Community Level Socio-Economic Impacts of Electronic Commerce

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Abstract

As electronic commerce grows, an important socio-economic side effect will be increased competition with the traditional businesses in any given local community. Our research suggests that local merchants typically go online in order to better access distant markets, but are often unprepared to cater to remote customers and hence do not fare well. In this paper, we suggest that it is important to consider now how electronic commerce may influence the health of local economies. Despite the rhetoric that electronic commerce is free from the constraints of geography, we argue that there are good reasons to reconsider the role of physical location in making e-commerce policies. We show that using transaction cost and competitive advantage approaches, supplemented by perspectives from research on
social networks and trust, it is possible to develop locally sensitive Web strategies for businesses in a given community. We highlight generic strategies that local businesses can use to leverage their physical presence in a market with electronic commerce in order to better compete with distant Web-based companies.

**Introduction**

In the great excitement generated by the Internet's potential to globalize commerce, researchers have virtually ignored how electronic commerce will impact local businesses and their communities. A primary emphasis in most discussions of electronic commerce is the global nature of electronic markets, and the lower costs of reaching consumers throughout the world (e.g., Amazon.com, a firm that did not even exist a couple of years ago, now sells books in more than 150 countries). Through electronic commerce, companies are now within reach of anyone with Internet access, enabling them to compete with traditional businesses in any given community without having to make the investments in "bricks and mortar" and without an expensive private global telecommunications network. The Web theoretically lowers transaction costs that formerly served as a barrier to entry in local markets, enabling consumers to become aware of and transact with electronic retailers located anywhere.

The rhetoric suggesting that electronic commerce fosters global markets is convincing, and exerts a powerful influence on the business strategies of companies going online (Steinfield & Klein, 1999). Indeed, an article in the Economist proclaimed, "The Internet is affecting all businesses in similar ways. Every industry, for example, has suddenly become part of a global network where all companies are equally easy to reach. As a result of these changes, many businesses that survived mainly because they were conveniently placed, or because they provided information that was hard to find, will soon have to find some other raison d'être" (The Economist, 1997: http://www.economist.com/editorial/freeforall/14-9-97/ec4.html).

As electronic commerce grows, an important socio-economic side effect will be increased competition with the traditional businesses in any given local community (Steinfield, Mahler & Bauer, 1999a; 1999b). A recent report by Jupiter Communications, an Internet research firm, estimated that 94 percent of online purchases made in 1999 would otherwise have been made in traditional retail channels (reported in CNN Interactive, August 6, 1999). Of course, local businesses may also gain from the efficiencies afforded by electronic commerce, both in better serving their local constituencies and by reaching out to distant markets. Some anecdotal evidence suggests that in some instances this is occurring, especially as traditional retailers learn to better integrate their Web and physical outlets (New York Times, August 16, 1999; Steinfield & Klein, 1999). However, at least one study suggests that local merchants are, in general, ill-prepared to take full advantage of electronic commerce, and thus are unlikely to see any gains from it (Steinfield, Mahler & Bauer, 1999). Other anecdotal evidence points to the plight of local merchants who attempt to go online with limited resources, with examples of local stores who sell little to nothing through their online ventures (New York Times, July 26, 1999). These initial indications suggest the need for new research on local impacts of e-commerce.
In this paper, we suggest that it is important to consider now how electronic commerce may influence the health of local economies. Despite the rhetoric that electronic commerce is free from the constraints of geography, we argue that there are good reasons to reconsider the role of physical location in making e-commerce policies. Following Steinfield et al., (1999a; 1999b), we outline the theoretical rationale for expectations regarding how local businesses use and are impacted by electronic commerce. A small exploratory study of local business use of the Web in one community illustrates the general tendency to focus on distant, rather than local markets. We then show that transaction cost and competitive advantage approaches, supplemented by perspectives from research on social networks and trust, enable the development of locally sensitive Web strategies for businesses in a given community. We highlight generic strategies that local businesses can use to leverage their physical presence in a market with electronic commerce in order to better compete with distant Web-based companies. The paper closes with a discussion of the policy implications from a community perspective and an outline of research issues.

**E-Commerce and Local Businesses**

Transaction-costs economics, emphasizing the cost-savings afforded by network-based communication, is generally used to explain the rise of global electronic markets (Benjamin & Wigand, 1995; Malone, Yates & Benjamin, 1987; Miller, Clemons & Row, 1993; Wildman & Guerin-Calvert, 1990). Networks reduce the constraints imposed by distance by permitting the rapid exchange of information between distant buyers and sellers and can more effectively link buyers with sellers while avoiding costly search efforts (Malone et al., 1987; Wildman & Guerin-Calvert, 1990). Not only does electronic commerce support the provision of goods and services at a lower cost, but it can potentially enable greater customization to the needs of individual buyers (Choi et al., 1996; Kalakota & Whinston, 1996). As the argument typically goes, distance becomes irrelevant for goods and services that can be produced anywhere and either delivered electronically or physically by courier to buyers. Earlier analyses by Malone et al., (1987) spelled out the network effects, particularly in the area of buyer search, where electronic brokerage capabilities of networks enable buyers to search for and locate products that match desired features and prices. The relatively low cost of creating a Web presence, which is then accessible to those connected to the Internet worldwide, enables firms to use their electronic site as a surrogate to establishing a physical presence in a local market.

Distant Web-based businesses have several advantages over their local physical businesses. Based on Steinfield et al., (1999a; 1999b), such advantages include, but are not limited to:

- Access to a wider potential market.
- Lower sunk costs because a building or rented space in each market is not required, and they may operate with less or no inventory.
- Better economies of scale arising from a larger customer base, and consequent volume discounts on inputs,\(^{1}\)
- Ability to set up facilities near important factors of production, which would not be available to an "offline" physical business in a given community.

\(^{1}\)
Lower costs due to the ability to bypass many of the intermediaries in the retail distribution value chain (Wigand & Benjamin, 1995; Wigand, 1997).  

A higher degree of transaction automation, leading to improved service and lower labor costs.

Ability to rapidly respond to changes in the market, through price adjustments which can be almost in real time (Bailey, 1998), and well as changes in product mix and marketing approach.

Ability to easily capture and use market relevant data generated during routine interactions with customers (Steinfield et al., 1993). Many smaller local businesses are unlikely to have equivalent capabilities.

Ability to add value to products and services by offering links to complementary producers (Steinfield et al., 1993).

Ability to offer 7 day by 24 hour access with little additional cost.

No limitation on the depth of information provided to customers, which can aid in product selection and potentially reduce return rates (New York Times, August 23, 1999).

These economies can potentially enable Web-based retailers to easily undercut the prices of local retailers who formerly faced little or no competition. Despite some empirical evidence to the contrary (Bailey & Brynjolfsson, 1997; Palmer, 1997), there is a general expectation that prices will be lower on the Web.

Using transaction cost theory, we can conclude that electronic commerce implies new competition for local retailers, particularly those offering products that are readily obtainable from other sources, and that are easily transported.  

Of course, local merchants might respond by establishing their own Web presence, making up any business lost to Web-based competitors by expanding into new geographic markets themselves. However, there are good reasons to be skeptical about the likely success of this strategy for many smaller local retailers (Steinfield et al., 1999). Web startup firms face significant barriers in their attempts to attract customers. The sheer number of new Web businesses reduces the likelihood that people will chance upon a Web store, necessitating large marketing and advertising expenditures to get noticed. Smaller local retailers also may not have the business systems in place to adequately serve distant customers, even if they do attract them. The ability to process electronic orders, verify payments, ship to distant customers, properly apply sales tax regimes, handle returns, and many other skills need to be acquired. Moreover, despite the increasing sales activity on the Web, lack of trust remains a strong inhibitor. Unknown virtual Web stores are more likely to experience problems due to lack of trust than established brand names, favoring the larger, nationally-known company. In fact, at least one survey of Web users has shown that lack of a local physical presence inhibits purchases (GVU Center, 1997). Other surveys suggest that problems with unreliable products and difficulties returning goods have dissuaded Internet shoppers from being repeat buyers (Coates, 1998). Recently, one Internet market research firm reported that nearly two thirds of all online customers still do not trust Web sites with private information, despite the use of prominently featured privacy policies (Jupiter Communications, 1999). And, probably most importantly, smaller local firms are unlikely to have the resources or skills to create the kinds of sophisticated, highly interactive Web sites that now populate the Web (New
Electronic commerce is also likely to influence the buying patterns of businesses and consumers in a local community. Transaction cost economies can also be used to explain the attractiveness of Web commerce for buyers (including firms and individual consumers.) Electronic commerce has implications for all stages in an economic exchange, including search and evaluation in the pre-purchase phase, ordering and delivery in the purchase phase, and after-sales service in the post-purchase phase (Choi et al., 1996; Kalakota & Whinston, 1996). Gains accrue also to buyers, who can reduce their transaction in each of these stages of the purchasing process. As buyers seek out lower cost and higher quality producers on the Web, the less sophisticated local providers not only fail in their efforts to increase sales from distant customers, they also suffer losses in their own market as well.

This effect also can occur in business-to-business transactions. The burgeoning literature on IT and virtual organizations, combined with transaction cost economics, suggests that the Web will encourage firms to purchase goods and services from remote sources to find the best producers regardless of location (Davidow & Malone, 1992; Wigand et al., 1997).

This suggests that many local businesses might not fare well in direct competition with new Web competitors, particularly for easily transported products. As we argue in a subsequent section of this paper, however, businesses with a physical presence do have their own advantages when the target market is in their specific geographically defined community. And, when this physical presence is combined with creative uses of the Web targeted to their local constituency, the resulting synergies can offer even greater competitive advantage (Steinfield et al., 1999a; 1999b).

The rub is, however, that despite any potential relative advantage to focusing on the local market, the evidence suggests that local businesses are more likely to direct their Web commerce at distant markets (Steinfield et al., 1999a) rather than their own local community. Studies seem to indicate that the majority of local businesses are drawn to the almost infinite audience now on the Internet, and focus on the Web as a tool to grow sales rather than provide better services to their home market. Auger & Gallaugher (1997), for example, compared the motivations to establish an online presence among small and large Web-based businesses. They found that smaller and medium-sized firms go online to increase sales outside their geographic region, rather than to improve business in their local market. Steinfield et al., (1999a) found little evidence of a locally-oriented Web strategy among 250 businesses that had established Web sites in one medium-sized Midwestern city. And, as we show below in a follow-up study of almost 100 businesses in the same community a year later, there remains relatively limited local focus on the Web sites of those that had developed an online presence.

**An Exploratory Study**

In an attempt to understand if and how businesses located in a specific local area are using the Internet to support and/or supplement their local company, we conducted a study of local businesses in Lansing, Michigan.
We applied two data-collection strategies to gather this preliminary data. In the first step, we randomly selected businesses from the Lansing area business white pages and called them to determine which ones had a Web site. Our goal was to randomly identify 25 local businesses with a Web site for further analysis. We had to call 94 local businesses before reaching our goal of identifying 25 businesses with Web sites. All 94 businesses were asked basic demographic questions, but those with Web sites were asked additional open-ended questions to ascertain their Web-related uses and goals. For the second phase of data collection, we visited each of the Web sites and conducted a content analysis based on 12 pre-defined variables which identify strategies on the Web targeted for local customers. Of the 25 businesses that reported having a Web site, only 20 were actually accessible during the data-collection phase of this study.

The results of this exploratory study appear to support our hypothesis that few businesses were actually applying strategies on their Web site to take advantage of their local presence. For those companies with a Web site, the majority report the provision of information as a function of their site with 37% providing company information and 19% providing product information. In addition, 17% reported that customers can communicate directly with the company via the Web site and 9% reported that a transaction can be conducted via their Web site. When asked whether their Web site targets people specifically in Lansing or elsewhere, 28% reported Lansing, 48% reported elsewhere and 16% reported both. Just over one third of the respondents feel that they have competition from other company’s Web sites that offer similar services. Thirty-six percent of the respondents reported that they are doing some form of business-to-business transaction via the Web such as purchasing products or services needed by their company. One-quarter of the businesses report that they have tracked a difference in their customer base since putting a site online with most reporting new international clients. Sixty percent of the respondents have plans to increase their use of the Internet to deliver products and services over the next few years. Almost all the businesses felt the Internet can help them be more competitive by enhancing their visibility and client access to their products and services. However, our data did not tell us whether this enhanced visibility and access would be on a local or global level. Interestingly almost 50% feel that it is important to have a physical office (or a local office) in a community to compliment a Web site because of the need for personalized service and relationships and those products/services which cannot be delivered via the Internet. Finally, 60% of the businesses report membership in local organizations with the Chamber of Commerce being the most common membership.

The results from the first phase of data collection point to some interesting indications. First, these businesses are not currently using their Web sites to deliver sophisticated services and less than half are taking advantage of the Internet for products and services they need to run their business. Even though many plan to ramp up their use of their Web site, they didn’t provide many concrete examples of exactly how they would use this tool to become more competitive. And, more than half recognize the need for local involvement evidenced through their membership in local organizations. However, phase two of our data collection did not find evidence that these businesses are using their Web sites strategically to bolster business from their local community. Three-quarters of the sites listed a local address and 80% provided a local phone number, however, only 35% provided a map or
directions and only 15% included a photo of their local facility. A mere 10% advertised in-store specials and only 5% used coupons or some marketing strategy such as listing goods/services available only at the business to bring clients into the physical store. The bottom line is that these businesses do not appear to be employing strategies that capitalize on their physical presence in the local community. Furthermore, for those businesses without a Web presence, only 30% reported plans to create a Web site for their business.

In summary, in this section we have identified two inter-related forces stemming from the growth of electronic commerce that collectively threaten the health of local communities. First, new competitors who offer goods and services to a local market via the Web are likely to siphon away business that formerly went to local physical providers. Conversely, the ready access to new suppliers of goods and services who were formally unknown, unavailable or too costly to reach, will shift the purchasing habits of both local businesses and consumers. Second, local providers attracted by the allure of the seemingly unlimited size of the Internet market, are more likely to de-emphasize their geographic location and physical establishment when they do go on the Web. Except in special cases, such as when local providers are offering truly niche products unavailable elsewhere, or have already developed a successful offline business catering to distant customers (Steinfield et al., 1999a), targeting distant markets is not likely to be successful for the majority of local businesses. And, local communities are likely to be impacted as their local businesses look to service clients outside their geographic area. Our next section outlines some of resulting community level impacts.

Community Level Impacts of Electronic Commerce

Our analysis up to now has focused on the individual firm level of analysis. From an economic point of view, it can be argued that we should not be concerned if electronic commerce helps to weed out inefficient local producers. In this line of thinking, local consumers will be better off if they obtain the goods and services they need from more efficient providers. Social welfare is thereby enhanced, and therefore no action is required. The fallacy with this view is that while indeed there will be individual cases of local buyers gaining more value and greater access to suppliers, the results at the aggregate community level may be undesirable for local residents.

A community level focus would uncover, for example, some of the following social costs of electronic commerce:

- Job losses, particularly in relatively unskilled areas already quickly disappearing in the digital economy. Sales clerks, stockpersons, and other entry level jobs offering employment options for teenagers and other unskilled workers are likely to be the hardest hit.
- Loss of local shopping options that, even with higher prices, afforded some conveniences. Consumers may have more choice on the Web, but they also end up losing some necessary flexibility. Examples include situations where a product is needed immediately, and cannot wait even for next day delivery and more costly product returns.
- Decreased attractiveness of local community due to the loss of
boutiques or other businesses that enhanced the quality of community appearance and life.

- Loss of locally produced goods and services that may have been tailored to particular needs and tastes of the local community.

- Reduced tax income from business, resulting in a reduction in the ability to fund government services that enhance community life.

Clearly not all communities will be affected equally, and some may even find that electronic commerce leads to significant growth in jobs, tax revenues and service levels. Larger communities may be less vulnerable for a number of reasons. They may have more competitive local business, and their larger population may make the effects of any loss in business less noticeable. Community culture may play a role, such as university towns having more Web savvy consumers. The nature of the local economy - for example a prevalence of firms in high tech vs. heavy industry vs. services such as tourism - may also influence the relative attractiveness of Web commerce and the vulnerability of local businesses. Even the extent to which a community is geographically isolated, influencing the availability of nearby businesses within driving distance, and the resulting competitiveness of local firms once they are exposed to Web competition, can be a factor. As we note in our concluding section, there is a need for community level research to tease apart the many possible social and economic impacts of electronic commerce.

Towards a Local E-Commerce Strategy

We believe that there are good reasons for businesses with a physical presence in a community to develop a competitive strategy that leverages their physical store when competing on the Web. Rather than using the Web only to attract distant clients, an alternative strategy for local merchants is to use it to better defend their home territory, and offer better service to the local community (Steinfield et al., 1999a; 1999b). In this section, we review the basic arguments for expecting local businesses to enjoy a competitive advantage over their Web-only rivals when using a hybrid Web plus physical presence strategy. Following Steinfield et al., (1999b), these can be broadly grouped into four categories: 1) trust and embeddedness, 2) consumer needs and behavior, 3) services and applications that capitalize on complementarities between the Web and their physical presence, and 4) local knowledge.

Trust and Embeddedness

A commonly cited impediment to online shopping is consumers’ lack of trust in the legitimacy of the Web-based store (Bollier, 1995; Coates, 1998). Indeed, the emerging digital certificate infrastructure appears to be motivated by a desire to demonstrate to potential consumers that merchants are not merely criminals masquerading as a business in order to obtain credit card numbers. Consumers who recognize the Web store as an extension of an existing business may perceive it to be more legitimate, and have more trust in the store. This is not only likely to be a local
phenomenon, but certainly influences perceptions of national brands as well. Nonetheless, we expect that consumers in any particular local market will have more confidence in a Web business if they can associate it with a particular physical store that they have visited or seen in their community. It also may be the case that distant consumers will perceive a Web business to be more legitimate if they are made aware that it has been a successful physical business.

Embeddedness is a term that has been used by sociologists when describing the extent to which economic exchanges are predicated upon patterns of social relations in any community (Granovetter, 1985). According to Granovetter, embeddedness is often considered a problem by economists, who argue that when economic exchange is determined by social relations, inefficient allocation of resources can result. However, he also notes that social relations often facilitate trust, permitting exchanges without expensive contracts or legal fees and thereby reducing costs. Recent empirical work by Kraut et al., (1998) found that a strong predictor of the use of a particular supplier for acquiring key inputs was the importance of personal relationships between producer and supplier. They further found that electronic exchanges between buyers and sellers are not only associated with interpersonal linkages, but the quality of electronic exchanges complemented by interpersonal relationships is higher than electronic-only exchanges. Businesses in a community are likely to be embedded in a number of local social and business groups that can serve as the basis for forming such personal relationships.

Embeddedness that enhances trust can occur in more than familial relations. Local merchants may belong to chambers of commerce, volunteer organizations, churches, and other types of community groups. Through these efforts, they become recognized and trusted members of the community. These associations may extend to the Web, for example when other local businesses provide reciprocal linkages or endorsements.

Consumer Needs and Behavior

Consumers have a variety of needs and preferences that influence their shopping behaviors. Here we mention only a few possible consumer needs and shopping preferences that may offer a competitive advantage to a local merchant who also establishes a locally-oriented Web presence. Our goal is to illustrate those cases where the combination of Web plus physical presence would have a greater chance of capturing business than a Web-only presence.

With a locally available physical store, consumers’ perceived risks in engaging in online shopping are potentially reduced. As noted above, problems associated with the return of faulty merchandise are a major reason for lack of repeat online purchases (Coates, 1998). A local physical presence reduces such risks by providing a low cost means for returning flawed goods, or seeking technical assistance with a particular product. People may also learn about products at the Web site, but confirm product quality by visiting the store to physically inspect the goods prior to purchase. Such pre-purchase and after-sales services not only reduce risk, and thereby lower consumer transaction costs, they can further build trust in the Web store.
Shoppers are not homogeneous, and may have different preferences that influence their use of both regular and Web-based stores. Various market segmentation approaches, such as SRI’s Values and Lifestyles (VALs) and Internet VALs (iVALs) are examples of marketers’ attempts to understand diverse consumer preferences that affect purchasing behaviors.\(^2\) It has been suggested, for example that the Web excels in 'search' goods, for which there are particular product features that enable evaluation by consumers prior to use. The Web facilitates search allowing consumers to more easily locate desired products (Klein, 1998). Klein (1998) argues that the Web even turns 'experience' goods, which are thought of as products that can only be evaluated after trying them, into search goods, by using multimedia capabilities of the Web to permit online experience.\(^8\) Coupled with a purchasing style characterized by extensive research prior to actual purchase, the Web can be a powerful complement saving consumers on the high search costs associated with such information gathering. Others suggest that many consumers prefer the social and personal experience of shopping, engaging in interaction with others in the marketplace as they shop (Sarkar et al., 1995). With both a Web and physical store, such diverse preferences can be addressed. There are likely to be shoppers who exhibit hybrid patterns, such as preference for gathering information online, but making actual purchases in a store. Some may prefer the convenience afforded by the Web, and use it to locate desired products, but due to the lack of trust in the security of the Web, prefer to make actual transactions in person. Perhaps most important are the consumers who desire immediate gratification, and do not want to wait for products to be shipped. They may identify products online, but cater to their desires for immediate gratification by picking up the product at the local store. These are all examples where the physical store would capture purchases that otherwise would not have been made with only a Web-based store.

**Complementarities Between Web and Physical Presence**

The Web store and the physical store can support each other in many different ways, capitalizing on natural complementarities (Steinfield et al., 1999). These include cross promotions, joint-service provisions, and value-added services. Cross promotions are perhaps the most straightforward example of a natural complementarity. Web stores may provide the bargains that people may expect when shopping on the Internet, but also offer coupons for in-store purchases. Marketers are accustomed to the use of 'loss-leaders' as an approach to increasing store traffic, and realize that once in the store, other purchases for non-discounted merchandise are more likely. A physical store can use its Web site to highlight local events, such as a reading or performance at the store, helping to bring in traffic. The Web store may also provide information about additional services that are available at the store that add value to products purchased online. A company might use electronic mail for direct marketing, not only to advertise the Web site, but also to provide information about in-store products and services. Some services might be provided jointly, leveraging the investment in physical and Web presence. A good example would be when a computer store offers a product online, but provides installation and repair services at their premises for customers purchasing from their Web site. Finally, the Web store may function as a source of value-added services for customers who have purchased or plan to purchase goods at the physical store. A purchaser of a musical instrument, for example, may find...
additional sheet music at the store’s Web site. Also, Heikillä, Kallio, Saarinen & Tuunainen (1998) describe the emergence of Web-based grocery sites, where customers gain convenience by shopping online. A local grocery store then delivers the chosen items. Finally, a number of stores have initiated in-store Web kiosks as a means of lowering costs and improving service (New York Times, August 16, 1999.) In-store shoppers gained the ability to search for products not on display, gather in-depth information without taking up the salesperson’s time, and even purchase or pay for products for immediate or subsequent delivery. These various complementary approaches represent a sampling of strategies a retailer might use to leverage their investment in physical and Web distribution channels. In many cases, the natural complementarities offer a distinct advantage over Web-only stores that might require shipping a product back for additional service or installation work.

Local Knowledge

Local merchants who target a local market should be able to capitalize on their local knowledge to compete effectively against distant virtual stores. Bouwman (1999) for example, points out that in many parts of the world, there are local or regional language differences that can be captured in the Web content to increase the appeal of the site. Local customs, tastes and product preferences will be known by local merchants, but not necessarily distant virtual sellers. Prominent local citizens who offer endorsements, reference to local landmarks, awareness of important local events that may influence purchase patterns, and many other local content strategies should help make a merchants Web site more meaningful and appealing to the local target market. It would be difficult for globally-oriented Web businesses to capture the same degree of local relevance.

In summary, we have outlined four categories which offer strategic advantages to merchants who uses the Web to compliment their physical business in a local community. Whether they build upon pre-established relationships to take advantage of trust, facilitate their clients’ ability to use the Web to access those services which they would rather obtain remotely, or take advantage of local inside information to develop promotional strategies, the local merchant who supplements his business with a sophisticated Web site would appear to have the upper hand over some remote online-only companies. However, there is a great deal we have yet to understand to help us pinpoint the economic and social advantages held by the local merchant. The final section of our paper outlines a research agenda which can be used in the long-term development of policy to maximize appropriate commerce practices over the Internet.

Towards a Research Agenda

We suggest that there are indications, given the Internet market research cited earlier and our preliminary studies over the past year, that there is cause for concern at the local community level. Our discussion is largely speculative, however, and there is now a need for more formal social and economic research to inform policy makers and give guidance to community leaders. Research in several areas now appears warranted.

First, there is clearly a need to develop a rigorous and pervasive system of
monitoring the flows of electronic commerce activity, all the way down to the individual and firm level of analysis. Systems for measuring on and offline purchasing activity, that not only measures buyer location, but also seller location, are essential. Given that existing DNS conventions make it difficult to identify the location of buyers and sellers,

alternative methods need to be developed (OECD, 1998). Largely, such information may need to be reported at regular intervals by individual consumers and businesses, perhaps through such mechanisms as the US Census. At the May 1999 Digital Economy conference sponsored by the US Department of Commerce, there were clear indications from the US Census Bureau that a new set of electronic commerce measures would appear in upcoming surveys. These are important first steps, especially since the data can then easily be aggregated to the community level, state, and regional level. It would then be possible to estimate net gains and losses in economic activity in communities, and to link these outcomes to other social and economic indicators.

Another line of research suggested by our discussion is to identify and then focus on the most vulnerable types of business (e.g., books, music, travel services) and track the extent to which Web-based commerce is associated with declining numbers of firms.

More broadly, research that looks for broad shifts in the nature of businesses that flourish and those that disappear in various types of communities would also be warranted. Moreover, research that links the changes in the business landscape to particular policies such as local taxation of e-commerce, would help guide policy makers.

We can also suggest more individual and organizational level research. An open question, for example, is how individual buyers are likely to respond to locally-oriented Web strategies. Does it truly enhance trust, and is there any perceived value to such approaches from a buyer perspective? Empirical research can shed light on the viability of the many different strategies that e-commerce observers suggest for traditional businesses. These include turning physically-based retailing into more of an entertainment experience, emphasizing local ties, and offering in-store Web access.

All of these research questions will provide data to help us better understand the economic and quality of life impacts of electronic commerce on local communities. In addition, they will provide vital information that can be used by local businesses to guide investment decisions regarding physical and/or Web presence in a community.

Footnotes

1 Although some evidence suggests that size of firm has less relevance on Web retailing, given the relatively low costs to establish a Web presence (Kennedy & Dietsch, 1995). Nonetheless, there is clear potential for a large retailer who then goes on the Web to use their buying clout to acquire products at a lower per unit cost than both small Web retailers or small
physical retailers.

2 However, Sarkar, Butler & Steinfield (1995; 1998) present arguments for increasing, rather than decreasing numbers of intermediaries in the electronic commerce environment.

3 Bailey and Brynjolfsson (1997) report, for example, that in their empirical analyses the prices of books, CDs and software were higher on average on the Web than in Boston area stores. Palmer (1997) found no significant difference between in-store prices and prices in Web stores, catalogs and cable TV shopping channels across a variety of products. One plausible explanation is that Web-merchants were simply using a price discrimination approach that allowed them to find buyers willing to pay extra for the added convenience of Web shopping.

4 Note that this is even more true for information products that can be delivered electronically via the Internet.

5 In a 1997 GVU survey (GVU Center, 1997), more than half of all respondents required or preferred an offline presence before shopping on the Internet. Results can be found on the Web at http://www.cc.gatech.edu/gvu/user_surveys/survey-1997-10/graphs/vendor/Offline_Presence.html.

6 Consider for example, the inefficiencies resulting from a producer buying needed inputs from a family member rather than a lower cost competing supplier.

7 Information on VALs and iVALs can be obtained from their Web site at http://future.sri.com/vals/valsindex.html.

8 For example, music is normally thought to be an experience good. Web sites such as CDNow, however, allow consumers to search by artist or genre, and hear a short preview prior to purchasing music.

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