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Towards Successful E-Business Strategies: A Hierarchy of Three Management Models

Although only few managers deny the potential of e-businesses, many are struggling with the question how their company can best exploit the Internet. Managers need tools that guide them in their quest for effective applications. In this paper, we present three models that provide structure to this search process. Model development was guided by two requirements: the focus of each model should be on delivering superior customer value, and the models should correspond to models managers are familiar with (e.g., process oriented). The Strategic Internet Applications Model (SIAM) details that e-business strategies can focus on current customers, new customers, the product, or the position within the business network. Companies may decide to customise products or services, or to redefine their role within the business network. The Customer Interaction Cycle (CIC) describes the interaction process between a supplier and a customer, and highlights instances where a supplier can provide added value. The third model is the ADOF model, an acronym for Accessibility, Design, Offer, and Fulfillment. This model embraces the metaphor of a funnel, built up of four sequential rings. The model postulates that the degree of operational success of Web sites can be managed by optimizing the combination of the four rings in the funnel.

Keywords: e-business, e-commerce, management support, new business

Introduction

For more than a decade now, both managers and management scientists have been fascinated by the commercial potential of the Internet. The Internet has the potential to change forever both the reach and depth of marketing activities. The new medium seems to be able to break the trade-

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off retailers traditionally had to make between the number of customers they could reach and the richness of the information they could exchange with customers (Christensen and Tedlow 2000). It also enables marketers to observe consumer purchase processes in much more detail. In the era of mass marketing only information about the sales of products was available, direct marketing enabled marketers to monitor the purchases of individual customers, but Internet marketing provides also information about how customers make purchase decisions.

The question of course is when and how to apply the Internet. Some analysts have explored the potential of the Internet for different categories of products. Peterson et al. (1997) distinguished between search goods and experience goods, and Kiang et al. (2000) considered the potential of product customisation as the most important factor in determining the suitability of the Internet for tangible products. Others analyzed the relation between online and offline activities and concluded that integration is very difficult and sometimes even undesirable for established organizations (e.g., Christensen and Overdorf 2000; Gulati and Garino 2000). Indeed, a number of large, mostly US-based companies organized their online activities in separate organizational units. Separation of the mother organization gives the ability to speed up the decision-making process, to maintain flexibility, to create an entrepreneurial culture, to attract quality management, and to tap into the vast pool of capital available for Internet start-ups (Gulati and Garino 2000). It took some time, and a fascinating crash at stock markets, before it was realized that the Internet is a tool and not a strategy, and that organizational separation could undermine companies' ability to gain competitive advantages (Porter 2001). In early 2000 there was much speculation about an IPO of Walmart.com, but by the summer of 2001 Wal-Mart regained full control of Walmart.com, Kmart of BlueLight.com, and Staples of Staples.com, while Peapod, the well-known innovator of home-delivery groceries, was acquired by the Dutch retailer Ahold.

Integration with bricks-and-mortar operations makes it easier to deal with the downsides of e-commerce, including issues such as the social benefits of shopping, the inability to touch and feel merchandise, the lack of human contact, payment security, privacy concerns, and inadequate procedures for fulfillment and returning products. As a consequence, companies are recognizing that success will go to those who can design and execute bricks-and-clicks strategies that bridge the physical and the virtual worlds (Gulati and Garino 2000). Porter (2001) set the tone in this new era, where integration and synergy are the key words.

Although each failure has its own specific causes, an important underlying reason is the lack of knowledge of how to successfully transform an analog business into an electronic business. Web sites have been

described as a 'relatively unattractive collection of electronic catalogs' (Alba et al. 1997) lacking clear objectives (Berthon et al. 1996). Organizations were driven more by their perceptions of the Internet than any cool-headed consideration of its value to the firm (McBride 1997). Parsons et al. (1998) analyzed nearly hundred Web sites of Fortune 500 consumer marketing companies and concluded that most sites are uninspiring and fall far short of the potential of interactive media. Dutta and Segev (1999) analyzed 120 sites of the Fortune Global 500 list and found that about two-third of the surveyed companies are simply treating the Internet as a publishing medium. They too conclude that most companies are doing little to exploit the unique potential of the Internet. To guide managers through e-business decision-making processes they need models that enable them to evaluate current Web presence and proposed Web investments. Marketing managers need to understand how the Web can be used to develop and market offerings that will satisfy customer needs (Hoffman and Novak 1996).

In this paper, we propose a hierarchy of three models to support e-business decision making. Managers can use these models as guidelines in their quest for effective Web applications. To enhance both management understanding and acceptance, the three models will be presented according to the well-known distinction of Anthony (1965) in three levels of management decision-making (strategic, tactical and operational decisions). At the first level the *Strategic Internet Applications Model* (SIAM) details that Internet applications can focus on current customers, new customers, the distribution channel, or the product. It is a strategic choice, for example, to restructure the distribution channel (e.g., desintermediation), or to offer customised products or services (since the consequences are not limited to marketing and sales, but often require a redesign of other business processes, such as production and logistics). The *Customer Interaction Cycle* (CIC) is the second level in the hierarchy. Based on the strategic choices, the Customer Interaction Cycle assists managers in determining how to increase customer value by means of Web applications. For example, the move from standardized products to customised products increases the complexity of the buying process. A Web site can provide tools to assist the customer in making purchase decisions. The CIC model describes the interaction process between a supplier and a customer and highlights instances where a supplier can provide added value. The third level of the hierarchy of Web models comprises of the *ADOF model*. ADOF is an acronym for *Accessibility, Design, Offer,* and *Fulfillment*. This model highlights the factors that determine the operational success of a Web site. Also based on a customer perspective, the model embraces the metaphor of a funnel, built up of four sequential rings. Web sites can have many visitors (or hits), crucial for success, however, is the number of satisfied and loyal Web customers. Given the high acquisition

costs online, customer loyalty is more important than ever (e.g., Hanson 2000; Reichheld and Schefter 2000). Potential loyal Web customers can get lost at each ring. The model postulates that the degree of operational success of a Web site can be managed by optimizing the combination of the four rings in the funnel.

This paper is structured as follows. The next section provides an overview of the short history of the Internet and the changing management focus, from amazing technology to improving business processes. The following three sections discuss the three proposed e-business models, the Strategic Internet Applications Model (SIAM), the Customer Interaction Cycle (CIC) and the ADOF model (Accessibility, Design, Offer, and Fulfillment). The section Management Implications then discusses how the proposed models can guide managers in exploiting the potential benefits of e-business. The paper ends with a short summary of the major conclusions of this study.

Changing Internet Focus

For marketing managers, the Internet is a new technology and like other new technologies (from the steam machine to the telephone), its introduction followed a path that can be characterized by the terms hype, business as usual, and business as unusual (see figure 1). In the first phase, the focus was on the new, amazing Internet technology. In the years 1994-1995 the popular (business) press created a real Internet hype. The future would be radically different from the current, let alone the past. The potential of the Internet was explained by its technological capabilities. Managers were told on radio, television, and newspapers that the Internet was a global medium, fast and cheap, connecting anyone with anything by means of a multi-media environment in which they could communicate directly with their customers. Shops at the electronic highway would be open 24 hours a day, seven days a week for customers from all over the world, at hardly any expense (e.g., Newsweek 1995, Time 1995).

The second phase is labeled as 'business as usual'. Managers realize that today's world is not radically different from yesterday's, however it includes a new tool that enables them to do the same things better, faster, and cheaper. The potential of the Internet is translated into an understanding of which functions or activities in a company could benefit from the Internet. An example of such a 'business as usual' model is Angehrn's (1997) ICDT model. Angehrn argues that the Internet can be used for Information, Communication, Distribution, and Transaction. For managers wondering how to inform their customers, for example, the model explains how to use the Internet by distinguishing between different levels of sophistication and

customisation. Another model, belonging to the same phase but slightly more business oriented, was proposed by Cronin (1995). Cronin categorizes Web applications into three groups, related to marketing, sales and support.

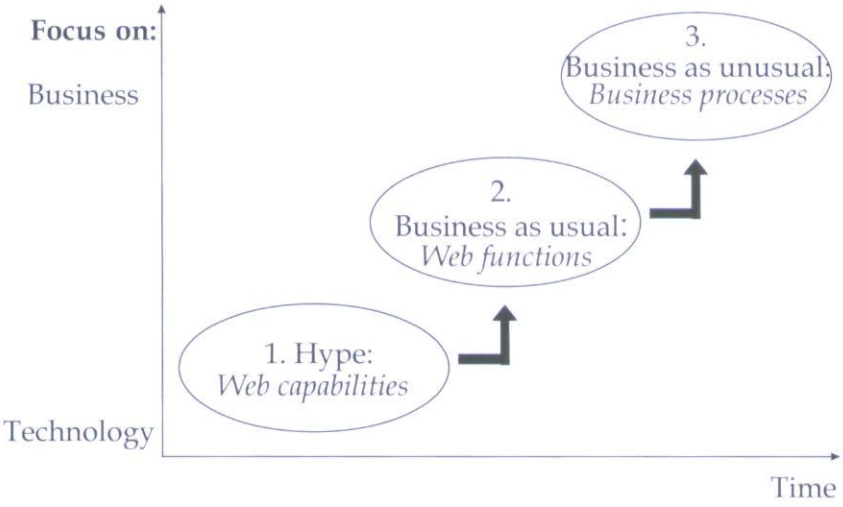

Figure 1. The Evolution of Internet Models: From a Technology Push to a Business Focus.

Such a classification scheme enables managers to compare their current operations to their possible electronic counterparts. Some Web sites even resembled this model with home pages containing links to the various departments within the company.

In the third phase, companies consider the Internet as a means to an end. Increased customer value is the result of integrating Internet capabilities with business processes. Rayport and Sviokla (1994) coined the term 'marketspace' to highlight the contrast with the marketplace. According to them, learning to manage in the marketspace requires a radical shift in thinking: from markets defined by physical places to ones defined by information space. This shift may be a real challenge for managers. Currently, many companies search for ways to leverage their marketplace assets into marketspace and to turn their 'bricks and mortar' operations into effective 'clicks and mortar' firms. Models aimed at guiding managers into this third phase of 'business as unusual' should meet two requirements. First, they should be customer-oriented. While management thinking has focussed for about a decade on internal improvement (e.g., quality management, restructuring, downsizing, reengineering), it has now been complemented with an outward orientation towards customers (Woodruff 1997). Companies are searching for opportunities for competitive advantage through superior customer value. Traditional brand management is no

longer effective (Maklan and Knox 1998) and the marketing literature signals several shifts, e.g., from transaction marketing to relationship marketing (Grönroos 1994), from mass marketing to one to one marketing (Peppers and Rogers 1993), from customer acquisition to customer retention (Reichheld 1996), and from direct marketing to interactive marketing (recently, the scientific journal *Journal of Direct Marketing* has changed its name into the *Journal of Interactive Marketing*). The Internet has the potential to reinforce this trend, since it can reduce the existing asymmetry of information between buyers and sellers, resulting in a shift in power toward the customer (Zott et al. 2000). Rayport and Sviokla (1995) suggest that managers should begin to ask 'What are we doing now in the [market]place, and what could we do more effectively in the [market]space'. We propose that these questions should be answered from a customer's perspective. The second requirement is process orientation, to match recent management theories that often include a process oriented view of organizations. E-business models should enable managers to improve business processes by integrating the capabilities of the Internet with other available tools. To strengthen the business focus, third phase models explain how to increase customer value, instead of how to use the Internet.

In this paper, we propose a hierarchy of e-business management models that meet both requirements (customer orientation and process orientation). All three models take the customer's view as a starting point and are based on the premise that companies should use the Internet for providing added value to customers (Hoffman and Novak 1996; Walsh and Godfrey 2000). Although they deal with the question how to successfully exploit the Internet, they consider this new technology as no more than a means to an end. This perspective is crucial for building and managing mature and successful e-business applications (Seybold and Marshak 1998; Godin 1999). To illustrate the proposed models we will use Dell Computer Corporation as the leading case throughout the next three sections. Dell was one of the first companies, not only to recognize the commercial potential of the Internet but also to realize it. Where deemed necessary, we will briefly refer to other companies. Dell began conducting business through its Web site in July 1996[3]. Almost immediately it sold $1 million per week through the Web, and by the end of 1996 sales had increased to $1 million per day. Six months later, Web sales had doubled again, and in the fall of 1997, sales exceeded $3 million per day. In early 2000, Internet sales was over $40 million per day[4].

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[3] V. Kasturi Rangan, and Marie Bell (1999), *Dell Online*, Harvard Business School Case, 9-598-116.

[4] http://www.dell.com

The Strategic Internet Applications Model (SIAM)

At the highest level of the hierarchy of e-business models, the Strategic Internet Applications Model (SIAM) explains the possibilities the Internet offers for new strategic directions. The model distinguishes between four strategic choices: to use the Internet to offer customised products or services, to provide added value to current customers, to attract new customers, or to reposition the company in its business network (see figure 2).

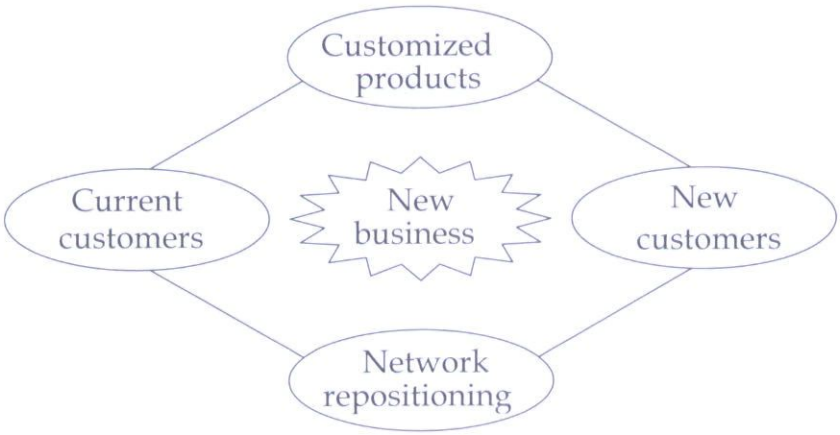

Figure 2. The Strategic Internet Applications Model (SIAM)

Customised Products

There are many ways to customise (elements of) a product. The term product is used here in a broad sense, including both the primary product or service and supporting services, as well as the information communicated to customers about these elements and their use (Woodruff 1997). Most opportunities for customisation exist for products that can be digitized. Digital products can be customised at almost zero marginal costs, examples include customised music CD's and sites that offer the opportunity to monitor your own portfolio of stocks. For non-digital products the mass customisation literature offers a variety of cost-effective customisation approaches. Many companies offer components that customers can combine into 'tailor-made' products, well-known examples reach from pizzas and clothing to cars and personal computers. Dell customers can configure and evaluate multiple systems online with choices from hundreds of components

and obtain instant price quotes, enabling them to select the best possible PC given their budget and performance requirements[5].

Recently, companies are exploring opportunities to supplement non-digital products with digital attributes. In Europe, downloading bell tones for cellular phones and adapting it frequently to match changing tastes has become a hit among teenagers. Other examples include shirts with your own name (e.g., www.bivolino.com) and bottles of wine and whiskey with customised labels.

The Internet is very useful for executing customisation strategies because it offers a low cost solution to the problem of the extensive communication that is often necessary between the buyer and the seller. The Internet also provides companies with the opportunity to extend mass customisation to other elements of the marketing mix, such as price, distribution, and communication. Wind and Rangaswamy (2001) coin the term 'customerization' for approaches that combine mass customisation with mass marketing. Mass customisation increases the customer value of the core product, but simultaneously increases the complexity of the purchase process. Instead of choosing among a limited number of alternatives, customers are faced with an almost infinite number of different products. To relax the complexity, effective Internet recommendation agents guide customers through the selection process by determining the needs and wants of customers and providing a solution in terms of a product and a price that best matches them (see Ansari et al. (2000) for an analytical example).

Current Customers

Web sites provide ample opportunities to provide added value for current customers. Companies have to continuously increase the value they offer to prevent customers from switching to other suppliers. When markets become saturated and competitive pressures increase, the necessity to provide added value becomes inevitable to retain market share. The model described in the next section, the customer interaction cycle, can serve as a tool to determine instances that include the potential to offer added value to current customers.

New Customers

For several reasons the Internet enables companies to attract new customers. First, the lower costs per contact (e.g., communication, transaction or distribution costs) enable companies to focus on previously marginal customers. Second, the Internet is a global medium (Quelch and Klein 1996), providing a different meaning to the marketing instrument 'place'. In the terrestrial world companies often face (visible and invisible)

[5] V. Kasturi Rangan, and Marie Bell (1999), *Dell Online*, Harvard Business School Case, 9-598-116.

geographical boundaries that limit the size of their markets. Like classical direct marketing media (e.g., direct mail and telemarketing), the Internet is an excellent tool to enlarge the geographical size of markets. The Internet also is a suitable medium to reach 'thin' markets, niche markets in which buyers and suppliers are small and geographically dispersed, and the products or services are specialized or unique (Peterson et al. 1997). Dell has used the Internet to target two new categories of customers. First, the Internet enabled Dell to become a global business, with Web sites for 44 countries in 21 languages[6]. The French site, for example, is writen in French, contains listings of French software, while the prices are listed in francs (or euros). Second, the Web site served as a tool to expand the customer base from large corporate accounts to small business segments, and finally to consumers[7]. Due to the cost structure of Web enabled services (with marginal costs of almost zero) it became cost effective for Dell to concentrate on these market segments.

Many managers are highly interested in the capability of the Internet to attract new customers, but less realize that finding new customers often also implies meeting new competitors. More than half of the 22,000 car dealers in the US use the Internet to sell cars (Hughes 1998). Being primarily regionally (or even locally) oriented as they used to be, the Internet has enabled them to become national players. However, their formerly invisible market boundaries served also as a protection to other car dealers. These boundaries have been leveled to a great extent, which has a significant influence on their competitive environment.

Network Repositioning

Companies can use the Internet to strengthen or change the relationships within their business network. If they are selling through intermediaries, Web sites can support intermediaries by improving: (i) the services offered to intermediaries, (ii) the cooperation among intermediaries, or (iii) the services intermediaries provide to the final consumer. Companies can also reconsider their role in the business network by altering the ways they receive and deliver value to other parties in that network or by redefining their position in the network. The former implies that the Internet is used to enhance the distribution function. For digital products or services the Internet can serve as a distribution channel. Well-known examples include information (from business news to weather forecasts), software, audio (music), video, graphics, and some kinds of consultancy. Distributing products over the Internet is

[6] Richard Owen (1999), Winning the Web Wars, *The DMA Insider*, vol. 2, 3 (Fall), 16-22.

[7] V. Kasturi Rangan, and Marie Bell (1999), *Dell Online*, Harvard Business School Case, 9-598-116.

often a major step, calling for a redesign of the order fulfillment process. For non-digital products the Internet can replace traditional media in several phases of the customers purchase and use process (see the next section).

Companies can redefine their position in the business network in several ways. The best known form is the elimination of traditional intermediaries (disintermediation). This is essentially what Michael Dell did when he started Dell Computer Corporation in 1984. The other forms surpass the level of thinking in terms of channels and are related to thinking in terms of business networks. One form is to establish a new role as a value-added intermediary (Parsons et al. 1998). As e-commerce comprises of a fusion of commerce and technology, strong technology players can use their knowledge to enter markets that are not related to their core business. For example, Carpoint has led Microsoft into the car business (carpoint.msn.com), while Expedia turned the software producer into a successful travel business (expedia.msn.com). One may consider Expedia as the electronic version of a travel agency, other intermediaries have no terrestrial counterparts. For example, BookFinder is a search engine that provides information about the availability and pricing of books at different bookstores. It claims to be able to search the collections of almost 10,000 different bookstores (www.bookfinder.com). A third way an organization can reposition itself is to form alliances with companies that played no role in the industry before. Recently Ford and Microsoft have announced a joint venture that will enable Ford to build cars to meet online orders. Finally, companies can use the Internet to start an alliance with their competitors. In February 2000, the big three auto manufacturers General Motors, Ford and DaimlerChrysler stunned the automotive world by agreeing to form a single online business-to-business procurement network (see Kaplan and Sawhney (2000) for a classification of business-to-business electronic marketplaces).

The SIAM model distinguishes between four strategic applications of the Internet, with a focus on new customers, current customers, products or the business network. Many combinations of these four different perspectives are possible, with the ultimate combination being a new business (like amazon.com). The next section will concentrate on how a strategic focus can be translated into applications that deliver the added value to (new or current) customers.

The Customer Interaction Cycle (CIC)

One of the services of Dell Online is customised pages, called *Dell Premier Pages*. In developing this service, Dell took a ground-up development approach analyzing the customer's interaction with Dell before, during, and after the sale[1]. In short, this is what the Customer Interaction Cycle (CIC, see

figure 3) proposes. The CIC model is customer oriented (for example, it contains the phase 'Use' instead of 'After sales') and it also is process oriented (the phases represent the logical chain of interactions between a customer and a supplier). First, we will describe the content of the CIC model, and then briefly discuss how it can be applied.

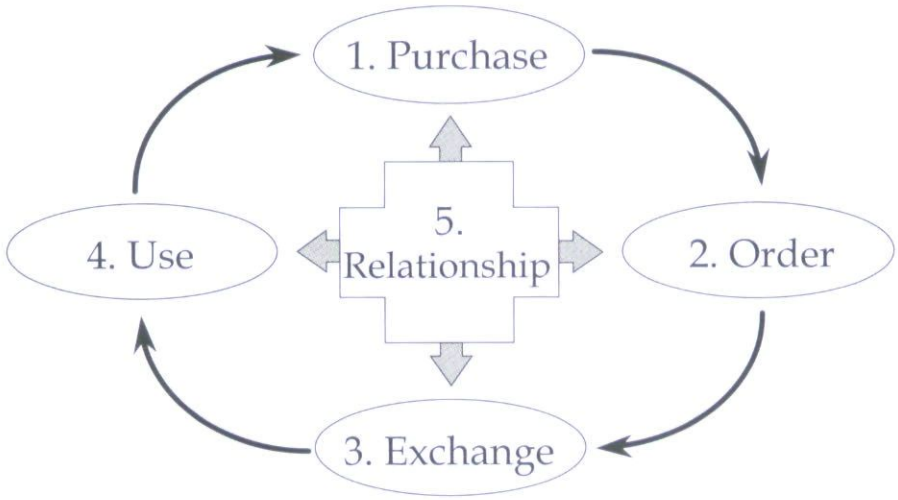

Figure 3. The Customer Interaction Cycle (CIC) to Determine How a Strategic Web Focus can be Translated into Improved Customer Value

Purchase

The Dell Premier Pages improve the purchase process by including the configuration restrictions of a corporate customer. One customer of Dell allows its 50,000 employees to view and select products on-line. They use the Premier Pages as an interactive catalog of all the configurations the company authorizes, employees can then price and order the PC they want[8]. Another feature of the Premier Pages is that it allows employees to forward their configurations to the purchasing department, who in turn can view the order, approve the purchase and submit the order to Dell.

In many other instances, purchasing starts with making a preliminary selection of products or suppliers and then making the final choice among the alternatives in the evoked set. Usually, the preliminary selection is based upon a limited number of criteria, while the final selection involves more criteria and more detailed information. Knowledge of the customer purchase

[8] Joan Magretta (1998), The Power of Virtual Integration: An Interview with Dell Computer's Michael Dell, *Harvard Business Review*, March-April, 73-84.

decision process should drive the design of a Web site. For example, information for the preliminary selection should be somewhere on the surface of the site and not be stored deep down in the Web site. To support primary selection Marshall Industries, an electronic distributor in El Monte California, has included a quick search function on their homepage. Customers can search for parts by manufacturer part number, manufacturer name, or part description. A more sophisticated search function is available deeper in the Web site. This function can complete a search for, for example, hard drives based on eight criteria (www.marshall.com).

Customers do not need plain information only, they also have to interpret and manipulate it. For example, a customer may have to assemble a product from components, to compare colors of various items, or to compute sizes, weights, and prizes. To support the purchase decision process Web applications can advice customers or enable them to manipulate information. Supplier advice can be based on technical considerations, but also on more subjective issues like colors, shapes, style, and taste. Which kind of wine tastes best with a full-flavored pasta? Which brooch fits a burgundy dress?

Order

To conclude a transaction it is necessary to determine what will be delivered under what terms. Customers order simple products by clicking the desired item, and then drag it into a shopping cart, review the shipping and handling conditions and click 'Submit'. The supplier confirms the order by means of an automatically generated e-mail message. In more complex situations the supplier and customer have to interact several times before all details of the order have been agreed.

The Premier Pages provide Dell customers with a paperless purchase-order process which is said to have them saved millions of dollars[9]. Dell gains substantial savings from Web ordering because the customer takes over the order entry process. The customer keys in which products to buy, which options, delivery terms, payment method, etc. Before submitting the order, the customer checks it, which also considerably limits the time-consuming process of correcting misunderstandings and typing errors.

Exchange

In the next phase, the product is exchanged for money. If a product can be digitized, Web delivery is possible. Otherwise, information with regard to the distribution process can be made available within a Web site. Dell customers can track the order's status from the time it was entered in the system, through to the manufacturing process, to shipping, and, finally, to

[9] Richard Owen (1999), Winning the Web Wars, *The DMA Insider*, Vol. 2, 3 (Fall), 16-22.

delivery[10]. By entering a unique code the customer is provided with information on the tracking status of their shipments and details concerning date, time, location, and activity. The order status information may also be used to allow the customer to change an order. Car manufacturers, for example, may allow customers to change the specification of a car even during the manufacturing process: as long as the car has not been painted, the customer can change his/her mind and request a different color. Payment is the other part of the exchange process. Although many consumers remain hesitated with electronic payments, there are many developments toward safe, direct, and anonymous electronic payments.

Use

The use phase includes a wide range of activities ranging from installing, training, and using to maintaining, repairing, and disposing of the product. Even back in 1996, the Dell site contained complete service and support data, with 35,000 pages of troubleshooting information[11]. Dell customers can also download upgraded information, such as new printer drivers, through the Web site. They are reported to download more than 160,000 files per week[12]. A natural language search engine, Ask Dudley, allows users to ask support questions in plain English, and then points them toward an answer more quickly than most real reps ever could[13]. To help customers to replace their used computers Dell started an auction site (www.dellauction.com).

The information that customers need can be presented both preventively and reactively. In the first case, the Web site contains the information customers are looking for. Examples not only include FAQ (Frequently Asked Questions) pages, but also information (text, pictures, or video) explaining how to install, use, maintain or repair a product, information with regard to new product developments, or cases detailing innovative product uses. By linking the Web site to the order database the company can speed up the information search process considerably. For example, a customer looking for the technical specification of a part of a highly complex product is provided with only those parts that are elements of the products that that customer has bought. Preventive communication can also be supplier initiated, for example a car dealer informing a customer that a yearly overhaul is needed. An example of reactive after-sales interaction is to

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[10] V. Kasturi Rangan, and Marie Bell (1999), *Dell Online*, Harvard Business School Case, 9-598-116.

[11] V. Kasturi Rangan, and Marie Bell (1999), *Dell Online*, Harvard Business School Case, 9-598-116.

[12] http://www.dell.com

[13] Richard Owen (1999), Winning the Web Wars, *The DMA Insider*, Vol. 2, 3 (Fall), 16-22.

enable customers to directly ask questions, by means of an e-mail message or a form in a Web site. To speed up the interaction the site can contain a 'call back' button or a chat room. For example, Marshall Industries has included a service called Help@Once, which is a chat service that offers online support, 24 hours a day. A Marshall Technical Support Engineer is available to answer questions and to provide technical assistance.

Relationship

To increase customer retention many companies have developed activities that are not directly aimed at initiating transactions but that are aimed at strengthening the relationship with the customer. Three possible Web strategies include community building, image building and offering services that enable the customer to do a better job. Community building (Hagel and Armstrong 1997; Figallo 1998; Hagel 1999) refers to providing a platform that enable customers to directly interact with each other. If managed properly, online communities can strengthen brands (McWilliam 2000). For example, Dell offers its customers the opportunity to participate in discussions that are directly or indirectly related to Dell products. Topics that are only indirectly related to Dell include questions such as 'Is leasing better than buying?' and 'How do you manage the transition to Windows NT?'[14].

Image building Web applications try to electronically deliver and strengthen the image of brands. A strategy chosen by many producers of fast moving consumer goods is to include a game in their site or to sponsor a game in an entertainment site. For example, the site of Heineken contains a game called The Quest in which the player, like a real private investigator, has to bring back the son of an Australian millionaire from Amsterdam to his home in Sidney. Each month Heineken donates a reward to a random selection of the best players. More than 50,000 people joined The Quest, accounting for 560,000 logins and 360,000 email messages (Wagter 1998).

The third strategy to strengthen the relationship with customers focuses on customised Web sites containing (confidential) information or applications that enable the customer to do a better job. The Dell Premier Pages offer the opportunity to implement multiple access levels for the various users within the customer's organization[15]. Special user names and passwords determine the access privileges for each user (e.g., purchasing, IT support, or end-user). The Premier Pages can also contain customised links to areas of special interest for this customer, the customer's company logo on the site's homepage and purchase order forms, and an Auto Login icon to automatically login users to a pre-specified user level without the use of user

[14] Joan Magretta (1998), The Power of Virtual Integration: An Interview with Dell Computer's Michael Dell, *Harvard Business Review*, March-April, 73-84.
[15] http://www.dell.com

names or passwords. By offering these services, parts of Dell Online become part of the intranet of the customer, sometimes as a solution for problems at the customer's organization. Some of Dell's customers view the Premier Pages as a means to enforce product standards in increasingly decentralized business environments[16]. Achrol and Kotler (1999) consider this as the most radical implication for marketing in the network economy, the shift from being an agent of the seller to being an agent of the buyer. In many instances, both the seller and the buyer gain. For example, Shell Oil Company sought ways to make it easy and inexpensive for employees to purchase home PCs[17], in order to help them improve their computer skills. Dell designed an order site through Shell's Premier Page at which employees could configure and purchase Dell systems on-line, while Shell offered incentives such as free software, printers and interest-free loans. Shell determined that administering such a project manually would have been too costly and time-consuming to be worthwhile and Dell was able to sell 6,000 computer during the first four months of the program.

The CIC model is a tool to discover Web applications that can lead to superior customer value. In its most extreme form the Web site resembles more to an e-procurement tool for customers than to an e-sales tool for the supplier. In each phase of the customer interaction cycle managers need to answer the following questions:

1. *Current support activities.* How do we support customers in their selection process, their buying process, or their product use process?
2. *Evaluation of these activities, from both a supplier and a customer point of view.* Are there any services with which important customers are unsatisfied or that lead to high costs?
3. *Possible replacement by Web applications.* Which of these customer support activities can be performed also or even better in a Web site? The answer uncovers opportunities to use the Web as an additional medium or as the more appropriate medium (cheaper, faster, better, or by providing new customer value). The replacement of hard copy manuals with electronic downloads saved Dell millions of dollars per year[18]. A simple method for finding appropriate Web applications is to screen customer support activities for instances in which the operator is no more than a human interface between the customer and an internal system. A good example

[16] V. Kasturi Rangan, and Marie Bell (1999), *Dell Online*, Harvard Business School Case, 9-598-116.

[17] http://www.dell.com/us/en/gen/casestudies/casestudy_shelloil.htm

[18] V. Kasturi Rangan, and Marie Bell (1999), *Dell Online*, Harvard Business School Case, 9-598-116.

is the telephone-based tracing and tracking system Dell was using before developing its Web site[19].

4. *Unfulfilled needs and wants and Web capabilities.* What currently unfulfilled needs and wants can be identified and what possibilities offers the Web to meet them? The needs and wants should be analyzed from both a customer and a supplier perspective. Customers may want better information on the performance of various product alternatives, while a supplier may want to better inform customers about the wide range of available product components and the ways they can be combined. For each identified need and want, management must determine whether the Internet can serve as a means to provide it in a cost effective way. For example, a Dell study found that several Web visits were the result of ease of use and ease of access[20]. Absent the Web, the customer would not have placed a phone call to clarify or seek the service, especially for lower level inquiries.

The ADOF-Model

The third model in the hierarchy describes the factors that determine the operational success of a Web site. This model is called the ADOF-model, where ADOF is an acronym for Accessibility, Design, Offer, and Fulfillment. The metaphor for the ADOF model is a funnel (see figure 4). The ADOF funnel is made up by a sequence of rings. At each ring a company can lose potential loyal customers

Accessibility

The fundamental difference between Web sites and classical media is its non-intrusiveness. The customer is visiting the supplier instead of the other way around. That is why accessibility is crucial. Accessibility refers to the extent to which (potential) customers can easily find the Web site. From a supplier's perspective it reflects the ability to generate traffic to the Web site, which is often considered to be a major success factor for Web sites. The 'build and they will come' model is insufficient to draw customers (Parsons et al. 1998). Web sites become easier to find if they have URL-addresses that are obvious (www.company.com or www.brand.com). There are many ways to support accessibility, e.g., by placing banners and links on affinity sites, or by adding the site to search engines, directories, and What's Cool lists. In general, links should be available at any place in cyberspace that is visited

[19] V. Kasturi Rangan, and Marie Bell (1999), *Dell Online*, Harvard Business School Case, 9-598-116.

[20] V. Kasturi Rangan, and Marie Bell (1999), *Dell Online*, Harvard Business School Case, 9-598-116.

frequently by potential customers. Although on-line promotion efforts have shown to be effective (Briggs and Hollis 1997), they should be supported by off-line activities ranging from advertisements in broadcasting and print media, to including the URL on product packages and business cards. For existing companies, many of these efforts are forms of 'piggyback marketing' (Parsons et al. 1998), which involves leveraging existing marketing efforts to draw traffic to a site with low or no additional costs. Dell explicitly encourages its customers to find out about its products on the Web by pointing them there in advertisements, business cards, and in phone and in-person conversations. The more time customers spend gathering product information on the Web, the more Dell saves in call avoidance[21].

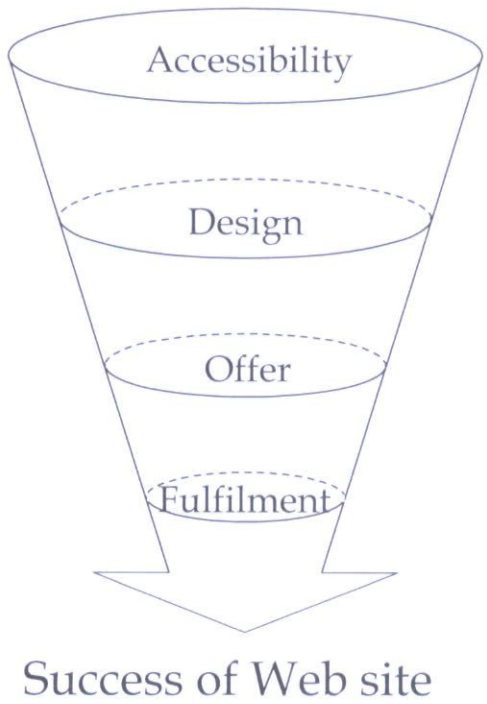

Figure 4. The ADOF Model: The Success of a Web Site Determined by a Process that is Portrayed as a Funnel Consisting of Four Sequential Rings.

[21] Richard Owen (1999), Winning the Web Wars, *The DMA Insider*, vol. 2, 3 (Fall), 16-22.

Design

The design characteristics of a site determine how accessible the content of the site is (e.g., Huizingh 2000; Wan 2000). The content of a Web site should be organized and presented in such a way that visitors can easily find what they are looking for. This sometimes contrasts with the use of sophisticated tools. For example, Drèze and Zufryden (1997) found that the use of Java scripts was negatively related with both the number of pages requested and the time spent on a site. Due to its multi-media nature, the transfer of content is a much more complex process compared to traditional media. The visitor of a site can be a reader, a watcher, a listener and a driver simultaneously. The design of a site should therefore address the visitor in all of these roles.

Companies use Web sites to engage their customers in an ongoing dialogue. This implies that the design should be adaptive in that the site can adapt itself when more is known about a customer. The two processes that enable Web sites to be adaptive are personalization and customisation. Personalization refers to the inferences a supplier makes about the customer's preferences based upon previous information search behaviour (click-streams) and transaction behaviour. For example, if a customer searches for maintenance information the site can offer links to the maintenance of any available product or links to only those products that have been bought by that particular customer. Customisation refers to making a site tailor-made based upon information explicitly provided by the customer. User names and passwords limit access to only the authorized customer, thus enabling suppliers to build extranets with specific customers. For example, the Dell's password protected Premier Pages contain for each corporate customer only the products, prices, approval procedures, service and support information that is appropriate to that particular customer[22]. Both personalization and customisation are iterative processes that are beneficial to both parties: customers receive functions and offers that better match their needs and suppliers decrease waste and increase the customer's switching costs. Huizingh (2002) found that customisation of the Web site is an important determinant for Web site success. Dell has developed more than 35,000 Premier Pages in 12 languages.

Although Web communication is highly unpersonal, many sites try to add personality to the site by including a special creature that serves as a vehicle for the communication between the unpersonal Web database and the visitor (Sayers 1998). Well-known examples are Peter the Sommelier who knows everything about wines (www.virtualvineyard.com) and Mama Cucina of

[22] Richard Owen (1999), Winning the Web Wars, *The DMA Insider*, vol. 2, 3 (Fall), 16-22.

Ragú (www.eat.com). Instead of Ragú marketers communicating with their customers, the metaphor is used of a friendly, old Italian lady. Coupons, for example, are not presented as such, but Mama Cucina is cited saying: "Those nice kids at Ragú have got a brand new batch of coupons for you with lots of savings". The site contains links such as 'Talk to Mama', 'Mama's cookbook', and 'Sign up for Mama's Newsletter'. Often, the creature is not just a communication vehicle, it also adds fun and provides cohesion between the various information elements. For example, Ragú presents different information in the various rooms of Mama Cucina's home (e.g., a family room, a kitchen, and a dining room).

Web sites should inform and entertain, but both goals should not be treated as separate functions. Web sites should entertain while they inform, implying that navigation and information must be presented in an attractive way. Another crucial aspect of Web design is interactiveness, which is the reason that simply transferring content from traditional media usually does not work (Parsons et al. 1998). Web visitors are not passive TV watchers, they expect to play an active part in the communication process. Users should be able to drive the flow of information, implying a design that permits multiple ways of navigation (e.g., links within a network structure, a search function, and a map) and that strengthens the sense of control on the side of the user (in contrast to designs that create the feeling of being 'lost in cyberspace'). Companies can explicitly ask for feedback, by means of requests for comments, invitations to participate in new product developments, and questionnaires. Dell, for example, receives more than 40,000 e-mails per month[23].

Offer

The third ring deals with the offer that is presented in the site. In cyberspace, the quality of the offer is determined similarly to that in the terrestrial world, where the ratio of price and quality determines the attractiveness of an offer. Web sites can influence both elements. Quality refers to the perceived value of the product in a broad sense, including supporting services and information (see section 3). Quality can be increased by means of easier access to information, increased availability (7x24), home or office access, and tools to speed up the purchase process. These tools can be search engines (to find an appropriate alternative), comparison facilities (travel sites rank flights based on lowest fares, total flight time, and number of transfers), or the ability to personalize the search process. Also, the promise of quick fulfillment (online brokers) and instant information about

[23] Richard Owen (1999), Winning the Web Wars, *The DMA Insider*, vol. 2, 3 (Fall), 16-22.

order status increase the perceived quality. Dell has tried to incorporate services that would make the customer experience better on the Web than in traditional environments[24]. For example, Dell has created an automatic configurator, a natural language search engine, a paperless purchase-order process, and an online service and support site. Dell can load the customer's software in its factory, even if the software is written by the customer, put an asset tag with the customer's logo on the PC, and keep an electronic register of the customer's assets. As Michael Dell once said: 'We sometimes know more about a customer's operations than they do themselves'[25].

The online offer should also pay attention to characteristics of e-commerce that negatively influence quality. According to Hoffman et al. (1999), consumers do not trust most Web providers enough to engage in 'relationship exchanges' involving money and personal information with them. The online offer should therefore also contain clear privacy statements, multiple payment methods, and information on applied security measures.

The other factor that determines the attractiveness of an offer is price. Prices on the Web can be lower because the customer takes over the data entry process, thereby releasing the supplier of the time-consuming processes of data entry and the correction of data entry errors. Also, disintermediation can lead to lower prices, while comparison shopping (e.g., www.mysimon.com) will increase price competition. However, this does not necessarily imply that online prices will always be lower than offline prices (see Lynch and Ariely (2000) for an example in the wine market). Strategies such as customisation, personalization, bundling and other strategies that lead to higher switching costs provide companies with the potential to increase prices (Grover & Ramanlal 1999; Dolan and Moon 2000).

Fulfilment

In essence, fulfillment is the extent to which a company is able to meet (1) its own promises with regard to the product in a broad sense, and (2) the service standards in cyberspace. If a company offers delivery within 24 hours, is it able to meet that promise? Do the products have the features described in the site?, etc. In this sense, fulfillment in cyberspace is similar to that in direct marketing (see, e.g., Roberts and Berger 1989). The quality of fulfillment is determined to a large extent by the quality of the organization behind the Web site (the back office). Web sites can support the fulfillment process by providing access to information about the status of production,

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[24] Richard Owen (1999), Winning the Web Wars, *The DMA Insider*, vol. 2, 3 (Fall), 16-22.

[25] Joan Magretta (1998), The Power of Virtual Integration: An Interview with Dell Computer's Michael Dell, *Harvard Business Review*, March-April, 73-84.

delivery and payment, and the ways to install, learn and use products. Dell customers can access the same support tools online as Dell's own technical support teams do[26].

The second part of fulfillment deals with the standards in cyberspace. Service standards in cyberspace refer to, for example, the time within which incoming e-mail messages have to be answered. Forty-eight hours, but preferably twenty-four hours, is often used as a service standard that companies should be able to meet.

Management Implications

Although only few managers deny the potential of e-businesses, many are struggling with the question of how their company can best exploit the Internet. According to McBride (1997), in many organizations the adoption of the Internet is reactive rather than proactive. Many companies follow a 'goldrush' model, not supported by a comprehensive strategy (Anghern 1997; Brännback 1997). 'Content is King' stress some Web observers (e.g., Snyder 1996, Chase 1996), and shattered expectations are supposed to do more harm than providing no access at al (McKenna 1995). But when is the content 'right'? Managers need tools that guide them in their quest for effective Web applications. In this paper, we have presented three models that provide structure to this search process, namely the SIAM, the CIC and the ADOF model.

The SIAM model can be used to structure management thinking about the main objectives of e-business initiatives. The model highlights four different avenues (current customers, new customers, customised products, and the organisation's position in the business network). These avenues may cross each other but each starts with a different focus. For example, thinking about how to strengthen the relationship with current customers may lead to innovative services that are also attractive for new customers. And current customers may be interested in services that are developed to acquire new customers. However, it is a very different starting point if a manager raises the question 'How can we use the Internet to provide added value to our customers?' than if management thinking starts with 'How can we successfully attract new customers?'.

The CIC model requests managers to think of the customer interaction process from a customer's point of view. The rational behind this model is that a Web site should support the entire customer's purchase process. Customers will only use the Web site if they think they can do a better job by

[26] Joan Magretta (1998), The Power of Virtual Integration: An Interview with Dell Computer's Michael Dell, *Harvard Business Review*, March-April, 73-84.

using it. Management understanding of that job is therefore a prerequisite for successful Web initiatives. It also implies that being an effective sales tool is the result and not the goal of a Web site.

The third model, the ADOF model, deals with the question of how to realize an effective Web site once the goals are clear. It supports management thinking for traffic generation, an effective design and an attractive offer. These three elements of the ADOF model determine the short-term success of the Web site. For the long-term success, a fourth element, fulfillment, comes into play. Only if customers experience that a company is able to deliver what it has promised, they may become loyal (e-) customers.

All three models enable managers to consider the Internet as a means to an end. Web applications are derived from marketing objectives and not from the technical capabilities of the medium. For example, the Internet offers the opportunity for easy, fast and cheap communication, and therefore companies tend to derive 'improved communication with our customers' as their Web objective. The CIC model stresses that that is a relevant objective only if it is necessary from a marketing perspective to improve the communication with customers.

The models also urge managers to think before starting to invest in e-business. We agree with Parson et al. (1998) that 'getting started is more important than making it perfect', but effective e-business strategies should at least include the main direction a company is going. They need to be flexible to accommodate requests by customers, unanticipated moves by competitors (even from outside the industry) and new opportunities that become feasible by rapid technological developments. Managers have to find a delicate balance between the dynamics of e-business, which indeed do not allow for time-consuming planning processes, and the careful selection and design of promising e-business avenues.

A final implication of considering the Internet as a tool to provide superior customer value is that this enables managers to integrate the Internet with other media, such as television, radio, print media, direct mail and telephone. For example, for a new product, the mass media can be used to create awareness, and a Web site to provide more detailed and extensive information (e.g., text and graphics or a video showing the product in action) and to offer the opportunity to request samples. By providing samples in return for an address (be it e-mail, post mail or a telephone number) a company creates the opportunity to ask customers for feedback, to start a relationship and to fine tune new product developments.

Conclusion

Managers need guidelines for developing effective e-business strategies. In

this paper, we have presented three models (the SIAM, the CIC and the ADOF model) that assist managers in their Web decision-making. The crux of e-business is to effectively match the efforts to create superior customer value with the technical capabilities of the new medium. Compared to traditional media, electronic media are superior in (at least) three ways: database searches, complex computations, and several aspects of communication (e.g., speed, accuracy, multi-media, and cost). Effective Web sites leverage these basic capabilities to create innovative applications that provide added value for customers. Now the Internet hype is over, managers can and should attain a more critical attitude towards proposed Web investments. A (more) mature technology calls for more mature applications. Although several observers have stressed the importance of the first mover advantage, an extensive study, involving fifty consumer product categories, highlights the importance of being an 'early leader' (Golder and Tellis 1993; Tellis and Golder 1996). Early leaders are firms that enter after pioneers, but assume market leadership during the early growth period of the product life cycle. In most markets, the early Internet leader has still to be determined, and the models proposed in this paper help managers to understand how to attain such a position. These models support the phase of strategy formulating only. When it comes to strategy implementation, aligning the internal organization with Web objectives becomes crucial. But structure follows strategy, and knowing where to go precedes determining how to go.

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