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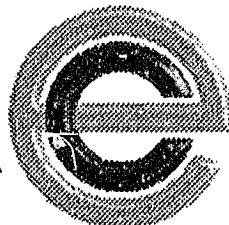
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Electronic Commerce Innovations and Marketing Management

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ABSTRACT

The rapid growth of Electronic commerce is profoundly redefining many basic aspects of marketing. The customer populations a company serves can be extended, restricted, and/or redefined through E-commerce. It can also enhance the information content in existing company offerings, and enable the development of new information-intensive products and services. It supports shopper movement from physical to cyberspace, and enables digital delivery of information products and services directly to the customer. It makes pricing more competitive and supports new forms of payments and pricing. E-commerce has also significantly revolutionized promotion mechanisms, and fostered the elimination or adaptation of existing intermediaries as well as the development of intermediaries in entirely new forms. In this paper, the impact of electronic commerce on marketing is analyzed, based on an extended market mix model with six Ps: People, Product, Place, Price, Promotion, and Partners.

INTRODUCTION

Internet-driven e-commerce has had a significant impact on the many ways of transacting business. In this paper, we will focus on one of the most profound aspects of business that has been affected by electronic commerce - the role of marketing. A model commonly used to describe the components of marketing is "the four Ps": Product, Place, Price, and Promotion. Although this model covers a large portion of marketing activity, it lacks a measure of the

focus on the players involved. For this reason we have included Partner as a fifth "P", to reflect the many changes that are occurring with intermediary and outsourcing firms; a sixth "P" is the People or prospective customers. Customer demographics in cyberspace are significantly different from traditional marketplaces. Our discussion therefore revolves around the six P model, defined as follows.

- People:** prospective customers, either individuals or businesses
- Product:** a good, service, or idea to satisfy customer needs
- Promotion:** a means of communication between the seller and buyer
- Price:** what customers are charged for the product
- Place:** a means of getting the product into the customer's hands
- Partner:** an intermediary or outsourcing contractor

The impact of electronic commerce on the six Ps of marketing is summarized in Table 1 and explained in detail in the following sections.

PEOPLE

Market planning identifies the people who are the prospective customers. Electronic commerce may extend, restrict, and/or redefine the customers a company can serve through electronic communication media. For instance, a bookstore opened in a small town may serve only local people. But a bookstore opened on the Internet may serve people worldwide. A local bookstore can serve a variety of people: young or old, rich or poor, women or men, but an Internet bookstore serves only those with Internet access; these people generally have higher than average income and education. Another consideration is the concept of market niches, since the net is composed of thousands of overlapping groups ranging from a few people to perhaps several hundred thousand. Understanding the consumer population in cyberspace and their shopping preferences is essential for success in e-commerce marketing.

The demographics of Internet and Web users continue to change rapidly. For example, the average age of users is about 35 years, with the proportion of females continuing to rise towards the 50% level. Shopping continues to rise in importance among Web users. The most commonly cited reason for using the Web for personal shopping is convenience (65%), followed by vendor information availability (60%), lack of sales pressure (55%), and saving time (53%). The steady growth in personal shopping is expected to continue as online transactions become easier and more choices of products and services become available. Demand for goods and services varies substantially, depending on the demographics of Web users. The most popular items purchased over the Web are computer software and hardware. Other popular items include: travel arrangements, books and magazines, and musical tapes, CD's, and albums. Online purchases of clothing are beginning to grow rapidly.

While business-to-consumer Internet commerce is still in its infancy, business-to-business Internet commerce has already moved through the early adopter stage. Unlike the more traditional e-commerce tool of EDI, used primarily by large

Marketing Mix Component	Effects of E-commerce
People	<ul style="list-style-type: none"> • Restrict, extend, and redefine prospective customers

EDI, used primarily by large companies through private networks, the Internet makes electronic commerce affordable to small businesses and even home offices. Companies of all sizes can now communicate with each other electronically through the public Internet, with appropriate security through such means as "tunneling" via virtual private networks. The growth of business-to-business e-commerce is driven by lower purchasing costs, reductions in inventories, lower cycle times, more efficient and effective customer service, lower sales and marketing costs, and new sales opportunities.

There are two main observations relevant to the people component of the e-commerce market model. First, the potential for niche markets is now very substantial due to the wide reach of the Internet and the potential for customization of products and services. Second, the rapidly changing global demographics of populations with access to e-commerce merits a careful analysis before investment in electronic commerce markets. The potential of e-commerce can be assessed, for example, with inexpensive initial investments in promotional activities on Web and e-mail for monitoring and survey purposes. Many companies are moving into e-commerce markets in this way before committing to on-line sales and service, which may involve major investments in on-line transaction processing,

	<ul style="list-style-type: none"> • Demographic identification of market niches • Enrich information gathering to identify customer preferences and buying behaviour • Encourage higher expectations of wider selection, lower prices, better service • Change perceptions and trust of virtual / physical institutions
Product	<ul style="list-style-type: none"> • Enrich information content of existing products or services • Enable new forms of information products and services • Enable mass customization of products and services • Increased attention to copyright protection issues
Place	<ul style="list-style-type: none"> • Movement from physical space to virtual cyberspace • On-line delivery of information goods and services • Support outsourcing, coordination of in- and outbound logistics • Promote globalization of the marketplace
Price	<ul style="list-style-type: none"> • New forms of pricing and payment methods • Development of more efficient markets, more competitive prices • Raise new taxation issues
Promotion	<ul style="list-style-type: none"> • Enable new options for push and pull technologies • Encourage, facilitate customer initiated information search • Attract customer attention with free information services • Extensive and tailored product and service information • Development of virtual communities • Flexible promotion strategies easily implemented

on-line transaction processing, staffing with sales and distribution personnel, and major changes to other aspects of supply chain management.

PRODUCT

Major contributions of e-commerce to product change have been to enrich information content of existing

Partners	<ul style="list-style-type: none"> • Eliminate or adapt existing intermediaries • Digital intermediaries: web search-engines, directories, auctions • Coordinate partners via virtual links • Search engines, directories support customer shopping
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products or services, the development of new products or services not previously feasible without low cost digital communications, and the application of mass customization. The enrichment of information content of existing product or services is evident. For instance the Canadian Multiple Listing Service is a Web-based service that covers all of Canada, and includes a large number of new and resale homes, provides maps to locate properties, supports customized searches, and has a mortgage calculator. There are also many examples of new products or services not previously possible. For example, Canada Trust (recently merged with TD Bank) allows small business owners to check account balances, transfer funds, make payments, etc. Versions is a service that can automatically transmit information in e-mail form to software users whenever the developer of the product releases an upgrade. Canoe is a major portal for Canadian financial news and data. These products and countless others in such niche markets were not possible before the proliferation of e-commerce.

Another major product shift has been the swift movement towards mass customization. For example, Dell Computer sells the great majority of its PCs online, where customers can select the desired features for products that may not have actually been assembled before the order is received. Personalization of information products is also a form of mass customization. It would be exceedingly difficult and costly for a newspaper to distribute 75 individual sheets with different stories, to allow consumers to purchase exactly what they want. Publishing on the Web makes such a business model economically feasible.

The arrival of e-commerce technology such as automated teller machines (ATMs), debit card shopping, on-line banking, and digital cash, has revolutionized banking and changed the competitive environment. The introduction of EFT (Electronic Funds Transfer) and debit cards brings banking directly into stores. Since banking essentially involves the transfer of information, transactions and information exchange can be handled effectively by electronic means, resulting in a decreasing need for physical bank branches. Some newer "cyberbanks" have been formed to operate entirely over the Web. Having no physical branches, they do not have this perception of security and stability but they threaten the supremacy of traditional banks. As examples, ING Direct and VanCityDirect operate nationwide as virtual banks, where they are able to pass to customers the savings they realize from a lack of physical presence, in the form of higher interest on savings, and lower service charges.

The insurance industry is also embracing e-commerce as a means of enhancing product offerings. For instance, many dental offices and pharmacies electronically file patient claims to group benefit plans through EDI, resulting in fewer errors as well as more rapid payments. In the investment business, Web sites maintained by brokerages such as TD Waterhouse for example, provide individual investors with access to stock, bond, and mutual fund trading.

PLACE

Place refers to the distribution of products or services, including inbound and outbound logistics, and warehousing. E-commerce has caused a shift from physical space to cyberspace for distribution of products such as information and software, and it has greatly facilitated the outsourcing and coordination of inbound and outbound logistics. Historically, the main development in e-commerce was the application of EDI (Electronic Data Interchange). For example, bar-coding facilities at the cash registers of many stores automatically update inventory levels. Ordering, shipping, and subsequent invoicing can also be supported electronically. EDI streamlines distribution by speeding up processes and minimizing errors. Using EDI, cost savings result from reduced inventories and paperwork, and service levels improve.

With electronic commerce, it is possible to shop in cyberspace through access to electronic shopping malls, Internet banking, etc. There are several issues that relate to the transition from physical space (e.g. department stores), to cyberspace (e.g. electronic shopping malls). These are summarized in Table 2. Although electronic shopping malls allow customers to shop at home, physical products still need to be delivered. This normally requires outsourced services such as courier or parcel delivery, adding extra costs for shipping and handling. The quality of logistics services has improved due to e-commerce technologies, at least partially due to the increased competitiveness of this environment. Shipping intermediaries such as Federal Express have improved service while reducing costs, by using Web sites to allow customers to arrange package pickup, track delivery status, and order merchandise on-line.

Shopping Characteristic	Advantages Of E-Commerce Applications	Disadvantages Of E-Commerce Applications
<ul style="list-style-type: none"> • Accessibility 	<ul style="list-style-type: none"> • Reduces travel • Eliminates geographical boundaries • Anyone, anywhere, anytime 	<ul style="list-style-type: none"> • Limited to customers with Internet access
<ul style="list-style-type: none"> • Richness of product information 	<ul style="list-style-type: none"> • More detailed, searchable data • Free trial, download software packages • Multi-media, virtual reality for more realistic evaluations • Third party comments 	<ul style="list-style-type: none"> • Can't touch, feel, smell, try out physical items • Lack of usual physical leisure environments
<ul style="list-style-type: none"> • Personal touch 	<ul style="list-style-type: none"> • More personalized services 	<ul style="list-style-type: none"> • Direct contact with sales people difficult, unable

<ul style="list-style-type: none"> • Security and privacy 	<ul style="list-style-type: none"> • Simple to handle payments • Improved third party security services available 	<ul style="list-style-type: none"> • Concerns about payment security • Awkward to handle very small or very large payments

The cost of delivering products to the customer can range as high as 20 percent of the consumer dollar in physical transportation of goods alone. New intermediaries have been formed to help companies cut costs through electronic means, including companies such as i2 Technologies, which produces supply chain management software and system solutions. These can help to improve the speed at which orders are processed, thus improving a company's competitive position and reducing inventories.

The Web provides an opportunity for new forms of information products, but one of its most important contributions is the delivery of information products. For example, many media sources (television, radio, newspapers, magazines) operate Web sites that deliver news and other information in a variety of formats (video, audio, text, graphics), at little cost to the producers since they simply mimic the form being delivered through the primary media. Many of these products are free on the Web but, of course, they are accompanied by advertising directed to the population sector likely to be viewing them. Others require payment by subscription.

At least 50% of packaged computer software is sold through the Web, an ideal distribution channel for this product. Software can be advertised through a Web site at low cost, and detailed technical information can be made available for potential customers, who are often able to download evaluation copies. Software purchases on the Web ignore international boundaries, and require no movement of physical goods since the software, documentation, support services, and payments are all on-line.

Distribution channels have been streamlined for physical and information products, and for services, but in varying degrees. The main change in physical product distribution has been in cost reduction and service improvement, but financial, information, and travel services are now being linked more directly from producer to customer. Major changes have occurred in the distribution of information products, often in new forms, and carried out entirely as virtual transactions. The distribution network now covers the global market rather than a local or national market, and supplying products or services to this global market is causing profound changes to the marketing focus of many firms.

PRICING

E-commerce has made pricing more competitive due to the wide access to information afforded by related media, and it has also enabled new forms of pricing. There are three common pricing strategies, based on cost, value, or competition. Cost-based pricing simply applies a markup on the unit cost of an item. Value-based pricing reflects the valuation that customers place on a product. This valuation can be captured and analyzed through e-commerce tools such as analytical data mining. Competition-based pricing involves setting

prices at the same levels as the industry leaders.

Lower pricing through cost leadership can be supported by e-commerce through lower transaction costs as well as more easily obtained information. However, electronic commerce also gives customers the ability to shop around electronically in order to find the best deal. Customers also expect more free information and free services, putting more pressure on companies to pursue a cost leadership strategy.

New pricing models have been made feasible in consumer markets through electronic commerce, including on-line auctions and customer price setting. Web auction sites (ebay, etc.), offer computer hardware and software, antiques, collectibles, vacation packages, etc. Priceline has introduced a new way to sell airline tickets, based on prices specified by customers through the Web. This is not an auction, because consumers simply name their price and let Priceline find a seller. This approach can be used by both businesses and consumers to buy surplus goods or services at bargain prices, a win-win situation for both buyer and seller.

The competitive environment is changing. Barriers to entry are generally low, so the traditional advantages of large companies over smaller competitors are not as clear. E-commerce affects pricing of information and physical products more than financial services because the unit cost of production and distribution of the former is more directly affected by e-commerce. Also, information products supplied via e-commerce are often just different forms of existing media, distributed at minimal cost to the provider, although disruption of existing distribution channels can occur and must be understood in the context of existing distribution agreements. There are many evolving price issues, particularly in payments and taxation. As standards are implemented, new markets will open in the information products area. Few solutions have been proposed as yet for the taxation of information products and services, which can cross international and state/province boundaries unobserved through e-commerce communication networks.

PROMOTION

E-commerce has affected promotional methods, including advertising, personal selling, sales promotion, and public relations activities. E-commerce can facilitate customer-initiated information search, attract customer attention by providing free information, provide extensive and tailored product and service information, and enable the development of virtual communities. The element of promotion most affected by e-commerce is advertising. For example, Web marketing can facilitate personalization of consumer offering content, also known as one-to-one marketing.

Companies can choose "pull" or "push" techniques to provide information to customers in multi-media form. Pull techniques take advantage of Web user information searches. For example, search engines can be programmed to present advertisements that depend on key words entered by the user. Push techniques are used to gather interest profiles from users when they register for the services, a form of "permission marketing". The intent is to develop continuing relationships with customers. For example, Studentprofit.com encourages relationships by diverting some of its profits from consumer sales to students and schools designated by individual consumers. Microsoft Hotmail provides free e-mail delivery. PointCast provides software to support its service on user computers. Based on user profiles, this system periodically downloads current information such as news, stock market, and

weather reports.

Maintaining the personal touch through e-commerce can pay off in client relationship development. One approach is to send personal e-mail or to telephone potential customers who have visited Web sites and requested more detailed information on products or services. Another technique is to provide a live chat service via Internet or live phone, such as Etrade Canada and Nortel Networks to facilitate communications between customers and sales representatives. Sales force automation tools include the use of notebook computers to display information from local or remote company databases, or develop on-the-spot quotes for insurance or mortgage products.

E-commerce technology can be used to improve public relations cost-effectively by offering company information, profiles, and promotional information through e-mail, user newsgroups, or Web sites to customers or potential customers. An example is the Strategis site of Industry Canada, which provides businesses with relevant information and promotes Canadian business opportunities. Other promotion possibilities are available among people with similar interests or professional affiliations, supported by the idea of "virtual communities". Increasingly, Web sites support visitor interaction through newsgroups and chat lines. The promotional advantages of virtual communities are that users with common interests tend to return, and the site's focus helps to target advertising efforts. An example of a virtual community oriented towards health issues is Achoo.com. This site provides useful information on a variety of health topics, and appears to be supported through revenue from advertising targeted at healthcare consumers.

Promotion activities should portray a desirable image of the company being represented. For example, financial service providers wish to portray an image of security and stability. Thus, public relations will dictate a balance between virtual and physical worlds for the banking industry. Physical product providers must also balance the virtual world of e-commerce marketing and sales with the physical world of place. Conversely, information and information product providers can more ably sustain a pure virtual existence, reflected by the success of many new virtual media companies, with e-commerce offerings that duplicate or complement existing physical products.

PARTNERS

Partnering reflects the growing trend of companies to outsource activities, especially those that are not a part of the core competencies of a company. This concept includes intermediaries that support any of the components of the supply chain. Coordination of partners is typically through "virtual" communication links. Some suppliers have chosen to bypass intermediaries to deal directly with customers through e-commerce. However, additional costs that are incurred as a result include sales force increases, high volume transaction processing, and major changes in outgoing logistics. There is also the danger of fragmenting existing parallel marketing channels.

Although the impact on retail store intermediaries has not been very great as yet, as Internet consumer access grows and new forms of product information becomes available to support on-line shopping, retailing will be forced to change. Other intermediaries that support e-commerce transactions, such as banking and credit card firms, have evolved from previous more traditional operations, and courier services have improved service and cut costs for e-

commerce support. At the same time, entirely new intermediaries, such as Web directories, search engines, and auctions, have been formed to provide additional low-cost services to customers. A major point is that new forms of intermediaries have appeared and thrived in the world of e-commerce, indicating that transaction costs are not the only consideration for such services. It is very clear that customer and supplier perceptions of value and service also play important roles.

CONCLUSION

This analysis has not been exhaustive, since it is only intended to give a flavour of how marketing in the six P classifications has changed as a result of e-commerce. For example, the use of permission marketing to take advantage of the Web to build and sustain vendor-client relationships is a large and interesting topic in itself. And approaches that are particularly relevant to industries such as healthcare, education, finance, physical products, and information products have barely been mentioned here. The main point is that marketing has changed. Organizations that adapt their marketing approaches to the new environment will be able to leverage e-commerce to its fullest. Those that do not will be forced to take a reactive rather than a proactive stance to the new environment, resulting in less than optimal results.



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