Evolution of Web-Based Shopping Systems: Characteristics and Strategies

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ABSTRACT

This article offers a theoretical analysis of evolutionary processes in WBSS strategies. For that purpose, we propose a research model that shows strategy patterns. Based upon the model, we identified several types of strategies. In our research model, WBSS are classified into four types: (1) general-direct-sales (GDS); (2) general-intermediary-sales (GIS); (3) specialized-direct-sales (SDS); and (4) specialized-intermediary-sales (SIS). On the basis of these four categories of WBSS, we analyze the characteristics of WBSS and suggest five evolution strategies for WBSS, which have implications for both theory and practice. Amazon.com’s strategic movements, such as product line expansion through alliance and acquisition, provide an exemplary case of the evolution of WBSS strategy. We expect that this research will serve as a guide for Internet businesses and as a catalyst for new research agendas relevant to Web-based shopping and electronic commerce.

Keywords: strategy; Web-based shopping systems (WBSS)

INTRODUCTION

E-commerce has been actively diffused on the basis of advanced Internet technologies, enlarging its sphere of utilization and the scale of the global electronic market, radically (Feeny, 2001; Looney & Chatterjee, 2002). The most well-known Internet business models are the so-called dot-coms, which have adopted several types of WBSS applications (Kim & Galliers, 2004, 2006; Porter, 2001). Dot-coms are located around the world and are pursuing a variety of opportunities as global marketers, interacting with global customers and businesses through the Internet (Howcroft, 2001; Rifkin & Kurtzman, 2002; Worthington & Boyes, 2001). However, early in 2000, many dot-com companies collapsed. The lesson learned is that making money on the Internet is
still not easy, which makes it necessary to create new ways of doing business (Gulati & Garino, 2000; Holzwarth, Janiszewski, & Neumann, 2006; Paper, Pedersen, & Mulbery, 2003). Even though many dot-com companies have disappeared and competition is getting severe, the diffusion of Web-based shopping businesses is continuous, increasing in both the number of customers and the volume of business (Kim, Galliers, & Yang, 2005).

The aim of this paper is to address what WBSS must do to survive and prosper continuously. We insist that the appropriate evolution strategy can be one of the most critical factors. To verify our premise, we classify four types of WBSS models, analyze the characteristics of each WBSS model, and attempt to address the evolutionary path of each WBSS strategy. We show the case of Amazon.com’s evolutionary path as an example to demonstrate our theory. Thus, we expect this study to serve as a useful guide for researchers to build theoretical e-commerce models and for practitioners to make plans for their Internet businesses.

LITERATURE REVIEW

Web-Based Shopping in E-Commerce

According to Arlitt, Krishnamurthy, and Rolia (2001), Web-based shopping aims to personalize online shopping to provide global interactive business, customer convenience, and global market efficiency, which implies that Web-based shopping belongs to the business-to-consumer (B2C) e-commerce business model. As of yet, there is no agreed upon terminology for Web-based shopping (Van Slyke, Comunale, & Belanger, 2002). There are, however, many terms in use, which include Internet mall, virtual mall, cyber mall, electronic mall, virtual storefront, online storefront, online store, online shopping mall, electronic shopping mall, Internet shopping mall, electronic shopping systems, cyber mall systems, and WBSS. Generally, WBSS are described as Internet-based shopping systems for selling and buying products, information, and services; and they are classified by transaction patterns (Arlitt et al., 2001), which include e-tailers such as the virtual merchant, clicks and bricks; manufacturer direct; and the market creator. Therefore, we limit the scope of this research to B2C e-commerce.

Web-Based Shopping Systems

WBSS have been researched from two viewpoints: business and technical. Studies focusing on the business aspects explored the phenomenon of Internet business through Web sites, online stores, and virtual markets as a limited concept of WBSS (Heijden, 2003; Nour & Fadlalla, 2000). Spiller and Lohse (1998) identified five different types of Internet retail stores: (1) super stores, (2) promotional store fronts, (3) plain sales stores, (4) one page stores, and (5) product listings. These are classified by size, type of services, and interface quality. However, this classification system does not consider the technical aspects of the Internet.

Nour and Fadlalla (2000) also classified Internet-based virtual markets according to two principal categories: product type and delivery mode. They identified four distinct Internet-based virtual markets: (1) electronic publishing and software, (2) electronic teleservices, (3) digitally enabled merchandising, and (4) digitally enabled services. However, this is a broad conceptual model for virtual markets rather than a model of WBSS. This research, therefore, seems somewhat limited in explaining the taxonomy and the evolution of WBSS. Torkzadeh and Dhillon (2002) measured factors that influence the success of Internet commerce. They suggested that the relative strength of shopping convenience and ecological issues are fundamental objectives. Recently, Heijden (2003) investigated an extension of the technology acceptance model (TAM) to explain the individual acceptance and usage of a Dutch generic portal Web site.

Several studies explored the technical aspects of WBSS, including scalability, network traffic, architecture, and virtual reality. Arlitt et al. (2001) investigated the issues affecting the performance and scalability of WBSS. They found that personalization and robots can have
a significant impact on scalability. Their study was one of the first to adopt the terminology of WBSS. Choi, Choi, Park, and Kim (1998) examined the issue of reducing the volume of network traffic in the cyber mall system. They also suggested that the basic architecture of the cyber mall system consists of four major technical components: (1) the cyber mall creator, (2) the cyber mall server, (3) the cyber mall player, and (4) the WWW server. They argued that the increasing demands for virtual reality are placing excessive strain on the current network volume. Yet, earlier research by Baty and Lee (1995) proposed a functional architecture of electronic shopping systems to promote comparison and contrast between product differentiations. Table 1 summarizes the previous research.

To summarize, most studies focused on a limited view of WBSS and considered WBSS only as a static system, ignoring WBSS as an evolving system in dealing with environmental and organizational change. To understand the general characteristics of WBSS, it is necessary to consider them as dynamic systems that evolve corresponding to changes encountered. The strategic and evolutionary paths of WBSS can provide information that has been neglected in previous WBSS studies. Therefore, this research attempts to develop a WBSS classification model and provide strategic planning recommendations for each type of WBSS.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Author(s)</th>
<th>Research Domain</th>
<th>Insight and Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business aspect</td>
<td>Heijden (2003)</td>
<td>Web sites</td>
<td>Investigates an extension of TAM to explain the individual acceptance and usage of Web sites</td>
</tr>
<tr>
<td>Business aspect</td>
<td>Torkzadeh and Dhillon (2002)</td>
<td>Internet commerce</td>
<td>Measures factors that influence the success of Internet commerce</td>
</tr>
<tr>
<td>Business aspect</td>
<td>Spiller and Lohse (1998)</td>
<td>Internet retail store</td>
<td>Identifies five different Internet retail stores, which overlap with each online store group</td>
</tr>
<tr>
<td>Technical aspect</td>
<td>Arlitt et al. (2001)</td>
<td>Web-based shopping system</td>
<td>Examines the issues affecting the performance and scalability of WBSS</td>
</tr>
<tr>
<td>Technical aspect</td>
<td>Choi et al. (1998)</td>
<td>Cyber mall system, portal</td>
<td>Investigates the issue of reducing the volume of network traffic in the cyber mall system</td>
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<tr>
<td>Technical aspect</td>
<td>Baty and Lee (1995)</td>
<td>Electronic shopping system</td>
<td>Provides architecture of electronic shopping systems to promote comparison and contrast between product differentiations</td>
</tr>
</tbody>
</table>
METHODOLOGY
For the methodology of this research, we did a two-stage research approach: conceptual analysis and the use of a focus group. In the conceptual analysis, we developed the theoretical research model and verified the model using the focus group.

Conceptual Analysis
According to Piercy and Cravens (1995), marketing planning should integrate the type of product and the approach to generating sales as the key enterprise process. As a global business medium, it would appear helpful to classify various types of WBSS applications, therefore, by product type and sales type. As a business channel, WBSS supports two sales types between the seller and the customer. One is direct sales, in which the WBSS is directly responsible for the guarantee of quality and delivery of products or services (Ranchhod & Gurau, 1999). In the other type, indirect sales, the WBSS relays business transactions between the manufacturer, merchant, distributor, and consumer (Kim et al., 2005).

Many dot-com companies such as Amazon.com and Dell are directly responsible for the products sold on their WBSS, while still many others such as eBay.com, in the role of intermediary, is indirectly responsible for sales products. Therefore, we infer that the sales types of WBSS are classified into two types: direct sales and indirect sales, as seen in Figure 1.

Another distinguishing factor of a WBSS is the type of product being sold. There are vertical products and horizontal products. Vertical industry product and unified group image products are two types of vertical products. Vertical industry products are defined as the products that have a vertical relationship in an industry, such as auto parts, tires, and automobile accessories. Unified group image products are defined as products that can create synergy effects even though they belong to different industries. Examples of unified group image products are movies and movie-related toys; beer and baby diapers; and ski and golf equipment. In contrast to these vertical products, horizontal products are defined as two or more industrial products that are not unified into a group. This type of sales attracts customers by the variety of products.

In order to gain meaningful insight into classifying different product types sold by WBSS, this study explores the products sold by some well-known dot-com companies. For example, Dell.com and Amazon.com sell products directly to global customers without any intermediaries. Dell.com handles only a vertically related product line of computers and computer accessories, and Amazon.com carries unified group image products that have synergy effects with books, such as CDs and software. In this paper, these kinds of product lines will be referred to as vertical products. On the other hand, Walmart.com carries a variety of products that do not have any related synergy effects. Therefore, these are referred to as horizontal products. From the aforementioned facts, we are able to infer that the product types sold on WBSS are divided into two groups: vertical product and horizontal product, as outlined in Table 2.

On the basis of the product and the sales type of WBSS, a classification model of WBSS can be developed (Table 3). In the model, the vertical axis displays the product type and the horizontal axis displays the sales type. This research thereby proposes a model that classifies WBSS into the following types: (1) SDS, (2) GDS, (3) SIS, and (4) GIS. However, not all WBSS conform to these four types: Hybrids are possible, for example. Nonetheless, this model serves primarily as a basic model of WBSS for analytical purposes. Characteristics of each type of WBSS, with exemplary cases and their strategic evolutionary paths, are introduced in detail in the fourth and fifth, respectively.

Use of Focus Group
To verify the types of WBSS and to gain useful insight related to the strategic evolutionary path, we organized a focus group. Members of the group were chosen according to expertise and experience on the recommendation of one of the authors, who is a professor at the London

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Figure 1. The sales type of WBSS

Table 2. Product type of WBSS

<table>
<thead>
<tr>
<th>Type</th>
<th>Definition</th>
<th>Examples</th>
</tr>
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<tbody>
<tr>
<td>Vertical product</td>
<td>Vertical industry product</td>
<td>Computer, computer accessories, and computer software</td>
</tr>
<tr>
<td></td>
<td>Unified group image product</td>
<td>Beer and baby diapers in convenience stores, and ski and golf equipment</td>
</tr>
<tr>
<td>Horizontal product</td>
<td>More than two industrial products and products that are not unified into a group</td>
<td>Department store products</td>
</tr>
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</table>
School of Economics. The group consisted of 11 experts who worked in London-area, dot-com companies as CEOs, CIOs, administrators, system developers, and Web masters. Focus groups usually fare better when conducted with relatively homogeneous strangers. However, since the concept of WBSS should be considered from several aspects, the group consists of diversified members. Before the focus group meeting, we e-mailed the participants the documents that explained the major objectives of the meeting and the questions about the classification of WBSS, the evolutionary paths, and the correspondence between strategies and evolutionary paths. In the meeting, we presented our model, which consisted of the classification of the WBSS and the evolutionary strategies for each type. After that, we discussed these topics in an informal brainstorming procedure. The experts shared their opinions and made suggestions for our research model. The recorded session continued for a duration of 3 hours. After the meeting, we analyzed the discussions and comments and summarized the contents of the meeting. We visited the experts individually seven times in total to obtain clearer information.

The comments we obtained can be summarized as follows: It is logically possible for a WBSS to switch from a horizontal to a vertical product type. However, on a realistic basis, this switching can be regarded as a failing of the Web-based shopping business. This is because customers are already accustomed to horizontal products, so they may have a negative image when the company suddenly reduces the type of products sold to a vertical product. In this case, as experts suggested, dot-com companies would do better to maintain the WBSS as it is, or close the site and then make a new WBSS for vertical product sales. Furthermore, it is not realistic to shift from indirect sales to direct sales because of the greater difficulty guaranteeing the quality and delivery for the sales product.

**CHARACTERISTICS OF THE FOUR TYPES OF WBSS**

We analyzed the characteristics of the four categories of WBSS based on eight analysis domains: (1) seller/WBSS relationship, (2) number of sellers in WBSS, (3) product type, (4) responsibility of guarantee for the product sold, (5) comparable firms, (6) e-commerce strength, and (7) recommended strategy (Looney & Chatterjee, 2002; Molenaar, 2002; Piercy & Cravens, 1995). These domains explain the reasons for such classifications of WBSS.

First, the relationship between the seller and the WBSS is examined. For example, some sellers are owners of the WBSS, or lessees or brokers within the WBSS (Looney & Chatterjee, 2002). Our second focus is on the number of sellers (Piercy & Cravens, 1995), the third on product type, and the fourth on responsibility of guarantee for the product sold (Molenaar, 2002). For the fifth, based on these four analyses, an appropriate WBSS type is suggested. Next, we illustrate the strength of the four types of WBSS (Looney & Chatterjee, 2002). Finally, an attempt is made to analyze the strategic paths each WBSS follows, in accordance with the strategic options suggested by Rackoff, Wiseman, and Ullrich (1985). In their theory...
of strategic thrusts, five major competitive moves (defensive or offensive) are introduced: (1) differentiation, (2) low cost, (3) innovation, (4) growth, and (5) alliance.

While this theory is based on Porter's (1980) competitive strategy model, Rackoff et al. (1985) expanded the original generic strategies with two additional strategies: growth and alliance. They also addressed the strategic use of IS to uncover opportunities related to supplier, customer, and competitor. Since a WBSS is an IS that can be strategically utilized to deliver more value to customers and suppliers and to achieve a competitive advantage over competitors, we believe the theory of strategic thrusts can explain the strategic paths of WBSS properly. According to the analysis domains defined previously, detailed characteristics of the four types of WBSS are investigated (with four dot-com company cases).

General-Direct Sales (GDS)
The GDS type is applicable to direct sales and horizontal products. This type uses the WBSS to sell many products that are identical to those of an actual department store. Examples of GDS are Buy.com and Overstock.com. In this type, the owner of the WBSS is the only seller, selling several kinds of products to multiple buyers in the world. The GDS type is therefore directly responsible for the guarantee of the product sold. The strength of the GDS type is that it provides a cyber warehouse that needs less initial investment expense and fewer staffing requirements in comparison to actual department stores. Therefore, the GDS type cannot only make high profits due to a reduction in maintenance and other costs, but it can also solve traffic and parking problems, because customers do not need to leave their home to go shopping.

WBSS of this type are in keen competition with each other. Therefore, a differentiation strategy would be well-matched with a GDS type to gain a competitive advantage through differentiation of service or products, in comparison to other competitor WBSS. Detailed explanations follow.

Example 1: Overstock.com
Overstock.com is an online closeout store selling excess inventory through the Internet including bed-and-bath goods; home decor; kitchenware; watches; jewelry; electronics and computers; sporting goods; and apparel and designer accessories, among other products. Overstock.com offers manufacturers, distributors, and other retailers an alternative sales channel for liquidating their inventory. Overstock.com is a GDS WBSS because it sells general merchandise to the customers.

Example 2: Buy.com
Buy.com is a cyber department store, which means that it does not have any physical shops and it sells several kinds of products that are identical to those of an actual department store. The product prices in this category are cheap because goods can be sold directly to the customer without a salesperson, and intermediaries such as suppliers can be cut out. In doing so, Buy.com can reduce the transaction costs of selling products. In addition, Buy.com provides one-to-one marketing based on customer management databases that store information to analyze customers' needs and preferences. Moreover, it carries out differentiation strategies such as a "Bill Me Later" payment option, quick delivery, membership management, and a variety of other services such as BuyMagazine. "Bill Me Later" is a payment option that provides customers with the flexibility to purchase without using their credit card.

General-Intermediary Sales (GIS)
The general-intermediary type of WBSS is suitable for indirect sales and horizontal products. This type includes many shops such as book stores, computer shops, gift shops, wine stores, and sports stores. There are many sellers dealing in several types of products for a variety of customers in the GIS type of WBSS. These sellers are lessees within the GIS. Thus, the GIS itself has an indirect responsibility for products sold because individual sellers within the GIS are directly responsible for the products. This type of WBSS provides a strategic opportunity.
to small and medium-sized enterprises (SMEs), which are faced with a shortage of funds, human resources, and technical expertise in comparison to larger companies. This is because this type of WBSS allows relatively easy and low-cost entry of SMEs into Web-based shopping business areas. The strength of the GIS type of WBSS is that it provides various cyber malls that customers can choose from according to their needs and preferences. This kind of selective buying can serve as a major attraction to customers, as compared to other types of WBSS. Other types of WBSS cannot establish the variety of shops nor provide the range of products that the GIS type can, due to limited capability such as systems management, operating costs, and human resources. Therefore, GIS has a competitive advantage over other types of WBSS, through its ability to provide a diversity of products, high quality service, and many kinds of shops. Thus, the most suitable strategy for the GIS would appear to be a growth strategy. WBSS in these categories include Yahoo! Shopping, Amazon.com, and Pricegrabber.com. Yahoo! Shopping and Amazon.com lease cyber store space under the WBSS to many individual stores. Therefore, these WBSS have multiple sellers who directly sell a variety of products. They can be regarded as online marketplace providers, which create space for sellers and buyers to gather sellers and buyers. Pricegrabber.com is explained next as a type of GIS WBSS.

Example 1: PriceGrabber.com
PriceGrabber.com is a leading e-commerce company that helps businesses participate in WBSS. Based on its full suite of e-commerce solutions, PriceGrabber.com claims that it helps customers and merchants safely and easily compare prices and allows them to buy and sell merchandise online. The PriceGrabber.com WBSS provides millions of products and services from more than 40,000 merchants. Customers can rapidly and efficiently search the variety of products by comparative shopping functions on the PriceGrabber.com WBSS. It not only supports technology and outsourcing services to retailers, manufacturers, and other businesses, but also launches and manages the WBSS on their behalf. Shoppers can purchase desired products and services from merchants located around the world. The major strategic option of PriceGrabber.com focuses on the global community. By pursuing strategic alliances and partnerships in other regions of the world, PriceGrabber.com is hoping to accelerate its goal of becoming a pre-eminent Internet business service provider worldwide.

Example 2: Yahoo! Shopping
Yahoo! Shopping is another example of a GIS WBSS. It is a cyber mall with many lessees that handle a variety of products. Products offered by individual stores are tied to the Yahoo search engine, and reviews compiled by its massive user base are also listed. Consumers on Yahoo! Shopping can visit a retailer’s store site directly or through the search result of the Yahoo search engine. The Yahoo! Shopping WBSS takes care of billings and charges commissions on the purchases made through the retailers, who then ship the goods to the consumers.

Specialized-Direct Sales (SDS)
The SDS type is a specialized WBSS dealing with direct sales and vertical products. The seller is identical to the owner of the SDS WBSS. Thus, the seller is a single seller as well as an owner of the SDS type of WBSS. As a result, the SDS itself bears direct responsibility for the product sold. This type of WBSS provides opportunities for global businesses to manufacturing companies and smaller shops, which have limited capital and business resources. For example, manufacturing companies can sell products directly to the customer without any intermediary. Also, this WBSS type can help smaller shops compete with giant corporations because physical size is not an important factor in determining market strength. The strength of the SDS type lies in its ability to provide a specialized cyber shop. Organizations that have limited resources can efficiently focus their capabilities on selling a specialized vertical product. The initial stage of Dell.com is a major example of this type of application. The SDS type needs to concentrate
on a cost strategy since it is necessary to maintain lower prices for specialized products in comparison to prices listed on WBSS that sell various kinds of products. Through the lowered cost of selling products, this kind of WBSS will have a competitive advantage against general types of WBSS. Other examples in this category are online financial institutions such as PayPal.com, esurance.com, and Egg-online.co.uk. They provide specialized products in direct sale mode through the Internet. They can provide financing at a lower cost. This is the strength of these WBSS. Detailed examples of SDS are presented next.

**Example 1: Dell.com**

Dell.com is one of the best examples of the specialized direct sales type of WBSS. Dell.com sells computer equipment directly to its customers on the WBSS. Dell.com sold more than $50 million in PC products per day through its WBSS (Dell Computer Timeline, 2004). The company expects to handle half of all its business, ranging from customer inquiries to orders and follow-up services, through the SDS type of WBSS. The advantages of the Dell.com model are claimed to include near-zero inventory; less risk of obsolescence; more customized state-of-the-art products; and a favorable cash flow (Bharati & Chaudhury, 2004; Kraemer, Dedrick, & Yamashiro, 2000).

**Example 2: PayPal.com**

PayPal provides an online money transaction service to individuals and businesses. Buyers can tie any of their existing banking services (e.g., credit card, debit card, or bank account) into their PayPal account and pay for their purchases from online stores. On the other hand, PayPal allows sellers to accept credit cards, debit cards, and bank account payments from buyers in exchange for the transaction fee. PayPal also provides about 5% average yield rate for their account balances, which is higher than the usual bank deposit. As characteristics of SDS WBSS, this unique middleman service for individual or business online transactions is the specialization of PayPal, which has direct control of its service.

**Specialized-Intermediary Sales (SIS)**

This type of WBSS sells vertical products indirectly. The SIS type of WBSS can be thought of as a basic level of a virtual organization that links people, assets, and ideas to create and distribute products and service (Sadeh & Lee, 2003). This is because buyers and sellers can negotiate and trade products, services, and information in real time, based on a SIS shopping architecture. As seen in the case of Fastparts.com, there are many sellers selling vertical products, within SIS. These sellers take on the role of a broker. Thus, the SIS type itself has an indirect responsibility for the product sold, because individual sellers within the SIS type of WBSS are directly responsible for the product guarantee. The SIS architecture offers a significant opportunity for auction markets, in particular, and acts as an intermediary between seller and buyer. Therefore, the SIS type needs to be kept up-to-date to provide the most recent data on products and services because companies may want to access the latest information related to their market. The strength of the SIS type of WBSS is that it plays the role of a cyber agent that is able to support business-to-business e-commerce. Its role as cyber agent between businesses is a basic form of virtual organization because the key attribute of a virtual organization is strategic alliances or partnering (Introna, 2001). The successful evolution of this type of WBSS will depend on alliances and tight coordination with various WBSS. Therefore, an alliance strategy is well matched with this type of WBSS in order to gain a competitive advantage because firms can negotiate directly with each other and trade products and services with other types of WBSS. Examples in these categories include online travel agency Web sites such as Orbitz.com, Expedia.com, and Travelocity.com. These WBSS mediate airline and hotel reservation sales. Multiple sellers are involved, and products and services are sold indirectly. Since many sellers are involved in
the WBSS, auction is the more suitable form, and it is usually aligned with airline and hotel companies. Fastparts.com is another example of a SIS WBSS. Detailed explanations follow.

**Example 1: Expedia.com**
Through its WBSS, Expedia.com provides direct access to a broad selection of travel industry companies offering products and services that include airline tickets, hotel reservations, car rental, and cruises. Working with a number of internationally recognized airline, hotel, cruise, and rental car brands, Expedia.com provides reservation services. This makes Expedia a specialized intermediary in the WBSS travel industry.

**Example 2: Fastparts.com**
Fastparts.com provides an Internet-based trading exchange and marketplace for the electronics manufacturing and assembly industry. Fastparts.com has sold $140 billion in electronic parts and hundreds of millions of dollars in manufacturing equipment. In addition, FastParts.com periodically offers various inventories to sell its members' products on Internet auctions. Auctions are pre-announced to all members, and bidding is generally open for 2 or 3 days. Though anyone can use the FastParts.com to access information on parts, price, and availability, the actual bidding, buying, or selling of parts requires membership. There is no charge to become a member. All members must agree to abide by the FastParts.com operating rules and protocols.

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**Table 4. A taxonomy of WBSS**

<table>
<thead>
<tr>
<th>Analysis Domain</th>
<th>Types of WBSS</th>
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<tr>
<td></td>
<td>GDS</td>
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<tr>
<td>Seller</td>
<td>Owner</td>
</tr>
<tr>
<td>Seller number</td>
<td>Single</td>
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<tr>
<td>Product type</td>
<td>Horizontal</td>
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<tr>
<td>Guarantee of product sold</td>
<td>Direct</td>
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<tr>
<td>Comparable firm</td>
<td>Department store</td>
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<tr>
<td>Strength</td>
<td>Cyber warehouse</td>
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<tr>
<td>Strategy type</td>
<td>Differentiation</td>
</tr>
<tr>
<td>Similar business model</td>
<td>Catalog-merchant</td>
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<tr>
<td>Example</td>
<td>Buy.com</td>
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In this section, we have analyzed the major characteristics of the four types of WBSS, utilizing appropriate examples from practice. As a result of this analysis, specific characteristics are synthesized in Table 4.

As shown in Table 4, the four kinds of WBSS have different characteristics, each having its own strengths and weaknesses as an enabler of new business. As such, the development of new business processes, strategic planning, and system architectures should be necessary for success. The characteristics of the four categories of WBSS provide insight for researchers investigating Web-based shopping business and potentially helpful guidelines for practitioners seeking ways to gain sustainable advantages over their e-business competitors.

**EVOLUTIONARY PATHS OF WBSS AS STRATEGIC PLANNING**

**Review of Evolutionary Path**

Organizations such as dot-com companies need to continuously improve the functionality of their WBSS in order to survive and progress in the Web-based shopping business world (Pinker, Seidmann, & Foster, 2002; Rifkin & Kurtzman, 2002). Therefore, these organizations must consider multiple strategies to find the best ways to expand.

Based on our observations of evolutionary paths of WBSS, we can suggest a model of strategic planning for WBSS to provide useful guidelines for practitioners and for academic research. While it appears unprofitable to shift from horizontal to vertical products or from indirect to direct sales type, a shift from vertical to horizontal products or from direct to indirect sales type can be a successful evolutionary path for WBSS.

The theory of strategic thrusts (Rackoff et al., 1985) provides an explanation for the success of these evolutionary paths. There are five strategic thrusts proposed in this theory: (1) differentiation, (2) low cost, (3) innovation, (4) growth, and (5) alliance.

Among the five strategic thrusts, growth, and alliance are the most useful in explaining evolutionary paths of WBSS. When a WBSS evolves from dealing with vertical product types to horizontal product types (SDS → GDS or SIS → GIS), the evolutionary path can be seen as a growth strategy through which the WBSS achieves a competitive advantage by volume or geographical expansion, backward or forward integration, or product-line or entry diversification. On the other hand, when a WBSS evolves from selling products directly to selling products indirectly (SDS → SIS or GDS → GIS), this path can be seen as an alliance strategy through which a WBSS achieves competitive advantage by forging marketing agreements, forming joint ventures, or making acquisitions of other WBSS.

While growth and alliance strategies can be viewed as the major thrusts, differentiation, cost, and innovation strategies can be achieved in the context of the growth and alliance strategy thrusts. For example, a WBSS may expand its product type to differentiate itself from other WBSS. Amazon.com started as bookstore WBSS and expanded its product lines to toys and other goods (SDS → GDS) sold directly and indirectly through alliances. Amazon.com achieved cost leadership because it utilized an existing infrastructure to handle additional product types (cost). It also allows a customer to buy many types of products without leaving the WBSS, making it a one-stop shopping place. This convenience of broad selection differentiates Amazon.com from Barnesandnoble.com, an SDS WBSS (differentiation). When both product and sales types change (SDS → GIS), we need an innovation strategy to support rapid change of the WBSS structure caused by product and sale type expansions (Innovation).

As seen in Figure 2, we suggest five evolutionary paths of strategy planning for WBSS: (1) from SDS to GDS, (2) from SDS to SIS, (3) from SDS to GIS, (4) from GDS to GIS, and (5) from SIS to GIS. A detailed explanation of each path follows.
Evolutionary Path from SDS to GDS
This evolutionary path implies that the organization expands its vertical product type into horizontal products. The case of Amazon.com is one of the best examples. Initially, Amazon.com sold vertical products—books. Subsequently, it has diversified its range to include products such as CDs, software, and the like. This strategy option can reduce the initial risk of WBSS investment. This is because organizations can initially build the SDS type of WBSS based on a vertical product type and then easily expand the product type into a horizontal product type. Therefore, this may be an effective strategy for small- to medium-sized firms.

Evolutionary Path from SDS to SIS
This strategic option is suitable for special businesses of small to medium size. For example, in the case of flower selling, no one shop can cover an entire country. In a situation like this, the owner of the WBSS constructs a countrywide chain for flower selling and entrusts a district flower shop with the delivery and guarantee of quality for the sales product. However, before shops can be admitted into the partnership, they must be carefully reviewed by the company managing the WBSS. This process can directly affect the reliance of the customer on this type of WBSS. Major businesses suitable for this type of strategic planning are furniture, clothes, real estate, books, tourist bureaus, stationary, computers, and software. Through this strategic planning, businesses of small to medium size can strengthen national or global business power. However, this strategic option might need considerable investment and time for advertising and publicizing to establish a critical mass-scale WBSS.

Evolutionary Path from SDS to GIS
Though the starting point is the same as the previous strategy, the strategic direction is different. SDS shifts from a vertical cyber shop to a horizontal cyber mall, as well as from vertical to horizontal product types. In the final stage of this shift, an organization rents out shops in the cyber mall to businesses that want to provide products or services via a WBSS. Throughout this process, organizations can shift from the SDS type to the GIS type of WBSS. This approach can be well matched with venture businesses (e.g., finding new business models related to e-commerce). This is because venture businesses initially implement the SDS type of WBSS, consisting of a vertical product such as software or CDs. After this, they increase the number of cyber shops and products for sale. However, not all venture businesses can adopt this strategy because of the risk associated with the heavy investment required.
Evolutionary Path from GDS to GIS

The GDS type of WBSS is similar to an actual department store. Similarly, it is difficult to supply all the products a customer may wish to purchase. Therefore, it is an effective strategy to entrust the selling of certain products to other specialized sellers. Based on this strategy, organizations can concentrate their core competence on best-selling products, carrying out the sales of other products through other vendors within its WBSS. Through this process, a GDS type can shift to a GIS type, which has various cyber shops and sells horizontal products. It is essential, however, that the quality of products or services supplied by these other sellers is strictly maintained by this kind of GIS.

Evolutionary Path from SIS to GIS

Organizations can carry out the SIS to GIS evolutionary path more easily than others because they can simply add product types for sale within the same WBSS. At this time, it is a better approach to add a product type that is closely related to the current product type of SIS. Based on this strategy, organizations can aim at arriving at a similar level as Amazon.com, which is one example of the GIS type. With regards to its responsibility for products sold, an IT/telecommunication company carrying out Web-based shopping business on its WBSS seems to be best suited for this strategic approach. This is because this sort of company can easily switch from vertical to horizontal product types.

EXEMPLARY CASE OF STRATEGY: AMAZON.COM

Founded as an online bookstore in July 1995, Amazon.com is one of the most prominent Internet retailers. Amazon.com has expanded its product lines to include music; electronics; health and beauty products; kitchen and housewares; tools; toys; videos; and services such as auctions, 1-Click ordering, and zShops (Felson & Williamson, 2001).

There are two reasons for focusing on Amazon.com in this study. One is that Amazon.com is an excellent example of a WBSS starting as a SDS type and expanding to other types of WBSS in our taxonomy. The other is that Amazon.com has announced its major strategic movements (e.g., strategic alliances and acquisitions) publicly on its Web page. Thus, it is possible to follow its strategic planning clearly, as shown in Figure 2.

Amazon.com has expanded its product line through a series of alliances, which exemplifies the alliance strategic thrust (Rackoff et al., 1985), and through the acquisitions of providers of a variety of products, which exemplifies the growth strategic thrust (Rackoff et al., 1985). Acquisitions usually require the removal of redundant operations and functionalities, while alliances usually keep the partners’ business operations and entities. Examining Amazon.com’s strategic movements, we analyze its strategic planning of WBSS in this section.

Evolutionary Path from SDS to GDS

This evolutionary path implies that the WBSS expands its sales of vertical products type to sales of horizontal products. The case of Amazon.com is one of the best examples. Initially Amazon.com sold vertical products—books. Subsequently, it has diversified its range to include products such as CDs, and software. This strategy option can reduce the initial risk of WBSS investment. This is because organizations can initially build the SDS type of WBSS based on a vertical product type, and then can easily expand the product type into a horizontal group.

Evolutionary Path from SDS to SIS

In April 2001, Amazon.com announced its alliance with Borders Group, one of the largest book superstores, to provide the e-commerce platform needed to re-launch Borders.com as a co-branded Web site. This is one of the most significant strategic movements of Amazon.com for the evolution from SDS to SIS because Bor-
ders.com deals with the same product types as Amazon.com and the products of Borders.com are not sold directly through Amazon.com.

Other examples for this strategic path include Amazon.com’s expansion to similar products such as audio books and electronic books.4 Through the alliance with Audible.com on May, 2000, Amazon.com expanded its spoken audio content and had more than 4,700 audio books and speeches, lectures, and other audible materials (e.g., audio files for newspaper articles). This alliance gives Amazon.com a variety of book-related products while Audible.com has a better platform for audio service.

It also launched an electronic bookstore through the strategic alliance with Microsoft in August, 2000. Microsoft provides a customized Amazon.com version of Microsoft Reader, giving consumers the ability to purchase and download eBook titles directly from Amazon.com. (www.microsoft.com/presspass/press/2000/Aug00/Aug00AmazonPR.mspx, 2000)

**Evolutionary Path from SDS to GIS**

This type of strategic movement was achieved through alliances with or acquisition of other WBSSs. For Amazon.com, these alliances brought more variety of product types, which means more potential customers with different buying needs. For other alliance partners, alliances brought powerful and proven marketing channels because the name value and recognition of Amazon.com is strong and people on the Internet visit Amazon.com frequently. These visitors have more chances to find products through Amazon.com than on the individual alliance partner’s WBSS.

One of the early efforts on the path from SDS to GIS was the fulfillment agreement with Toys “R” Us in August, 2000 and Target store alliance in September, 2001. Later, Amazon.com continued the path along with its alliance with Drugstore.com in October, 2005 and the acquisition of Shopbop.com in February, 2006. For smaller merchants, Amazon launched zShops’ e-commerce platform in 1999 to allow individual sellers to open their own shops under the roof of Amazon.com. These are Amazon’s efforts to provide a one-stop, online shopping experience by expanding special direct sales to general indirect sales. Other major movements of Amazon.com are its alliance with Toysrus.com in August, 2000, to create a co-branded toy and video games store, its alliance with Ofoto in October, 2000 to provide information, products, and service for cameras and photos, and its alliances with AT&T, Sprint PCS, and Voicestream Wireless in November, 2000 for wireless phones and service.

**Evolutionary Path from GDS to GIS**

After becoming a GDS WBSS with direct sales of horizontal products such as books, pharmaceutical products, and pet products, Amazon.com expanded its product line by allowing other WBSSs to join its platform to sell the same type of products. This represented indirect sales of similar horizontal products already sold by Amazon.com. In this case, Amazon.com becomes an e-marketplace where many products are sold from many sellers in one single market place. Not only does Amazon.com allow Borders.com to sell books, CDs, and movies, it also allows virtually all categories of products (Table 5) to be sold through numerous WBSS, off-line retailers and even individuals.

Products are sold and shipped through these varying sources. The only part of the transaction that Amazon.com is involved in is information listing and payment on which a commission for each transaction is based.

**DISCUSSION AND CONCLUSION**

WBSS are spreading very rapidly across national boundaries. From groceries to department stores, from SMEs to large firms, and from young organizations to well-established organizations, a growing number of companies are taking advantage of WBSS by selling products, services, and information. WBSS not only increase the ability of organizations to trade with customers, but they also offer firms...
Table 5. Strategic path of Amazon.com (SCCI, 2006)

<table>
<thead>
<tr>
<th>Amazon.com WBSS Product Line Expansion</th>
<th>Strategic Planning of Amazon.com WBSS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Date</strong></td>
<td><strong>Event</strong></td>
</tr>
<tr>
<td>1995 July</td>
<td>Amazon.com sells first book</td>
</tr>
<tr>
<td>1999 July</td>
<td>Opens consumer electronics, and toys &amp; games stores</td>
</tr>
<tr>
<td>1999 Sept.</td>
<td>Launches zShops</td>
</tr>
<tr>
<td>2000 Aug.</td>
<td>Announces Toys “R” Us alliance</td>
</tr>
</tbody>
</table>

a new opportunity to reach millions of consumers worldwide. WBSS also have the potential to radically change the way businesses interact with their customers. However, many WBSS are disappearing from the Internet, so organizations are struggling to find new strategies in order to survive in the world of e-commerce (Arlitt et al., 2001; Lumpkin, Droge, & Dess, 2002; Van Slyke & Belanger, 2004). In order to provide meaningful guidelines for such a situation, we have presented a taxonomy of four types of WBSS. On the basis of four types of WBSS, this study presents five evolutionary paths for strategic planning: (1) from SDS to GDS, (2) from SDS to SIS, (3) from SDS to GIS, (4) from GDS to GIS, and (5) from SIS to GIS. As a consequence of the discussion so far, Table 6 presents the characteristics of the five types of strategic planning.

As seen in Table 6, each of the five evolutionary paths has its associated strengths and weaknesses, which require shrewd consideration by potential adopters before practical application. Although we believe that the WBSS strategic planning presented in this paper is a fundamental concept, evolutionary paths of each taxonomy category could prove useful in advancing WBSS, in providing guidelines into new business opportunities, and in providing academic insights for further WBSS research. Their practical application seems to depend on organizational circumstances, considering the whole organizational capability to determine the most appropriate option. The discussion in this paper is an on-going study of how we can extend and apply the concept of WBSS strategic planning. The model of WBSS strategic planning suggested in this paper can be a useful guideline for organizations seeking the best way to advance their WBSS, for achieving continuous competitive advantages, and surviving in a global e-commerce environment.

The limited number of analyzed cases may be a weakness of this paper. However we are hopeful that this paper will provide researchers and practitioners with both a detailed understanding of WBSS and a theoretical base for further research of Web-based shopping businesses and e-commerce.
### Table 6. Overall strategic planning of WBSS

<table>
<thead>
<tr>
<th>Types of Strategic Planning</th>
<th>Strategic Approach</th>
<th>Strength</th>
<th>Suitable Firm</th>
<th>Customer</th>
<th>Supplier</th>
<th>Competitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDS  V  GDS</td>
<td>* Vertical product ⇒ Horizontal product</td>
<td>• Lower initial investment &amp; risk</td>
<td>• SME • Shop</td>
<td>Extend the scope of core customers' purchase</td>
<td>Diversify the suppliers</td>
<td>Growth, Differentiation, Cost</td>
</tr>
<tr>
<td>SDS  V  SIS</td>
<td>* Direct sales ⇒ Indirect sales</td>
<td>• Partnership</td>
<td>• Specialized small-medium size business</td>
<td>Focus on existing customers</td>
<td>Focus on existing suppliers or just extend the scope a little</td>
<td>Alliance, Cost, Differentiation</td>
</tr>
<tr>
<td>SDS  V  GIS</td>
<td>* Direct sales ⇒ Indirect sales</td>
<td>• WBSS provider</td>
<td>• Venture business</td>
<td>Resources needed for customers and suppliers strategies</td>
<td>Need resources both customers and suppliers strategies</td>
<td>Innovation</td>
</tr>
<tr>
<td>GDS  V  GIS</td>
<td>* Direct sales ⇒ Indirect sales</td>
<td>• Global intermediary</td>
<td>• IT/telecommunications company</td>
<td>Use current customer strategies</td>
<td>Emphasize the supplier and supply chain management</td>
<td>Alliance, Cost, Differentiation</td>
</tr>
<tr>
<td>SIS  V  GIS</td>
<td>* Vertical product ⇒ Horizontal product</td>
<td>• Strengthening core competence</td>
<td>• Department store</td>
<td>Extend the scope of core customers' purchase</td>
<td>Similar to strategy SDS  V  SIS Diversify the suppliers</td>
<td>Growth, Differentiation, Cost</td>
</tr>
</tbody>
</table>

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### REFERENCES


**ENDNOTES**

1 These can be considered complementary goods

2 These are classical examples of products that have been found to have synergy effects.

3 Since Amazon.com started as SDS, the SIS→GIS evolutionary path is not applicable.

4 These product expansions might be viewed as SDS to GIS path if we regard audio books or electronic books as separate types of product from different industries. Due to the expansion that occurred through the alliance, this is labeled as an evolutionary path from direct sales to indirect sales.

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