Internet Marketing, Business Models, and Public Policy

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The authors examine the role of the Internet in marketing in the context of business models that are economically viable. This examination raises questions regarding the degree to which the Internet is genuinely different and whether it will be a boon to consumers and investors. Economic necessity associated with the need to obtain and maintain profit streams suggests that Internet markets will likely be more similar to than different from traditional markets. The authors challenge assumptions regarding the role of the Internet in creating frictionless markets that benefit consumers and the role of personal information and privacy on the Internet that are necessary conditions for potentially profitable business models. The authors also discuss subsidization of Internet businesses in the context of public policy and examine other issues related to the relationship of current models of Internet business to public policy and consumer welfare.

A common assumption in much of the literature on the Internet as a marketing and business tool is that it is a revolutionary technology that will be a boon to consumers and investors. For example, Hoffman and Novak (1996, p. 51) observe that the Web is a revolutionary new medium that has "far reaching scope and potential for transformation of the marketing function." Similarly, Port (1999, p. 105), writing about the Internet for *BusinessWeek*, declares that "the customer is becoming the center of the entire business universe." Investors cannot escape news of the latest e-business or dot-com initial public offering, and growth in the number and market capitalization of e-businesses recently led venerable *Fortune* magazine to create its Fortune*-50* index.

Although there is no doubt that this widespread Internet commerce is growing rapidly and changing commerce in a variety of ways, it is also useful to interject a modicum of reality. The most significant source of growth of business on the Internet is in business-to-business commerce rather than business-to-consumer commerce. Business-to-business commerce on the Internet was estimated to account for $43 billion in 1998 and is forecast to grow to $1.3 trillion by the year 2003, though this will still be less than 10% of all business-to-business commerce (Forrester Research Inc. 1998). It is useful to note that a substantial portion of this growth in business-to-business e-commerce is associated with the transfer to the Internet of transactions that already occur electronically through existing electronic data interchange (EDI) systems. It is not at all clear how much business-to-business commerce will be conducted on the Internet that would not have occurred through some other electronic medium. Undoubtedly, the ease of access, lower cost, and open architecture of the Internet will facilitate and speed some migration from nonelectronic exchange media to electronic exchange that might not otherwise have occurred as quickly. It is certainly the case that some providers of proprietary EDI software are experiencing declines in market share as a result of the Internet. Thus, it is useful to recognize that this growth market may be characterized more by changes in market share from other technologies to the Internet than by development of new markets.

In contrast, business-to-consumer commerce on the Internet was estimated at only $8 billion in 1998 and is forecast to grow to only $108 billion by 2003 (Forrester Research Inc. 1998). Although this is indeed rapid growth, there is also a need to put this business in larger perspective. The forecast for consumer-focused e-commerce in 2003 will still leave the entirety of business-to-consumer commerce less than half the size of forecasts of Wal-Mart's sales at the same point in time. Indeed, Wal-Mart's sales revenue will probably top $165 billion in 1999 and will likely reach $200 million in 2000. As with business-to-business Internet commerce, much of the growth in business-to-consumer Internet commerce is the result of migration of consumers from other sources of supply to the Internet rather than increased demand.

The migration of business and consumer demand from more traditional sources of supply to the Internet is an important phenomenon that should not be ignored. Such migration will result in some firms that are net winners and some firms that are net losers. Thus, businesses and other organizations ignore the Internet at their peril. However, e-commerce firms that ignore traditional business models probably will not find great success over the long run. Despite the rapid growth of consumer-focused Internet commerce and the accompanying extraordinary market valuations of some Internet companies, it is not yet clear how much money is to be made in consumer-focused Internet commerce. In 1998, the top 25 Internet companies generated $5 billion in revenue and lost $1 billion (*The Economist* 1999). Of the 50 companies that constitute the new Fortune*-50*, 19 lost money in the most

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recent year of reporting, and this list includes some older and well-established companies, such as AT&T, Lucent Technologies, IBM, Microsoft, Intel, and Charles Schwab, among others. Of the 19 "e-companies" on the list, 11 were losing money. The market capitalization of the 199 Internet companies tracked by Morgan Stanley was $450 billion in 1999. These 199 companies had annual sales of just $21 billion and losses of $6.2 billion (Kilpatrick 1999). Internet failures are also beginning to receive attention. Levi Strauss stopped selling directly on the Internet after a significant investment in a Web site that produced disappointing sales. Starbuck's backed away from a retail presence on the Internet after investors pummeled its stock in response to the announcement of its Internet strategy.

Some businesses have been successful on the Internet, and these are widely reported in the popular media. As was the case for motion pictures and recorded videocassettes in the past, pornography is playing a major role in the development of consumer businesses on the Internet; it was a $1 billion business in 1998 (Forrester Research 1998). Dell Computers is a well-publicized success, though it is less widely reported that only 40% of this "e-tailer's" revenue is generated by its Web site (Chen 1999). Although 40% is a significant proportion of business, it is a far cry from making Dell a pure e-business. America Online (AOL), Charles Schwab, Amazon.com, Yahoo, and eBay have developed strong brand names, but this has not guaranteed profits. In the four quarters ending in June of 1999, Amazon.com lost almost $300 million on revenues of just over $1 billion, and profitability is not yet in the projectable future. Perhaps in a sign of things to come, Schwab has pulled its Internet trading subsidiary back into its mainstream business operations and is no longer a pure e-business. Knight/Trimark has profited by becoming the back office for much of the trading that is done online; it handles almost 20% of all Nasdaq trades (Chen 1999). CNet has managed to become profitable through an alliance with NBC television.

Careful analyses of these various e-businesses reveals that they are quite different. Although all share the use of information technology and the Internet plays a central role in their businesses, the types of customers served, the kinds of products and services offered, and the way these firms make money (or do not) vary widely. This raises the question of whether there is an e-business or Internet business model or whether information technology and the Internet simply provide a new way to offer customers products and services they already seek from other sources and, perhaps, make money using variants of well-known business models. It also raises questions about whether the Internet will really be the boon to consumers and investors that its advocates suggest.

Although there is no doubt that the Internet is becoming an important channel for communication and distribution (Gantz and Glasheen 1998; Jupiter Communications 1998), it has not repealed basic laws of economics. It is also not at all clear the extent to which it is a really different medium, as some serious scholars and much media hype have suggested. In addition, the nascent view that the Internet will have a positive impact on consumer welfare is open to question. In this article, we attempt to examine consumer-focused Internet commerce—that is, business that is primarily focused on the consumer or household—in the context of the economic realities imposed by viable long-term business models. We suggest that though the Internet will produce some changes in marketing and business models, it is likely to produce very similar outcomes with respect to consumer behavior and consumer welfare as other modes of transactions. We also suggest that the underlying economics of viable business models of consumer-focused commerce on the Internet have significant public policy implications that are only now beginning to emerge. These implications may not be radically different from those that have arisen in other business contexts, however. Finally, we suggest that some business models of Internet commerce are predicated on questionable assumptions about consumers' willingness to share information and to forgo long-term benefits for short-term gains.

Is the Internet Really Different?

The Internet is a new technology that makes some things simpler, cheaper, and easier. It is a new way for businesses to communicate with consumers and for consumers to communicate with one another and a new way to sell products and services to consumers, but it joins other media and distribution channels as vehicles for these tasks. It has some features, such as hyperlinks, that are different from those found in other media, but other media also have unique characteristics. The Internet also represents a combination of characteristics of other media, such as radio, television, print, and telephone. It is less clear that it is truly different on key dimensions related to the consumer behavior (see Table 1). Consumers have already begun to provide evidence that they have integrated the Internet experience into their broader media use. Almost half of all personal computers are in the same room as the television set, and simultaneously viewing television and accessing the Internet is common (Cox 1998).

Table 1. Comparison of Traditional Media with the Internet

Key Dimensions	Print	Broadcast	Telephone	Internet
Ability to market over vast geographic areas to vast populations for low per-head impact costs	No	Yes	No	Yes
Interactivity	No	Currently limited	Yes	Yes
Density: the amount of information that can be presented over a given medium	Moderate	Moderate to high	Low	High

Certainly the data on consumer response suggest that consumers do not respond remarkably differently to the Internet than to other media. Drèze and Hussherr (1999) find responses to advertising on the Internet to be similar to responses to advertising in other media, except that advertising on the Internet appears to be easier to ignore. Lynch and Ariely (2000) find that consumers are less price sensitive when providers on the Internet offer different products, a finding that directly parallels findings in more traditional retail settings.

Keeney (1999) has suggested a variety of ways the Internet might create value for consumers. These include minimizing errors in transactions, lowering costs of products and services, designing optimal products or product bundles, minimizing shopping time, and increasing the enjoyment of shopping, among others. These various outcomes are undoubtedly valuable to consumers. The Internet is not unique in its ability to deliver any of these outcomes, however, though it is a means for doing so and may enjoy some advantages relative to other means in some situations and among some consumers. Nevertheless, the Internet is at a decided disadvantage, because it cannot serve consumers without access (still a majority) or provide such sensory information as taste, smell, touch, and texture.

The Internet provides a means to create some new markets that might not have been economically viable in the past. For example, by reducing the influence of physical distances between buyers and sellers, the Internet may create markets that involve distant parties that might not have flourished at a local level. Thus, a market, or at least a larger market, for Pez dispensers among collectors becomes viable on the Internet when it is at best small in other channels. It is not clear whether the buyer or seller is better served by this change. A dedicated collector may have to pay more for an item when forced to bid against a larger and better-informed set of other competitors.[1] Similarly, by reducing transaction costs, markets that might have been prohibitively expensive may become viable. The creation or expansion of such markets is likely to be restricted to relatively specialized goods and services, however. Examples in business-to-business commerce include the development of sites for spot markets for such services as truck transportation (the National Transportation Exchange) and media buying (Adauction.com). The reduction of the influence of geographic dispersion and of transaction costs may also increase the choices available to consumers in existing markets. The availability of such choices might also place downward pressure on prices; greater competition could thus serve consumer welfare by lowering prices. Such effects on consumer welfare are not in the long-term interests of firms, however. The need for profits will almost always push firms in the direction of competing on factors other than price, because only the low-cost producer survives in a pure price market.

To the extent that the Internet lowers the costs of serving consumers and these cost savings are, at least in part, passed along to consumers, there is a benefit to consumers. However, home delivery costs may not be less expensive than maintaining a local bricks-and-mortar location, especially if consumers require service or immediate availability. E-businesses are increasingly turning to the same distributors and distribution methods that traditional retailers and direct marketers use (Biederman 1999), and existing distribution agreements in some industries place e-businesses in the role of an additional intermediary. For example, under existing franchise agreements, online car sellers must purchase the automobiles they sell from dealers (Bradsher 2000). Thus, the consumer buying online must pay a profit margin to both the dealer and the online vendor. The Internet will change the economics of many businesses, but it may not radically alter the economics at the level of the end user in many categories.

Some enthusiasts have also suggested that the Internet will make information more widely and more quickly available. This might include information from other consumers and include various tools for more efficient and effective processing of information. Indeed, various ratings of Web sites have already emerged to help consumers identify credible and reliable sites for information. Thus, it is argued, consumers will enjoy lower search costs and make more efficient decisions even as their decisions become more nearly optimal. If these outcomes are realized, there will be a net increase in consumer welfare. There are reasons to believe that such outcomes are not in the best interest of sellers, however. Making it easy for consumers to find the lowest price on identical goods is economically viable only for the low-cost competitor in a market.

An increase in the availability of information is not in itself a boon to consumers. Web sites are growing faster than they can be cataloged, and various techniques and economic incentives now operate to increase the likelihood that a site will be cataloged and occupy a coveted position near the beginning of a list of sites identified by a search engine or portal. Such arrangements are not visible to consumers and have the potential to reduce the amount of search on the part of consumers to suboptimal levels. In addition, even as more information becomes available and accessible through the Internet, so too will misinformation. As Tillman (1995) notes, "Within the morass of networked data are both valuable nuggets and an incredible amount of junk." The availability of more choices and greater information may increase the costs of consumer search and diminish the likelihood of a near-optimal decision. This is especially likely to occur if information and alternatives are presented in noncomparable forms. Alba and colleagues (1997, p. 50) observe that an "irony of HIS [home interactive shopping] could be that the technology that enables consumers to make more intelligent comparisons in some cases can induce manufacturers to take actions intended to produce an opposite outcome in other cases."

A price that appears to be the lowest for a particular product may not be the lowest when separate but necessary shipping and handling charges are included. There is also growing evidence of e-firms attempting to reduce the ability of competitors and consumers to access and use comparable information. For example, eBay has sought copyright protection of its auction information to prevent aggregators

[1]See Thaler (1994). The Winner's Curse holds that the winner of an auction almost always overpays. If bidders bid rationally (lower), they will not win any auctions; if bidders bid what it takes to win an auction (higher), they will almost always bid more than was actually necessary to clear the market.

from comparing information from bids on eBay with similar information from other auction sites (Piller 1999). Thus, rather than contributing to consumer welfare, the Internet has the potential to reduce consumer welfare or leave it largely constant despite great technological change.

The economic realities of Internet business suggest that the benefits to consumers may not be as great as previously imagined. Despite the technological advantages provided by the Internet, firms and their customers will not escape basic laws of economics. The Internet may change the economics of many businesses, but it has not repealed basic principles. Firms survive only if they employ a business model that enables them to obtain a premium over their costs of delivering a product or service. Analysis of the business models employed by Internet firms suggests they will need to behave in ways similar to traditional consumer-focused business, and this behavior will produce similar outcomes with respect to consumer welfare and raise similar issues of public policy.

Business Models and the Internet

Simply defined, a business model is a statement of how a firm will make money and sustain its profit stream over time. Drèze and Hussherr (1998) suggest that there are four potential models for making the economics of Internet commerce viable. The first of these models is the hardware model, in which firms will either sell or lease equipment and infrastructure services as the basis for their revenue streams and economic survival. Firms employing this business model, such as Hewlett-Packard, Cisco, and AT&T, appear to be doing relatively well; they provide the infrastructure that makes the Internet possible and have thus been beneficiaries of the growth of this infrastructure. The providers of hardware and related infrastructure products and services have been beneficiaries of the growth of other consumer-focused Internet businesses and of business-to-business e-commerce. A portion of the success of firms following this business model is attributable to consumer-focused business, but the vast majority of this success resides in business-to-business sales.

The remaining three business models all focus on content: (1) the sales model, in which content, product, or services are sold directly to consumers; (2) the media model, in which advertising and access to customer information generate income to cover the costs of delivering content, products, or services to consumers; and (3) the synergy model, in which the Internet supports either reductions in the costs of doing business or the generation of revenue from other non-Internet sources. We consider the viability and implications of each of these models subsequently.[2]

As noted previously, most business models employed by e-commerce firms (other than those providing infrastructure) are not currently producing profits. This is not a viable long-term circumstance. It is also undeniable that investor largess is the reason for much of the growth in consumer-focused Web businesses. For example, it has been estimated that dot-com businesses spent between $3 and $4 billion on advertising in 1999, largely in traditional media, such as television, print, and outdoor media (Johnson 1999). This level of spending was largely supported by investors rather than by revenue generated by the businesses. The investor-sustained business model is not unique to the Internet, however.

The history of investment and business is replete with similar examples of firms that survived for a while solely by means of investment (Chancellor 1999; Gordon 1988). Many of these firms also had extraordinary levels of market capitalization before either failing outright or returning to more typical levels of market value based on a sustainable cash flow. The railroad, radio, automobile, and television industries, among others, all experienced this type of short-term market anomaly. As is the case with the Internet and e-commerce today, a few people became very wealthy as a result of these investor-driven businesses. The majority of investors, however, lost their investments. Although it might be argued that consumers were ultimately better off as a result, it is not at all clear that the amount of investment was necessary for the outcomes produced.

The large amount of investment in nonviable businesses raises significant questions of public policy in its own right. Although it is generally accepted that the stock market has seldom played a direct role in economic downturns (Temin 1998), if significant numbers of Internet firms fail and the market values of other firms fall to more sustainable levels, there is a possibility of significant indirect economic effects ranging from a slowdown in consumer spending resulting from the "wealth effect" to declines in wages associated with surpluses of labor. In any case, to the extent that capital is invested in businesses that are not viable over the long run, there is the question whether capital has been appropriately apportioned and whether the significant investments in Internet-related businesses have reduced the availability of capital for other emerging industries, such as biotechnology and public programs.

Nevertheless, there remains the question of how consumer-focused Internet firms will survive in the future. The simple answer is that Internet firms will survive by creating value for customers, by finding a means by which customers or someone else will pay for the value delivered, by actually making money, and ultimately by producing a superior return on investment compared with other reasonable investments. In other words, they will create viable business models. As in any industry, such business models will be accompanied by implications for consumer welfare and public policy.

The Economic Realities of Internet Business Models

All commercial enterprises either explicitly or implicitly operate within a business model that defines how they will make money and survive into the future. Slywotzky, Morrison, and Andelman (1997) identify four components of business models: (1) customer selection, that is, from whom the firm makes money; (2) value capture, that is, how the firm makes money; (3) differentiation and strategic control, that is, how the firm protects its profit stream over time; and (4) scope, that is, how the firm defines its activities and

[2]To these four business models, another model must be added: Convince investors that they will lose money over the long run or miss significant opportunities if they do not invest today.

its role and partners in the value chain. These components of business models provide an especially useful tool for conceptualizing Internet businesses and for identifying issues of public policy and factors that may influence consumer welfare.

The Internet and Customer Selection

As noted previously, the most significant source of the growth of e-commerce on the Internet is in business-to-business markets. Much of this business is not new and would have occurred in any case. The Internet does not change the underlying business model, though it may change the organization and cost structure of supply chains and value delivery systems. Indeed, in the business-to-business domain, the Internet is, to a large degree, merely a substitute for existing technologies for e-commerce. In the business-to-business domain, it might even be argued that the radical innovations associated with information technology have already occurred. In this view, the Internet is just an evolution of technology, though there are opportunities associated with supporting the requirements of an Internet infrastructure and with identifying opportunities for greater efficiency and effectiveness in using this infrastructure.

Customer selection in business-to-consumer markets may be different from selection of customers in other markets, however. Although access to the Internet is spreading rapidly, the size of any market defined solely in terms of the Internet will remain a fraction of the larger market for some time to come. Only in certain specialized markets, such as computer hardware and software, does the Internet provide broad coverage of consumers who also have a propensity to purchase on the Internet. In most consumer markets, e-commerce is destined to serve only a fraction of the total consumer market, and this will likely occur by means of taking market share from existing retail channels rather than by creation of a new market or expansion of existing markets. Indeed, an examination of the various types of Internet-based businesses suggests that consumer-focused internet businesses are already moving toward differential models of customer selection (Mathieu 1999). Different Internet businesses use various approaches to identify target customers. Some Internet firms focus directly on the end customer; others focus on merchants and advertisers. Some also offer more specialized content, products, or services designed to appeal to a narrower group of customers, whereas others target a much broader set of customers.

Table 2 provides a summary of one way in which e-business models may be classified. These models of business are not radically different from those found in other types of markets. Thus, e-businesses will confront issues similar to other businesses that use similar customer selection models, and consumers and regulators will confront similar issues in dealing with them.

Value Capture

Even if consumer-focused e-businesses deliver value to consumers in the long run, some of the value that is delivered to consumers must be captured by the firm in the form of fees or prices. Just as Internet firms have focused on different customers in their business models, so too have they developed different approaches to the capture of value. What is curious about many of the value capture models of current consumer-focused Internet firms is that they have not been successful in covering their costs. Internet firms have demonstrated that there is a market for free (or at least underpriced) goods and services, but few consumer-focused Internet firms have made a profit. Economic reality suggests that this is not a long-term equilibrium condition. Internet firms will either develop viable approaches for value capture or disappear.

Table 2. Major Classes of Internet Business

Major Classes of Internet Business	What They Do	Customer Selection	Transaction Capability	Percentage Accounted for in Business-to-Consumer Transactions in 1999	Example
E-tailer (electronic retailer)	Online sellers of goods and services to consumers	Consumers	Full	63%	Amazon.com
Portal	Web sites that direct consumers to featured Web sites	Featured Web sites	Limited	20%	MSN Shopping
Community facilitator	Aggregators of buyers and sellers	Community members	Full	4%	eBay
Infomediaries	Consumer-focused agents and market filters that facilitate online shopping	Consumers	Limited	10%	Dash.com

Source: Mathieu (1999).

Firms that have made profits in consumer-focused Internet businesses have employed models that are pay-for-product, such as Dell; pay-for-service, such as AOL; or auction based. In all cases, these models place the consumer at a potential disadvantage. Pay-for-product and pay-for-service providers can determine how much service to provide, and a low price may be accompanied by low levels of service. Thus, consumers have experienced significant problems with access to AOL even as AOL offered lower prices to attract more customers. Because Internet firms have greater information about demand than consumers do, they have an advantage in establishing price. They can use yield-based pricing, similar to that employed by airlines (see, e.g., *Handbook of Airline Marketing* 1999). As most consumers know all too well, such yield-based pricing can lead to a bewildering array of prices and situations in which demand greatly exceeds supply that the seller can exploit to its own advantage.

Auctions also appear to be a viable way for Internet firms to capture value. eBay has consistently made a profit by managing auctions. It is useful to note, however, that auctions turn the typical retail model of economic competition on its head. In auctions, buyers compete with one another for the offering of a seller. It is not obvious that consumer welfare is well served by such an economic model. Similar to yield-based pricing models, auction models provide firms with more information about demand and prices than is available to consumers. Although there is nothing inherently wrong with such pricing practices, they are predicated on an asymmetry of information that may not serve consumers well. Internet firms seeking to make a profit have an economic incentive to exploit such information asymmetries (Bender 1999).

Differentiation and Strategic Control on the Internet

The long-term survival of an e-business requires creating a profit stream, but it also requires finding a means to protect and sustain this profit stream over time. This may cause difficulties for many pure e-commerce businesses in the long run. Internet businesses differ from many other businesses on one key dimension: The ease of market entry makes it more difficult for Internet-based firms to differentiate and protect their profit streams than might be the case for other types of businesses. Businesses that provide products and services directly over the Internet, such as music, streaming video, software, or information, have a particular problem with sustaining their revenue streams over time. These providers must struggle with the problem of how to provide paying customers with reasonable access to what they are selling without opening ownership to a large, nonpaying, secondary market. The free-rider problem is a particular problem for such providers, and they correctly seek ways to prevent free-ridership. Doing so is not so easy, however, without imposing costs on paying customers. The use of anticopying technologies and cumbersome registration numbers have the potential to reduce the value of products delivered to consumers. This problem is not unique to the Internet, but the Internet exacerbates the problem by making products and services more readily available to free riders.

One means for differentiation and sustaining profits over time is brand building. E-commerce companies have adopted this strategy too. They have either attempted to create new brand names (Yahoo, Amazon.com) or extended well-known brands into the Internet marketplace (Barnes & Noble, Wal-Mart). Creation of a successful new brand is rare, however, and it remains to be seen how many Internet brands will survive as more traditional firms with strong brand identities extend their brands onto the Internet. The strength of long-established brand names and the availability of bricks-and-mortar outlets may provide long-term advantages for firms with established brands, because they will not need to incur the costs of building a new brand and will have more options with respect to how revenue may be generated. These latter firms are well positioned to exploit the synergies that may exist between traditional modes of serving consumers and the Internet.

Indeed, consumer-focused e-commerce firms may be at a disadvantage in competing with more traditional retailers over the long run. The average cost of developing a Web site is $228,000, and the running cost of maintaining the site is $150,000 (Association of National Advertisers 1998). This small investment, which makes it easy for a firm to enter the e-market, pales when compared with the cost of creating a bricks-and-mortar outlet. Thus, Wal-Mart will find it much easier to develop e-commerce capabilities to compete with Amazon.com than Amazon.com will find it to replicate Wal-Mart's nonelectronic presence and resources.

At present, however, e-commerce firms enjoy a price subsidy compared with more traditional businesses, because they are currently exempt from state sales taxes. This subsidy, which is ultimately financed by the taxpaying consumer, may not be sustainable over the long run. Its presence also raises important questions of public policy, though e-businesses are hardly unique among businesses in receiving subsidies from the government.

Scale is also a useful tool for sustaining cash flows and for keeping smaller competitors at bay. Developing scale is extremely important for portals and community facilitators if they are to survive over the long run, but it is important for other types of businesses as well. For example, AOL has a significant advantage over other portals because of its massive number of subscribers. In addition, because AOL derives income from subscriptions for access, it is less dependent on income it receives as a portal. Indeed, AOL's subscription income may subsidize the long-term development of AOL's portal business. This raises some questions about whether AOL might enjoy an unfair competitive advantage as a provider of access to both the Internet and other sites. Microsoft took a different approach to obtain scale for its MSN portal; it created popular content first and later drew content readers into its integrated portal. Here too there is the question of whether subsidies from Microsoft's other businesses provided it with an unfair advantage in developing its portal.

For community facilitators, scale is indicated by membership size. For example, eBay is the world's largest auction community, and its position in online auctions is strong, in part, because in auctions, more participants usually mean better odds for selling goods at better prices. Note that such scale only provides an advantage if it can be protected from competitors. To the extent that competitors or consumers themselves can access the content of large Internet sites,

they obtain the advantage. Scale only provides an advantage when it can be protected. Thus, as noted previously, eBay has sought to prevent the use of information from its site by auction aggregators, and AOL has sought to prevent use of its customer lists for instant messaging by other firms that offer instant message capabilities.

Integration becomes a particularly powerful means of creating scale effects. Standardization may be less important than the ability to integrate several providers and customers on one site. The use of scale as a differentiater and a source of long-term advantage has the potential to place consumers at a particular disadvantage. Scale can provide a deceptively powerful form of monopoly, especially when combined with the type of network effects that exist on the Internet. Short-term cost savings associated with scale and the uncertainty associated with switching may discourage consumers from obtaining long-term advantages. Superior, potentially lower-cost solutions may be precluded from the market by network effects and scale economies. This represents the death of innovation in the service of the standard. In the long run, consumers may not be well served by such strategies to maintain revenue streams by e-businesses. Indeed, there are economic incentives for firms to pursue such strategies.

The economic need to differentiate and protect revenue streams also creates incentives for firms to obfuscate. It is not to the advantage of a firm to make commerce frictionless and open for consumers. Thus, the structure of economic incentives drives firms to provide differentiated offerings that are not easily compared, to offer noncomparable information about products and services that make it difficult for consumers to make comparisons, and to develop pricing strategies that make it difficult for consumers to compare prices. The Federal Trade Commission (FTC) has already taken action against one large e-tailer for obfuscation on the Internet (*FTC v. Dell Computer* 1999, Docket No. C–3888). Dell Computer entered into a consent agreement with the FTC after the FTC charged that Dell's lease advertisements violated federal laws by placing material cost information in inconspicuous or unreadable fine print or omitting such information altogether.

Firms have also sought to differentiate and protect their revenue streams by creating unique content that is available only through their sites. In this model, the firm either charges directly for access to the content or is paid by some other organization for attracting consumers to the site and can protect the content from others. As noted previously, there has been an increasing appeal to intellectual property laws as the basis for preventing access to information on a given site.

Customer Information and Consumer Privacy

A common assumption in various e-business models is that firms will control access to and information about consumers who visit their sites and/or do business at or through their sites. There is no question that access, information, or both have potential value, especially when combined with scale and network effects. Such access and/or information, at one level of aggregation or another, could be sold to other firms. Implicit in this model, however, is the assumption that ownership of customer access and information resides with the firm rather than with the customer. This is not altogether certain, however. Merely because consumers access a site or provide information to complete a transaction does not mean that they have ceded ownership of either their identity or information about themselves. Indeed, there is a curious asymmetry in the view of a firm that its own name, brands, identity, and Web content cannot be expropriated by others but that it can expropriate a consumer's name and related information for its own purposes.

This is not merely a privacy issue, though such issues exist when names and information are captured, especially when such information is made available to third parties either directly or indirectly. At a more fundamental level, and one that may subsume privacy within it, is the question of the intellectual property associated with a name and related information. If names and associated information have value to a firm that captures and uses them for its own purposes, they must have value to the owner of the name and information. E-businesses and other ventures that predicate their long-term success on access to and control of information about consumers assume, at least implicitly, that they are entitled to such access and control with little or no payment to those consumers. It remains to be determined how many consumers are willing to offer how much information, and for what purposes, for the services and conveniences offered by the Internet. There are evolving economic models of e-commerce in which consumers are paid for their willingness to be identified. For example, free e-mail accounts are provided by several portals, and one firm, FreePC.com, as the name implies, even offered a free personal computer to consumers who were willing to provide information about themselves and accept advertising directed to them. The viability of the latter model has been brought into question by the acquisition of FreePC.com and the subsequent abandonment of the free computer offer.

Questions about the privacy and ownership of customer names and related information fall within the domain of public policy. However, it is also important to recognize that the viability of various e-business models also rests on the answers to these questions. It is probably for this reason that the default models of privacy for most Internet firms are "opt-out"; that is, the consumer can take an action to have his or her information excluded from capture and use by the firm. Such opt-out policies still place the burden on consumers to take action and implicitly assume that information about the consumer is the property of the firm unless the consumer explicitly objects.

Scope and the Organization of the Value Chain

The final component of business models is how the firm chooses to organize itself and with whom it will partner to deliver value to the customer. The lure of e-commerce in business-to-business environments is the potential ability to lower transaction costs across the supply chain. Thus, there has been considerable discussion of the disintermediation that the Internet has caused. Disintermediation refers to the elimination of intermediaries, such as suppliers, distributors, and retailers. It is not clear that these organizations as a class are disappearing, however. Many are becoming formidable competitors in their own right. At the same time, there is a significant amount of reintermediation: new intermediaries seeking to control access to consumers and other sites on the

Internet. It is not so much that intermediaries are disappearing as it is that their role is changing. In today's e-commerce model, e-tailers play the role of the traditional retailer, and they still require manufacturers and distributors in their supply chain. The biggest change can be found in the layer between the e-tailer (or traditional retailer) and consumer. This layer includes Internet access providers, portals, community facilitators, and infomediaries on one side of the transaction and manufacturers, distributors, and shippers on the other side of the transaction. On the one side of the transaction, these intermediaries manage access to consumers and interactive relationships; on the other side of the transaction, these firms produce and/or deliver the products and services to the consumer.

The appeal of the Internet to many businesses is that it may reduce total costs through the elimination of some activities while bringing down the cost of other activities. The Internet will certainly do so, at least in some cases, just as EDI did before. However, it is not at all clear how many activities can be eliminated or reduced in cost, though different organizations may be involved. There is still a need to get products to consumers, and many products still require service after the sale. Except for products that can be delivered directly over the Internet (and as noted previously, these bring with them their own unique problems), there is still a need to get products to consumers. Firms such as United Parcel Service and Federal Express have thus become net beneficiaries of e-commerce, even as traditional intermediaries such as distributors and truckers lose out.

The ready availability of partners has made market entry especially easy for e-businesses. The cooperation of publishers on the one hand and shipping companies on the other made Amazon.com possible. It could offer consumers products for sale without setting up its own internal infrastructure. As it has grown, it has found an increasing need for more infrastructure under its own control and is now building its own distribution centers. Similarly, other consumer-focused e-businesses that originally developed through collaboration with loose collections of firms and individuals are finding it increasingly advantageous to create more-formal infrastructures by creating them internally, acquiring them, or developing close partnerships, such as those between Disney and the Go Network and CNet and NBC.

An early view of e-business was that it would provide enormous economic opportunities through the collaboration of Hollywood-style firms and governance structures, that is, by groups of small firms and individuals coming together for a project, such as serving a particular customer, then disbanding. The reality is that serving consumers on an ongoing basis requires an ongoing organization and structure. In addition, the openness and transparency with partners that is necessary for long-term success in most markets creates too many opportunities for the transfer of technology and skills to potential long-term competitors. Thus, ownership and close alliances among e-businesses and between e-businesses and more traditional businesses are inevitable. There may be less friction as a result of e-business, but it will not be in the economic interests of survivors of the e-business growth phase to provide business partners with complete transparency or consumers with a frictionless business environment.

Public Policy Implications

The preceding discussion suggests that e-commerce may not be as radical and innovative as it appears at first brush. It employs new technology, which will result in changes in the business landscape. Opportunities have been and will be created. There will be winners and losers as demand shifts from one provider to another. Some genuinely new markets may also emerge. However, from the perspective of fundamental business models, e-commerce appears to be a derivative of older commerce models that employ new technologies. This means that many of the public policy issues that arise in the context of e-commerce are also derivatives of older issues that have arisen in other business and market contexts.

In the course of this brief review, several critical issues for public policy have been identified. These include the following:

1. *The amount of investment that has poured into e-commerce and the resulting market capitalization of Internet stocks*: The market capitalization of many e-businesses is not justified. This raises at least two questions. First, what will be the long-term impact on the national and global economy when laws of economics again reassert themselves? This first question is especially important in light of the second question: What role should government subsidization of the e-commerce industry (through exemption from sales tax or other means) play in the development of the industry, and is such subsidization dysfunctional when it produces unsustainable market capitalization of firms?
2. *The role of obfuscation and deception on the Internet*: Business success does not necessarily follow from the creation of an open and frictionless market. There are strong economic incentives for firms to make it difficult for consumers to evaluate alternatives on comparable dimensions. This is the case even when firms have no desire to deceive. Low-cost providers have incentives to emphasize price, whereas providers of high-quality products and services have incentives to emphasize quality. There is no incentive to provide information on dimensions on which the firm is a weak competitor, and even if such information were provided, it would often be difficult to evaluate without actual experience with the product or service. Thus, in contrast to the optimistic forecasts of some prognosticators, the Internet has the potential to make it even more difficult for consumers to obtain objective information. The practice of paying various Internet businesses for more-favored positions or evaluations during consumer search only magnifies this problem.
3. *Information asymmetry, pricing, and product availability*: The Internet provides an extraordinary means for information acquisition. However, firms doing business on the Internet are likely to have an advantage over consumers in terms of information regarding demand and supply. In such circumstances, the consumer will be at a disadvantage compared with the provider. In a genuinely frictionless market, information would be available on an equal basis to both buyer and seller. Such information would put many product and service providers at a disadvantage, however. This might include providers whose existence as profit-making enterprises requires such information asymmetries for survival. In contrast, information asymmetries provide an inviting opportunity for exploitation by the unscrupulous.
4. *Monopoly power*: Network effects and the economics of scale may result in consumers accepting and even preferring inferior solutions. Innovative solutions that may benefit con-

sumers in the long run may never achieve a significant market presence because they do not enjoy network and scale effects. This would be an especially troublesome and dysfunctional outcome. This possibility, which is very real, has important implications for the way monopoly power should be defined and for future government subsidization.

5. *Intellectual property*: Protection of intellectual property is especially problematic in the context of a technology such as the Internet, which might be described as a giant copying machine. Creators of intellectual property deserve reasonable protection of their property. It is less clear that intermediaries, including aggregators of information they did not create, are entitled to such protection. However, it appears unfair for some aggregators to deny information to other aggregators when they deny access to information produced by those who offer the information they aggregate.
6. *Data ownership and privacy*: No debate regarding intellectual property should begin without a clear understanding of the intellectual property embodied in the name of the individual consumer. Long before the advent of the Internet, a trade in the names of consumers (and associated information) existed, and it continues to exist largely without the permission of the consumers to whom the names and information belong. Internet firms have now taken the protection of their intellectual property to a level close to that which represents the individual consumer. If information on a firm's Web site is protectable, information provided by a consumer is also protectable. Indeed, a firm that should be well-informed about its legal rights and holds itself out to the public as a provider of information, services, or products has far less basis for protection (even of the content it provides) than consumers seeking to complete a single transaction who are uninformed about the uses of information they might provide. The Internet has made clear how different the standard of protection of individuals is from the protection of business interests. The application of existing protections of brand and company names would eliminate any concerns regarding individual privacy.
7. *Enforcement*: Governments have been even slower to understand the implications of the Internet than established businesses. As a result, current government entities involved in regulating commerce are not only obsolete; they reinforce the status quo, which includes the exploitation of the names of consumers and associated information. Indeed, many elected officials have used information about voters that may not be within acceptable bounds as a part of their own campaign apparatus. The U.S. government has shown greater willingness to protect the intellectual property embodied in the artificial entities of firms and products than the identity and associated intellectual property of real people. The U.S. government has also shown neither capacity for nor response to the need to protect consumers in a global Internet economy. Other nations, particularly those in the European Community, provide much greater protection of the privacy rights of citizens.

Summary

E-commerce will give consumers new ways to obtain information, shop, and make purchases and will benefit the consumer in many cases. Nevertheless, it is not in the economic interests of firms to provide transparent and comparable information about products and prices. Except for standardized offerings and well-known and familiar products and services, quality is difficult to evaluate on the Internet. Sensory information, especially taste, touch, and smell, is limited. There is no person or store to whom the e-customer can necessarily appeal. Great opportunities exist for fly-by-night operators to exploit the information limitations of the Internet. Just as the Internet can serve consumers by providing more information about certain products along certain dimensions, it also has the potential to mislead and deceive. Indeed, the Internet provides the unscrupulous with the opportunity to deceive on a larger scale than ever before and across international boundaries. This will challenge governments' abilities to enforce laws and regulations.

In contrast to the optimistic view of the Internet as a source of frictionless consumer purchasing in which alternatives and prices can be readily compared, there are significant economic incentives for firms to offer noncomparable alternatives. Indeed, because of the relative ease with which consumers can acquire information, it will be in the best interests of Internet providers to offer far more noncomparable options than traditional retailers do today. It is likely that there will be more site-specific models of products than there are retailer-specific stockkeeping units. Consumer-focused e-businesses will have more incentives to obfuscate, restrict access to site-specific information by competitors and aggregators, and offer incomplete comparisons among products. Obfuscation of price is likely to be especially prevalent, as prices for the basic product, for shipping and handling, and for service, among others, are unbundled.

For the consumer, the supply chain may become more complex. Finding the firm or person responsible for a failed delivery, a mistaken billing, or a poor product may be difficult. Is the e-tailer that completed the transaction, the product manufacturer that made the product, the shipping company that was to deliver the product, the credit card company that took payment, or the local service provider responsible for the consumer's ultimate satisfaction? In comparison to more traditional retail commerce, the consumer is confronted with a visibly thicker supply chain. This complexity may be made all the more difficult for consumers when they deal with or through portals, communities, or infomediaries that they believe to be unbiased third parties that are independent of e-tailers and perhaps even claim to represent consumer interests. Increasingly, these third parties are linked to specific e-tailers and other product and service providers. The conversion rate from online shoppers to online buyers remains low. As a result, firms using one business model are increasingly considering or expanding into the use of other models. Such changes are blurring the boundaries of different e-commerce business categories and potentially confusing consumers.

Finally, there remains the issue of who owns and controls what data. Although consumers have seemed willing to trade some personal information for such benefits as more customized information and products, it is not yet clear that consumers are yet fully informed about the degree to which such information has value. Different people are likely to consider information about their identities as having different values. Some people may trade their names and addresses for free e-mail accounts, whereas others may regard solicitations of the same information as unwanted intrusions. The net worth or value of a person's home has great value to an investment broker, but it is also likely that

the person for whom this information is most valuable to the broker is least willing to share this information. This may not result from concerns about privacy but rather from unwelcome impositions on consumers' valuable time. Issues of privacy also exist, but these too can be placed in an economic context.

Placed in proper economic perspective, the Internet is not especially different. Although there is no doubt that the Internet is changing business, this change is not revolutionary except among those Luddites who reject the next level of technological change. The Internet also poses public policy issues that are not new, but it makes the issues more complex and more difficult to resolve through traditional means. As with any technological change that affects business, there will be winners and losers. In the short run, the winners are the new intermediaries. They have benefited from the enormous market capitalizations of their firms. The losers appear to fall in two categories: traditional firms that "don't get it" and fail to understand how the Internet will influence their businesses and traditional government, which is not organized and does not have the resources to enforce existing laws and regulations in the vast global and decentralized marketplace called the Internet and which itself has vested interests in disclosure of individuals' information. The question whether consumers and investors will be winners or losers is pending.

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