

## Key dimensions of business-to-consumer web sites

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### Abstract

The rapid growth in the electronic commerce over the Internet has fuelled predictions and speculations about what makes a business-to-consumer (B2C) web site effective. Yet, there are very few empirical studies that examine this issue. We examined the key characteristics of a B2C web site as perceived by online consumers. Based on a questionnaire survey of 214 online shoppers, we empirically derived four key dimensions of B2C web sites: *information content*, *design*, *security*, and *privacy*. Though all these dimensions seem to have an impact on the online purchase intent of consumers, security and privacy were found to have greater effect on the purchase intent of consumers. The implications of the findings for online merchants are discussed. © 2002 Elsevier Science B.V. All rights reserved.

**Keywords:** Business-to-consumer web sites; Online shopping; Web design; Security; Privacy

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### 1. Introduction

There has been a phenomenal growth in business-to-consumer (B2C) electronic commerce since the commercialization of the Internet in early 1990s. The global nature of the Internet, its vast reach and different interactive capabilities have made it an important marketing and trading medium for many firms. There is a drastic increase in the number of organizations that are using the web for marketing, promoting, and transacting products and services with consumers. In 1999, organizations exchanged US\$ 20 billion worth products and services through B2C web sites. This number is predicted to be as high as US\$ 184 billion in the year 2004 [19].

Apart from organizations, there seems to be rapid adoption of the Internet by consumers for various purposes, including information search and online shopping. A study by the Georgia Institute of Technology [33] reported that about 40% of the respondents indicated shopping as their primary use of web. Another study by Ernst & Young found that over 39 million individuals shopped online in 1998, with more than 50% of them spending US\$ 500 or more on their online purchases [20]. The rise in online shopping is affecting the traditional retail sales in that the growth in offline sales over the next decade is expected to slow down from 5 to 3% a year. The increase in B2C commerce has made several firms look for new ways to understand online shopping behavior in order to attract and retain consumers.

While there seems to be an understanding that online shopping behavior is fundamentally different from that in a conventional retail environment [46], empirical research in this area is sparse. There is little

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documentation on consumer perception of what makes an effective B2C web site. A number of frameworks and guidelines have been proposed by industry experts and consultants for building and designing B2C shopping sites, but there is no unified view on its key characteristics. Our research is intended to help addressing these gaps.

In this paper, we identify the key dimensions of B2C sites as perceived by online consumers. We operationally define a B2C web site as a site on the world wide web through which a consumer can purchase a product or service. By our definition, they include online shopping sites set up by *infomediaries*, brick-and-mortar merchants, and virtual malls. Based on a survey of 214 shoppers, we empirically develop four key dimensions of these web sites. Our study examined the main characteristics that consumers look for, identified the underlying dimensions, and assessed their relative importance. By this, our study identified factors that were critical to the success of a B2C site.

## 2. Background

### 2.1. Literature review

Business articles, popular press, white papers and reports by various vendors and consultants dominate the literature in this area. Many articles are based on experiences of one or a few organizations, and give a descriptive account of organizational experiences in deploying B2C web sites [11,17,54,55]. Articles have also focused on reporting existing status of B2C e-commerce [15,25,56], forecasting future trends, and providing general guidelines for designing and managing B2C web sites [7,21,42]. While various characteristics have been touted as being effective, there is no unified view of the critical dimensions that an effective B2C web site should possess.

A number of researchers have examined the use of the Internet for commercial purposes. Liu et al. [37] examined the web sites of Fortune 500 companies to identify how they were using the web for interacting with their customers. They found that 95% use web sites to provide information on their products and services, and about 26% do some kind of electronic transactions. Ho examined 1800 web sites from varied

industries across multiple nations. Hoffman et al. [26] provided six categories for classifying commercial web sites, namely: online storefront, Internet presence, content, mall, incentive site, and search agent. Spiller and Lohse [53] focused on online shopping stores and classified them into five categories: superstores, promotional stores, sales stores, one-page stores, and product listings. Jones and Biasiotto [32] examined the web sites of 160 retailers and described how store-based retailers use the Internet. Most of these studies have been descriptive in nature, trying to describe the existing state of affairs and industry practices.

Another group of researchers attempted to develop frameworks and models for B2C e-commerce. Angerhn and Meyer [3] examined the banking industry to offer some guidelines for developing Internet strategies. Nour and Fadlalla [44] provided a framework for formulating web-based marketing strategies. Johnson, Hyde and Ambrose [31] developed a socio-technical framework for assessing the benefits of electronic retailing. Lohse and Spiller [38] reviewed user interface features in electronic shopping and made several recommendations for developing a B2C web site. Liu and Arnett [36] proposed a framework for designing quality B2C web sites. Hoffman and Novak [27] analyzed a few case studies to recommend several measures for improving B2C web sites. Patrick and Joe [45] extended the conventional model of consumer buying behavior to online purchases, and made recommendations for improving online commerce. These studies have been prescriptive in nature, offering several useful guidelines for conducting B2C e-commerce. But, they have been largely theoretical, based on a few cases, and they have not been empirically tested for their validity.

Most studies have either adopted a technical or organizational approach to studying B2C e-commerce. Those adopting the first focus on technology related issues, adopting a point of view of technical executives [49]. Those following an organizational approach focus on top management concerns about aligning e-commerce strategy with business strategy [22,57]. In contrast, we seek to study B2C e-commerce from a consumerist perspective as recommended by Ho. In spite of a sound technical architecture, and a formal e-commerce strategy derived from business strategy, a B2C web site will not be effective if it

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