

Presentation Title:

Investigating consumers' perceptions of security and privacy of e-commerce web sites

Presentation Format:

Presentation

Targeted Audience:

Intermediate to Advanced

Presentation strategy:

Brief overview of existing approaches to security and "online trust" research

3 business case studies

How-to discussion with question and answer, and brainstorming session

Topic Category:

Issues and strategies for experienced usability professionals

Length of Presentation:

90 minutes

System, Product, or Project Focus:

E-commerce

Web

Keywords:

Perception of quality/user satisfaction

Role of usability engineer

Customer experience

Learning objectives:

Attendees will learn how to expand their focus from traditional usability testing and design into investigating how e-commerce customers form impressions of the security and privacy of web sites.

How presentation will be conducted:

The presentation combines traditional lecture and case studies with a brainstorming session on this relatively recent topic of study. There will also be a short "experiment" at the beginning of the talk that will illustrate some of the difficulties of studying consumers' perceptions of security and privacy. Printed hand-outs of the projected slides, a reading list, and the experimental materials will be provided. Participants can contact the author for the results of the "experiment."

Abstract (50 words):

E-commerce sites must address Internet customers' concerns over security and privacy. In addition to designing sites for ease of use, usability specialists can expand their role by understanding how to study consumers' perceptions of security, privacy, and trust. Case studies, methodologies, and recommendations for effective interface design are discussed.

DETAILED DESCRIPTION OF CONTENT, WITH SESSION TIMELINE

Project Background (5 minutes)

Online sales offerings from e-commerce firms have the potential of fundamentally changing the way consumers purchase goods and services. However, the potential of e-commerce has not been fulfilled due, in part, to consumers' perceptions of the risks involved in conducting business online. Surveys consistently show that consumers associate a great deal of risk with online financial transactions. Forrester Research found that young consumers' primary reason (59%) for not conducting business online was the concern about the use of credit cards online, higher even than concerns about ease of use [5]. Additionally, 43% cited concerns over the privacy of the data they provide to web sites. For the purposes of this research, we define *security* as a company's ability to prevent unauthorized access to customer data and financial accounts. *Privacy* depends on the degree to which a company shares customer data after it has been collected and secured.

Role of the Usability Specialist (5 minutes)

Security is typically handled on project site designs by technical security specialists; privacy statements and policies are often handled by legal and public affairs specialists. Usability specialists can help address customers' concerns over the security and privacy of a site in a number of unique ways:

- Strategically, as part of a total solution for security and privacy
- By knowing the existing research on security, privacy, and trust
- By knowing how to study human responses to technology or service
- By the ability to design workable solutions to issues caused by customers' concerns with security and privacy

Audience Participation: a Quick-hit study of Privacy Statements and Procedures (20 minutes)

The audience will participate in a review of two sites' privacy statements that illustrates several issues with the visual presentation of privacy policies. After reviewing the statements, they will complete short questionnaires designed to elicit their comprehension of and subjective satisfaction with the privacy statements. The design of the study will be reviewed during audience participation.

Review of Current Approaches to Studying Security and Privacy (15 minutes)

There are few studies that deal directly with customers' online perceptions of the security and privacy of e-commerce sites. Most studies deal with the broader question of "building trust" or relationships with companies through an online channel (Cheskin/Sapient, 1999; Nielsen Norman). This presentation reviews the major pieces of security-related customer research, including the Cheskin/Sapient model of trust building, and the Nielsen Norman Group's study of online trust. The findings are discussed in terms of design considerations for e-commerce sites.

- Cheskin/Sapient (1999) model of trust in "eCommerce Trust Study."
- Nielsen et al (2000) "E-commerce user experience" from Nielsen Norman Group
- Fogg et al. (2001). "What makes a web site credible?" SIGCHI'01.

There are a number of methodological difficulties with studying perceptions of security and privacy. ISO 9421 defines the usability of a product or site as the efficiency, effectiveness and satisfaction associated with using a product by a given set of users, their tasks, and the context of use. Applying the same definition to perceptions of security and privacy, the following difficulties become apparent:

- Statements of what constitutes users' "tasks" that ensure security
- The difficulty of reproducing users' contexts

- The difficulty of setting valid “test objectives”
- Legal and ethical considerations in producing incidents that elicit customers’ feelings about security or privacy
- Legal and ethical considerations

Case Studies: 3 Experiments on Perceptions of Security and/or Privacy (25 minutes)

This paper describes three studies that were conducted to elicit consumers’ perceptions of the security and privacy of e-commerce sites. All studies are discussed in terms of the theoretical and methodological issues presented above. The audience will be asked to participate in a discussion of methodological issues and possible further directions for research during audience participation.

Case study 1: Security experts’ perceptions of security and privacy of e-commerce sites. Describes how security experts (such as those who consult on project teams) view online security and privacy. The study was qualitative, and produced the baseline against which ordinary consumers’ awareness of security features could be compared.

Case study 2: Consumers’ perceptions of security and privacy of e-commerce sites. A qualitative study describes how ordinary users view online security and privacy. Comparisons are made between ordinary users’ views and security experts, and the implications for web design and working on projects with experts.

Case study 3: A transaction model of consumers’ perceptions of e-commerce security. An experimental test of consumers’ responses to security on three e-commerce sites. This was a controlled experiment; the data were analyzed using multiple regression. The independent variables, selected after analysis of the two earlier qualitative studies, were site layout, navigation, security text, 3rd party endorsements and the presence of security features. The dependent variable was perception of security.

Audience Participation: Questions, Answers, and Other Experiences (20 minutes)

The presenter will facilitate a brainstorming session on approaches to addressing customers’ concerns about security and privacy. The results of the introductory “privacy experiment” and the notes taken during this session will be organized and made available to members of the audience by contacting the presenter. The following questions will initiate discussion.

- Questions about the 3 studies? How can these studies be followed up?
- Questions about the "experiment" at the beginning of the presentation? What are the problems with studying perceptions of privacy this way?
- How are you made aware of customers’ security or privacy concerns? What issues do customers raise?
- How have you addressed security or privacy issues? With site design? With company procedures?

DESCRIPTION OF MATERIALS (HANDOUTS)

Participants will receive handouts of the slides, a comprehensive bibliography of trust-related research, and the materials used in the “experiment.” Participants will be able to receive the results of the experiment by contacting the presenter.