

# **A New Marketing Paradigm for Electronic Commerce**

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## **Abstract**

The World Wide Web possesses unique characteristics which distinguish it in important ways from traditional commercial communications environments. Because the Web presents a fundamentally different environment for marketing activities than traditional media, conventional marketing activities are becoming transformed, as they are often difficult to implement in their present form. In this paper, we discuss the idea that these changes portend an evolution in the "marketing concept" and argue that in order for marketing efforts to be successful in this new medium, a new business paradigm is required. In this new approach, the marketing function must be reconstructed to facilitate electronic commerce in the emerging electronic society underlying the Web.

## **A New Marketing Paradigm for Electronic Commerce**

The World Wide Web, the first and current networked global implementation of a hypermedia computer-mediated environment (CME), is increasingly being recognized as an important emerging commercial medium and marketing environment (Hoffman and Novak 1996). An important consideration in the business analysis of the Web as a media environment is to recognize that it possesses unique characteristics which distinguish it in important ways from traditional commercial environments.

First, the Web is a virtual, many-to-many hypermedia environment incorporating interactivity with both people and computers. Thus, the Web is not a simulation of a real-world environment, but an alternative to real-world environments (see, for example, de Long 1995), where consumers may experience telepresence (Steuer 1992), the perception of being present in the mediated, rather than real-world, environment. As such, it allows users of the medium to provide and interactively access hypermedia content, and to communicate with each other. These unique forms of interactivity, "machine-interaction" and "person-interaction," respectively, have contributed to the rapid diffusion of the Web as a commercial medium in the last several years (Hoffman, Novak, and Chatterjee 1995).

Second, consumer capability in the virtual environment, as well as challenges posed by the environment, introduce a competency issue which does not exist so fundamentally in the physical world. This competency issue involves flow, which is the "process of optimal experience" achieved when a motivated consumer perceives a balance between their skills and the challenges of their interaction with the CME (Csikszentmihalyi 1990). Flow is a central construct when considering consumer navigation on commercial Web sites (Hoffman and Novak 1996).

Third, within this interactive virtual environment, consumers actively engage in the process of network navigation. This behavior can be contrasted with the more passive media experience of television viewing, for example. These active behaviors including both experiential (e.g. "netsurfing") and goal-directed (e.g. "online shopping") behaviors

compete for consumers' attention. These two broad categories of online behavior have important implications for the commercial development of the Web.

These new concepts, then: 1) interactivity in a many-to-many communications environment, 2) flow, and 3) experiential and goal-directed behaviors, mean that the World Wide Web presents a fundamentally different environment for marketing activities compared to traditional media. Thus, conventional marketing activities such as advertising may be difficult to implement in their present form and require reconstruction in forms more appropriate for the new medium. In this paper, we discuss the strategic implications of these new concepts for the commercial Web environment and examine how the marketing function in this new medium is being transformed as a result.

Our paper is organized as follows. First, we examine how the World Wide Web as a commercial medium and market is unique. Next, we discuss the ways in which the marketing function must be reconstructed to accommodate the unique features of this new medium. Finally, we discuss the unfinished business that lies ahead.

## **The Web is Unique**

### **A Many-to-Many Communications Model**

The traditional marketing communications model for mass media (e.g. Lasswell 1948; Katz and Lazarsfeld 1955) holds that mass communication is a *one-to-many* process whereby a firm (F) transmits content through a medium to a large group of consumers (C). As sketched in Figure 1, three key features underlie all models of mass media effects: 1) the medium is important only as a conduit for the transfer of information from (F) to each (C), 2) the consumers, literally an "audience," are considered to be homogeneous in their tastes with respect to the information being transmitted, and 3) there is no interaction present among consumers and firms.

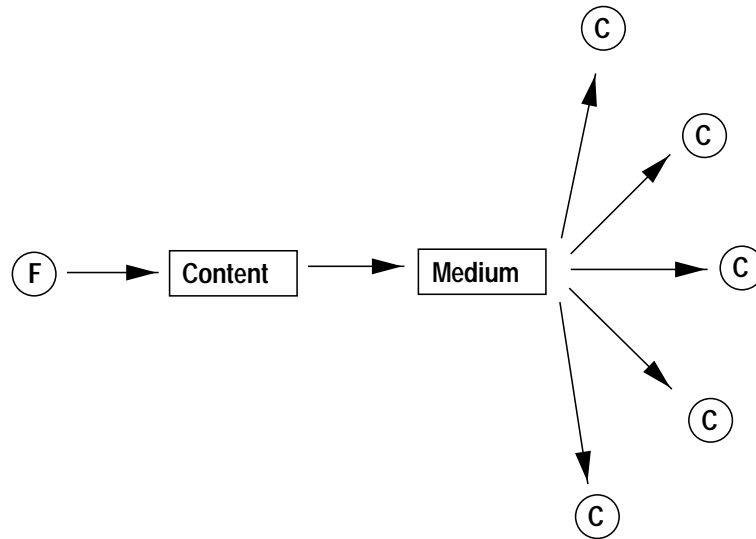


Figure 1  
 Traditional One-To-Many Marketing Communications  
 Model for Mass Media

originally published in Hoffman and Novak (1996) by the American Marketing Association.

Figure 2 shows the new model underlying marketing communications in a hypermedia CME like the Web (Hoffman and Novak 1996). Here we see a *many-to-many* mediated communications model in which 1) consumers can interact with the medium and with each other, 2) firms can provide content to the medium and interact with each other, 3) firms and consumers can interact, and in the most radical departure from traditional marketing environments, 4) *consumers* can provide commercially-oriented content to the medium. In this mediated model, the primary relationships are not between sender and receiver, but rather with the CME with which they interact. In this new model, information or content is not merely transmitted from a sender to a receiver, but instead, mediated environments are created by participants and then experienced.

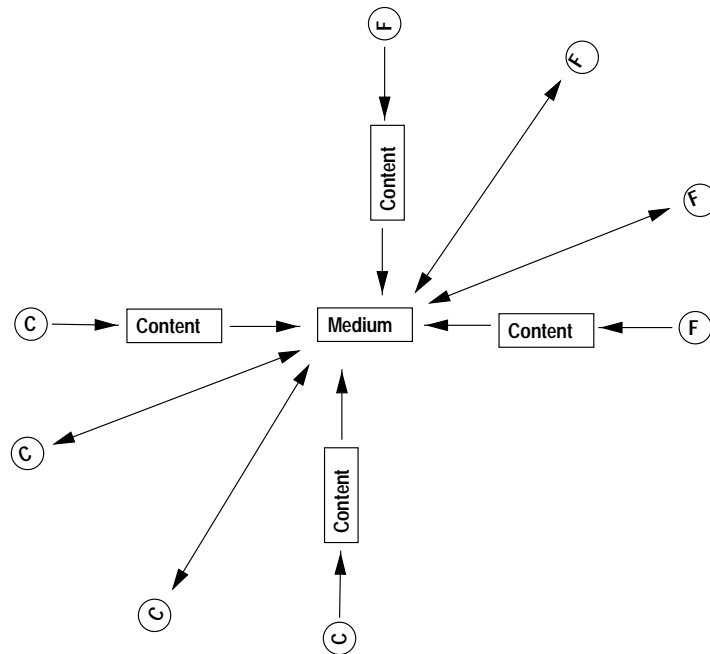


Figure 2  
A New Many-To-Many Model of Marketing Communications

originally published in Hoffman and Novak (1996) by the American Marketing Association.

### Flow in Computer-Mediated Environments

Central to the marketing question of how to develop the Web into a worthwhile consumer experience is the idea of flow (Csikszentmihalyi 1990; Ghani, Supnick, and Rooney 1991; Trevino and Webster 1992; Webster, Trevino, and Ryan 1993), the concept of optimal experience extensively researched in a variety of contexts for the last twenty years. Recently, Hoffman and Novak (1996) extended and developed the flow construct in the context of computer-mediated environments like the Web. They identified four properties which define flow during network navigation. Flow is: 1) characterized by a seamless sequence of responses facilitated by machine-interactivity (the clicks and keyboarding that characterize interacting with the computer); 2) intrinsically enjoyable;

3) accompanied by a loss of self-consciousness; and 4) self-reinforcing.

Flow is important because it has a clear set of antecedent conditions and consequences that have implications for Web-based marketing efforts. For the flow state to be experienced, the consumer must perceive skills and challenges to be in balance and above a critical threshold and the consumer must be paying attention. The consequences of flow in CMEs (Hoffman and Novak 1996), including increased learning, increased exploratory and participatory behaviors, and more positive subjective experiences, are important because they suggest that a critical objective of a commercial Web site is to facilitate the flow experience. For example, we may predict that when in flow in a particular Web site, a consumer will be more likely to remember the brand name, feel good about the brand, and be more likely to return on a subsequent occasion.

### **Goal-Directed and Experiential Navigation Behaviors**

Hoffman and Novak (1996) observed that consumers engage in two general categories of behavior in computer-mediated environments like the Web: goal-directed and experiential. Goal-directed behavior corresponds to a directed search mode of network navigation in which the consumer is extrinsically motivated to find a particular site or piece of information on a site. On the other hand, experiential behavior is intrinsically motivated and corresponds to a nondirected, exploratory search mode.

Both types of network navigation behavior are relevant because Hoffman and Novak (1996) hypothesize that for some, if not most, consumers, experiential behavior (i.e. browsing and "Net surfing") dominates a consumer's early flow experiences on the Web. But over time, as consumers learn more about how to navigate in a CME, goal-directed behavior will also lead to flow experiences. This has important implications for the types of commercial Web sites that are designed to attract new users to the Web. For example, the exploratory, fun experience that facilitates flow is one way consumers learn how to use the Web and become comfortable with it over time. This implies that much discussed applications like home banking and home grocery shopping (goal-directed activities) will

not be sufficient to stimulate adoption of this medium by new and inexperienced users.

## **Reconstructing the Marketing Function for New Media**

We argued above that the World Wide Web is a unique, new communications medium, distinct from traditional media, with important implications for marketing activities. In this section we discuss the idea that marketing activities are difficult to implement in their present form and must be reconstructed into a paradigm more compatible with new media environments like the Web. First, we argue for an evolution in the marketing concept so that business may better include the consumer in the marketing process. Then, we discuss the factors marketers must consider as they labor to recreate marketing activities in forms more appropriate for the Web, including creating the infrastructure for electronic commerce, developing interactive customer environments, enabling innovative content, and constructing new models for the measurement of consumer behavior in new media.

### **The Evolution of the Marketing Concept**

Market orientation operationalizes the well-known "marketing concept" (see, for example, Houston 1986) in which firms attempt to uncover and satisfy customer needs at a profit, and refers to the "organization wide generation of market intelligence pertaining to current and future customer needs," along with the dissemination and responsiveness of the organization to such (Kohli and Jaworski, 1990). Kohli and Jaworski (1990) suggest that a market orientation will be more related to business performance under conditions of intense competition and unstable market preferences. Since these conditions, along with technological uncertainty, face and will continue to face firms developing new offerings in the Web for years to come, and since a market orientation can represent a significant competitive advantage for a firm in such cases, it follows that firms interested in Web-based business efforts adopt a market orientation.

Yet, surprisingly, as it is currently evolving, not enough is being done to include



the consumer in the development of emerging media (Dennis & Pease 1994). Instead, developments are being driven largely by the one-to-many mass communication model represented in Figure 1 that presumes the growth of a passive mass "audience" rather than heterogenous users seeking varied experiences. Yet in order to adopt a market orientation, firms must understand not only their customers, but also the environment in which they interact. However, very little in the way of online consumer research is currently being conducted, perhaps because in information intensive environments, the marketing function is often performed by other functional areas (Glazer 1991) that may not be as familiar with the marketing function as marketers.

The current technological and market turbulence of the Web represents more than mere technological evolution. This is because the computer-mediated environment underlying the Web consumer experience is many-to-many, as sketched in Figure 2. Thus, we argue that successful Web marketing efforts will require an evolution in the marketing concept to where the firm not only attempts to discover and meet customer needs profitably, but also engages in marketing activities that are consistent with the new metaphors that are arising in this emerging medium.

For example, consider a current practice that reflects traditional models. A well known difficulty from a business perspective is that most Web sites have been unable to induce visitors to register, especially when no payment is required to consume content. But if the firm does not know, at a minimum, the characteristics of those visiting its Web site, application of the marketing concept becomes challenging. One proposed solution is to centralize the registration process, collecting demographic and psychographic information from consumers for resale at both the within-site and across-site levels to Web sites interested in linking consumer navigation and transaction behavior with consumer marketing variables (Internet Profiles Corporation 1996).

But a new paradigm for electronic commerce constructed from considering the Web as a many-to-many communications medium might suggest *decentralizing* the registration process so that the *consumer* retains ownership of his or her personal information and

benefits by selling it to commercial Web sites who may desire it. Developing such a concept would not only facilitate registration, but also allow the consumer to participate in and benefit from the process.

In such cases then, the role of marketing moves from "merely" satisfying customer needs to including an altruistic, cooperative goal of facilitating the development of the market itself, one that explicitly includes the consumer. This is consistent with a recent report by the National Academy of Sciences (U.S. Congress 1994): "In the new business environment, cooperation may prove more rewarding than competition, and information-sharing more fruitful than information control."

Several propositions from Glazer (1991) regarding information intensive marketing environments support our extended marketing concept. Specifically, information leads to "issues of access sharing, and creating opportunities for use." Greater involvement in strategic alliances is proposed to lead to an "extended cooperation framework." Further, in information-intensive environments such as the World Wide Web, attention will be focused less on competitive strategy and more on cooperative strategy.

Both theoretical and empirical research is necessary to more fully investigate our proposition that the marketing concept must be broadened to include new views of 1) the consumer as an active individual in an interactive process, and 2) effective business strategy in an emerging many-to-many medium as a cooperative effort that includes the customer.

### **Transforming Marketing for New Media**

The idea that marketing and communication activities in information-intensive environments must be transformed and reconstructed has been recognized by numerous researchers (e.g., Glazer 1991; Reid 1991; Blattberg, Glazer and Little 1994; Stewart and Ward 1994; Venkatesh, Sherry, & Firat 1993; van Raaij 1993). For example, Reid (1991) has argued that in order to maintain a virtual community on the Internet, users have had to deconstruct and reconstruct the nonverbal communication that exists in interpersonal

communication by typing their feelings out in ascii and constructing a notational system to convey emotion (e.g. emoticons such as "smileys," as discussed in Reid 1991). In addition, the online medium has the potential to transform the individual's identity, resulting in a relative anonymity of users in these environments. In a marketing context, this hinders personal selling at the same time that it encourages negative word-of-mouth activity (i.e. brand or corporate "flaming").

Most important from a marketing perspective, however, is the manner in which the Web transforms the marketing function. For example, the many-to-many communication model turns traditional principles of mass media advertising (based on the one-to-many communication model) inside out, rendering application of advertising approaches which assume a passive, captive consumer difficult, if not impossible (Hoffman and Novak 1994).

Thus, marketers must reconstruct advertising models for the interactive, many-to-many medium underlying the Web. Such models must account for the fact that consumers actively choose whether or not to approach firms through their Web sites, and exercise unprecedented control over the management of the content they interact with. Informational and image "Internet presence sites" (Hoffman, Novak and Chatterjee 1995) provide examples of such new forms of Web-based advertising.

To a large extent, many of the original structures that have been constructed to facilitate electronic commerce on the Web are characteristic of a primitive, simple society, bound by "mechanical solidarity" (Durkheim 1933), with a common consciousness and internalized set of shared values. These shared values arise largely from the metaphors in place in traditional media. Thus, banner ads on sponsored content sites are referred to as "billboards," commercial Web providers are called "publishers" and advertisers and Web publishers alike seek measurement models that are consistent with traditional broadcast and print media (Novak and Hoffman 1996). In large part, we believe these origins account for the current trend toward viewing the Web as another mass media that can deliver "eyeballs" to advertisers. However, as the Internet continues to evolve into a complex, heterogeneous virtual society, "organic solidarity" will develop from an

increasing interdependence between people pursuing different goals. This produces an increasing division of labor, which will transform existing paradigms and require new models of cooperation, competition, and profitability to emerge.

Therefore, marketers should focus on playing an active role in the construction of new organic paradigms for facilitating commerce in the emerging electronic society underlying the Web, rather than infiltrating the existing primitive mechanical structures. Consider the nascent attempts by previously proprietary commercial online services to exercise control over both consumer access to the Web and the ability of consumers to provide content to the Web. Increasingly, the commercial online services are becoming consumer gateways to the Web and becoming more like user-friendly Internet Service Providers than closed, proprietary networks.

Yet, as these services reinvent their businesses in the context of many-to-many decentralized open networks, they are beginning to reshape themselves under a broadcast cable model in which a series of Web site selections will be offered to consumers as "channels" easily accessible by a simple point-and-click interface. Web sites not endorsed may be accessible, but would require knowledge of the URL; it would be less likely that consumers would seek out such content. In some cases, consumers may not even know additional content exists, let alone how to access it. Such attempts, following from the traditional one-to-many mass model of communication effects, obviously do take full advantage of the medium's unique features and hold enormous implications for how the Web will develop as a commercial medium. At a minimum, it implies the development of homogenized content that would appeal to a mass audience, with attendant negative implications for niche or small Web sites lacking mass audience appeal. This erroneous view of the Web as a traditional broadcast medium also largely explains the United States Justice Department's recent efforts to censor "indecent" content on the Internet (*American Civil Liberties Union, et.al. v. Janet Reno* 1996).

In contrast, the effective marketer will be actively constructing new models for marketing on the Web, based upon an increasingly diverse and complex virtual society.

Such efforts will contribute to the establishment of organic solidarity within the heterogeneous market defined by segments of consumers and firms doing business on the Web.

It is still too soon to predict the form these efforts might take, even as the business models emerge (Hoffman, Novak, and Chatterjee 1995). Yet it seems clear that 1) steps to build the infrastructure for electronic commerce; 2) mechanisms that take advantage of the medium's ability to be truly interactive; and 3) attempts to develop stimulating and exciting content-rich sponsored environments, hold tremendous promise toward this goal.

### *Create the Infrastructure for Electronic Commerce*

In a recent report on Electronic Enterprises, the Office of Technology Assessment (U.S. Congress 1994) noted that "because exchange transactions will increasingly be carried out electronically and online, the network will in many instances serve as the market." While it has been said for traditional media that "the medium is the message" (McLuhan 1964), with the Web it is also true that "the medium is the market." The establishment of broadly-based, "integrated destination sites" (Hoffman, Novak, and Chatterjee 1995) like GNN ([www.gnn.com](http://www.gnn.com)), HotWired ([www.hotwired.com](http://www.hotwired.com)), and Pathfinder ([www.timeinc.com](http://www.timeinc.com)) support this observation and lead us to argue that as media increase in their interactive and navigational capabilities, they move from serving as communication and marketing channels to serving as markets.

Press (1993) speculates that the Internet as a marketplace has the potential to make markets more efficient. This is particularly so for the Web because it offers not only the opportunity to provide full information to consumers about goods and services, but lends itself to rich detail and specificity regarding such information, especially compared to traditional media. There is also greater probability of a well-informed consumer, since the consumer has greater control over the search process. Such control is likely to facilitate a highly developed form of, for example, price comparison shopping. Thus, compared to conventional markets, the cost of information should be lower and the

information quality should be higher (and closer to "perfect"), leading to a higher degree of market efficiency (Stigler 1961). Therefore, the market represented by the Web also has the potential to be a more efficient market than conventional markets. (See, however, Schickele (1993) for an opposing view point.)

However, before this can occur, the infrastructure must be built. The current difficulty transmitting sensitive data, such as credit card numbers and the like, securely over the Internet is transforming traditional payment processes. Until secure systems are widely implemented on the Web, the lack of such represents a significant barrier to adoption of the Web for commercial transactions. Thus, new systems must be developed to permit virtual transactions directly over the network. These may take the form of "digital cash" (e.g. Medvinsky and Neuman 1993; Rose 1994) or credit card number encryption, allowing commercial transactions to take place directly rather than through parallel traditional channels such as 1-800 telephone numbers.

Equally important will be online dynamic content directories both within a site and across the Web. With over 30 *million* Web pages on 275,600 servers indexed by Digital Equipment Corporation's Acta Vista search index ([www.altavista.digital.com](http://www.altavista.digital.com)) as of October 11, 1996, and the number growing daily, efficient ways to help consumers sort and search through the myriad of offerings available will be critical. Research in consumer decision making suggests that, in the absence of heuristics, decision effectiveness degrades in the presence of too much information (Keller and Staelin 1987; Keller and Staelin 1989; Meyer and Johnson 1988). Thus, the challenge for marketers will be to develop, in conjunction with consumers, rule-based systems for the organization of content that exploit the principles of network navigation and facilitate flow (see Hoffman and Novak 1996 for more discussion).

### *Develop Interactive Customer Environments*

Chatterjee and Narasimhan (1994) observe that as a distribution channel, the Web possesses 1) extremely low entry and exit barriers for firms; 2) increasing irrelevance of

distribution intermediaries; and 3) the capability to not only keep pace with market change, but accelerate it. Because the Web increases the power of the consumer and decreases the power of the firm, compared to traditional channels of distribution, the consumer and the firm approach "symmetrical power" and the best communication efforts are likely to be "collaborative" rather than "autonomous" (Mohr & Nevin 1990).

Glazer (1991) notes that in the presence of higher information intensity, channel power shifts in favor of consumers and a breakdown occurs in formal distinctions between producer and consumer. In the information intensive Web environment, the firm is no longer broadcasting a single communication to many consumers, but in effect tailoring its communications according to consumers' varied interests and needs. This is currently implemented through the unique process of network navigation in which the consumer chooses what information (if any) to receive from the firm. Thus, marketers must begin to examine the manner in which these more collaborative communication efforts should proceed.

These shifts in channel power hold important implications for consumer participation in the marketing process. For example, consumers may collaborate not only in idea generation and product design, but also in the marketing communication effort itself. This is because interactivity in the Web gives consumers much greater control of the message. Such control may manifest itself in startlingly new ways: for example, it is feasible for consumers interested in purchasing big-ticket durables such as cars or appliances to broadcast their interest and solicit open bids from different firms (Cutler 1990). Similarly, Digital has enjoyed success with their innovative program of making the Alpha AXP computer systems available to potential customers for "test drive" over the Web (Jarvenpaa and Ives 1994).

Such activities are possible because the process of network navigation in the Web is characterized by open access to information. The original motivation for developing an "internetwork" of computers, on which the Web is based, was to enable geographically dispersed computers representing diverse platforms to link and communicate so they

could economically share costly resources (Hafner and Lyon 1996; Roberts 1988). The Internet thus developed in a rich and exciting atmosphere of intellectual curiosity fostered in an unconstrained and creative environment (Licklider 1988; Miya 1990).

### *Enable Innovative Content*

Marketers can utilize the opportunities for customer interaction inherent in the Web in numerous ways, including 1) the design of new products; 2) the development of product and marketing strategy, and 3) the innovation of content. The evolution of content on the Web is dependent upon not only the evolution of existing metaphors and communication codes from traditional media, but also new techniques and conventions inherent in the possibilities of the medium itself (Biocca 1992). One implication of this is that the content (and business models) that will make the Web commercially successful have likely not been invented yet, and may require more than a simple continuous innovation of existing content (Grossman 1994).

As evidence that a discontinuous evolution in content will be required to fuel the growth of the Web, witness the difficulties experienced in applying traditional content to the alternative new interactive multimedia, such as pay-per-view, video-on-demand, and interactive TV. Few applications have yet to meet with consumer acceptance in test markets, and even fewer have come online in any significant way (Schwartz 1994). To generate and evaluate "future content," the consumer must somehow be placed in a future frame-of-reference. Promising product development techniques include Information Acceleration (Urban, Weinberg & Hauser 1994; Hauser, Urban and Weinberg 1993), and virtual reality and role-playing "informances" approaches being developed at firms such as Interval Research Corporation (Kirkpatrick 1994).

Hoffman and Novak (1996) have argued that flow will lead to increased quality time in a hypermedia CME like the Web. Thus, content developers should seek to facilitate the flow experience, as it has numerous positive consequences. One important consideration is whether and at what point in the process consumers are likely to become



bored (e.g. when network navigation is not sufficiently challenging) or anxious (e.g. when network navigation is too difficult), increasingly the likelihood of "site jumping."

### *Construct New Marketing Models*

The limitations of relying on old paradigms become apparent when we consider the "more is better" logic implicit in current approaches to measuring consumer activity on sponsored content Web sites. Driven by traditional mass media models, exposure-based counting methods implicitly seek to achieve unstated mass audience levels, since in traditional media, "advertising effectiveness" is tied to ratings or circulation models where larger numbers are preferred. Yet on the Web, advertising effectiveness can be explicitly tied to customer response and the possibility exists of developing new measurement systems that capture the value of a single consumer's visit and subsequent response in new and innovative ways.

New bases for market segmentation will also be needed for Web-based marketing efforts because consumers vary in their ability to achieve flow. Research can determine the variables that relate to a consumer's propensity to enter the flow state and such information can be used to develop marketing efforts designed to maximize the chances of the consumer achieving flow. Since "repeat purchase," that is, repeat visits to a particular Web site, will be increased if the environment facilitates the flow state, the marketing objective on the first visit (i.e. "trial"), will be to provide for these flow opportunities.

Pricing strategy is also relevant here. Commercial online service pricing models are largely based upon connect time and usage charges. Such schemes have the effect of discouraging usage and, increasingly, consumers are demanding flat-rate pricing schemes. In the short run, flat-rate systems encourage consumer experimentation and system use (National Academy of Sciences 1994, Chapter 5). Continued use feeds demand because, as the anecdotal record shows, usage tends to be "addicting." This suggests that pricing algorithms that encourage browsing will encourage usage (Hawkins 1994). In the long-run, usage-based pricing may be more appropriate as the Web matures as a medium,

one day becoming as ubiquitous as the telephone (National Academy of Sciences 1994, Chapter 5).

### **The Unexplored Frontier**

We have argued that the traditional one-to-many media communications model, with its attendant implications and consequences for marketing theory and practice, has only limited utility in emerging many-to-many media like the World Wide Web, and that a new marketing paradigm is required for this emerging communication medium. In this paradigm, new rules of cooperation and competition can emerge in which marketers focus on playing an active role in the construction of new standards and practices for facilitating commerce in the emerging electronic society underlying the Web.

As a first step, we have outlined a number of research issues that deserve further study, including the necessity of broadening the marketing concept, constructing efficient markets on the World Wide Web, developing innovative and interactive commercial environments, and building new models for measuring consumer behavior in such environments.

The Web as both medium and market is more likely to be successful if it frees consumers from their traditionally passive role as receivers of marketing communications, gives them much greater control over the search for and acquisition of information relevant for consumer decision making, and allows them to become active participants in the marketing process. Firms have the opportunity to reap the benefits of this innovation in interactivity by being closer to the customer than ever before.

However, much of the current rush to erect commercial Web sites and develop standards for this new medium misses an important point. That is because most activity is based on a still primitive commercial infrastructure based upon old paradigms from traditional markets. In its current incarnation, most consumption behavior on the Web takes place divorced from the broader social contexts that consumers exist in.

In this sense, commerce in cyberspace is incomplete, and many critical social issues

remain only weakly addressed. These include privacy, equal access, social interaction, presence and identity, and consumer confidence, and the issue of local standards applied to global markets. But if it is the broader social context, that is, the sense of connection with other humans and with society, that consumers ultimately desire from the Web, rather than the ability to purchase goods and services, then the full benefits of the Web will not be realized until the medium encompasses the true richness of human interaction.

This means that the Web must become a virtual environment in which individuals and firms can develop persistent identities and reputations, in the same manner that it is done in the physical world (Electric Communities 1995). We believe that the revenue opportunities and product development possibilities from commercializing the Web in the context of human society dwarf the currently available business options.

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