<i>With Knowledge of</i>	<i>Without Knowledge of</i>	t-Value	Hypothesis H8
	<i>Trust-Promoting Seals</i>	<i>Trust-Promoting Seals</i>		
	Purchasing Activity (times)	Purchasing Activity (times)		
Trust.e				
	1.81081	1.353	1.76*	Supported
VeriSign	1.98649	1.294	2.70**	Supported
BizRate	1.77027	1.255	1.99*	Supported
BBB OnLine	1.94595	1.475	1.72*	Supported
AOL	2.09459	1.431	2.48**	Supported

** p < 0.01 * p < 0.05