Chapter I

Socio-Economic Impacts and Influences of E-Commerce in a Digital Economy

Sushil K. Sharma
Ball State University, USA

Abstract

Innovations in information and communications technologies have created a digital revolution that is changing the way the world works, learns, communicates and transacts business. E-commerce continues to show strong growth and has been influencing the social and economic growth of nations. On one hand e-commerce technologies have helped nations to accelerate their economic growth and to provide more opportunities for businesses to grow, but it has also created many challenges and effects across numerous domains of society, and for policy makers. These issues involve economic productivity, intellectual property rights, privacy protection, and affordability of and access to information, among other concerns. This chapter describes the various socio-economic impacts and influences that have been created by e-commerce in a digital economy.

Introduction

The revolution in computing and communications of the past few decades, indicate that technological progress and use of information technology will continue at a rapid pace. The Internet's growth and e-commerce has begun to create fundamental change in government, societies, and economies with social, economic and political implications (Boulton et al., 2000; McGarvey, 2001). These advances present many significant opportunities but also are having wide-ranging effects across numerous domains of society, and for policy makers. Issues involve economic productivity, intellectual property rights, privacy protection, and affordability of and access to information, among other concerns (Sharma and Gupta, 2001; 2003b). Electronic commerce promises to be the momentum behind a new wave of economic growth (Mariotti and Sgobbi, 2001). E-commerce has already improved business value by fundamentally changing the ways products are conceived, marketed, delivered, and supported. The relationship and interaction of various stakeholders such as customers, suppliers, strategic partners, agents, and distributors is entirely changed. On the positive side, e-commerce has been creating opportunities for individuals and businesses in the new economy. E-commerce is helping organizations to reduce transaction, sales, marketing, and advertising costs. E-commerce is also helping businesses to reach global markets efficiently 24 hours per day, seven days per week, 365 days per year. Many of the benefits come from improved consumer convenience, expanded choices, lower prices, and the opportunity for better interactions with partners, suppliers and targeted customers for service and relationships. E-commerce has also improved product promotion through mass-customization and one-to-one marketing.

Adoption of new information technologies, particularly e-commerce, is expected to result in improvements in firm performance, such as reducing transaction costs and closer coordination of economic activity among business partners (e.g., Malone et al., 1987; Mukhopadhyay et al., 1995). E-commerce specifically (especially B2B) is predicted to result in lower coordination or transaction costs due to automation of transactions online, as well as productivity and efficiency gains (Amit and Zott, 2001; Lucking-Reiley and Spulbur, 2001; Wigand and Benjamin, 1995). E-commerce also is expected to facilitate entry into new markets and the extension of existing markets (Garicano and Kaplan, 2001), and greater integration of systems with suppliers and customers (OECD, 1999; Timmers, 1999; Wigand and Benjamin, 1995). As e-commerce continues to grow rapidly, it could have significant effects on the social and economic structures of economy. The impacts of these changes are diverse and may even widen the digital divide among nations, alter the composition of trade, disrupt labor markets, and change taxation (Anonymous, 2000). Widespread use of the Internet for e-commerce may have ramifications for intellectual property rights, privacy protection, and data filtering, etc. Therefore, in the digital economy, it is becoming imperative to know how e-commerce affects organizations and society and raises social concerns. Some of these effects of e-commerce are unintentional and create adverse business and personal conditions that could have societal consequences. Social and economic aspects of ICTs have been studied by a wide variety of researchers and practitioners for over 50 years (Dutton, 1999a; 1999b). However, the influences of e-commerce are far bigger than imagined before (Sharma and Gupta, 2003b).

This chapter describes the various socio-economic impacts and influences that have been created by e-commerce in a digital economy. The chapter is divided into four sections. The first section provides the definition and components of the digital economy. The second section discusses the positive influences of e-commerce for businesses. The third section discusses the details of sociological influences of e-commerce. The fourth and concluding section discusses the economic impact of e-commerce in the digital economy.

Digital Economy

The essential in the new economy is a structural shift from the industrial economy toward an economy characterized by information, intangibles and services and a parallel change toward new work organizations and institutional forms. Many new terms have been coined for this new economy such as "knowledge-based economy," "borderless economy," "weightless economy," "networked economy," "digital economy," "the information-based economy," and "the networked economy" to name a few (Woodall, 2000; Sharma et al., 2004). A digital economy is a convergence of communications, computing, and information. The new economy is basically about coordination, innovation, selection and learning (Gärdin, 2002). The combination of networked computing technologies and new business models is creating entirely new markets, industries, businesses, and work practices today to form a digital economy. The new economy or digital economy is based more in the form of intangibles, information, innovation, and creativity, in expanding economic potential (Persaud, 2001) and is based on the exploitation of ideas rather than material things. The focus of the new economy moves from processing material input into material output toward creation, trading and distribution of knowledge, intellectual property and intangibles. The symbiosis between changing production and business processes and information and communication technologies (ICT) is the driving force toward the new, digital economy. The key to understanding the new economy is services and the measurement of services. The modern industrial enterprise is largely a producer of services integrated or embedded in the product. A large part of this service production concerns the use of information in some form (Gärdin, 2002). The essential elements of the digital economy are:

- digitalization and intensive use of information and communication technologies (ICT);
- codification of knowledge;
- transformation of information into commodities; and
- new ways of organizing work and production.

This implies that much of information and many services are available online. A widely distributed access to the networks, the intra- and Internet, and of skills to live and work in the Information Society is the basis for the digital economy. The new economy is a

combination of services and ICT. Malone, Yates and Benjamin elaborate on the growing concern that the benefits of the digital economy are not evenly distributed within society (Bouwman, 1999). The two major concerns are the role of technologically-sophisticated workers in the digital economy and the equity of the benefits-sharing as digitization of information changes the structure of businesses and industries. For example, the dramatic expansion of inequality and educational differentials, and disparities in access among different groups seem to follow the perfect labor market scenario. In this scenario, the most qualified workers receive much of the benefits, but both firms and poorly qualified workers tend to lose out (Kauffman and Walden, 2001). Many of these socio-economic influences are discussed in the next section.

Positive Influences of E-Commerce for Businesses

Electronic Commerce or e-commerce is the exchange and processing of business transaction information using computers connected through a network. **E-commerce does have unique advantages for businesses**. It allows a shop, a showroom or an office to open 24 hours a day, seven days a week. It also means that time zones are not a problem. A Web site can bring a prospect from the point of advertising and information directly to the point of sale, seamlessly, without involving any other medium. E-commerce has reinvented the way businesses operate. E-commerce has also allowed the establishment of completely new types of businesses such as online shopping and Internet banking. These new ways of thinking, and processes involved in commerce, provide many benefits and advantages. E-commerce brings substantial net benefits to the economy. The real impact of e-commerce is its ability to reduce costs and prices and make doing business more efficient. The increased productivity will result from lower production costs, lower inventory holding costs and lower overall input costs to a business. These savings permeate through the entire value chain and impact significantly in business interactions with other businesses (Sharma and Gupta, 2003a).

The Internet is providing considerable opportunities for firms to streamline their business operations as well as offering greater choice and lower prices to customers shopping online or alternatively obtaining product information before making a store or catalogue purchase. A large number of enterprises have migrated to Internet-based systems for increased efficiencies, lower costs and the ability to operate in real time across different platforms. E-commerce is changing business economics and as a result many firms are re-engineering their core business processes. Suppliers and retailers are able to collaborate on product forecasts and product flow and inventory management decisions using the collaborative Internet-based networks between suppliers and retailers. In addition to reducing costs, e-commerce solutions permit customers to custom order products based on individual needs and preferences. Retailers are able to allow customers to mass customize orders based on virtually thousands of choices. Internet-based systems are more efficient in communicating customized product information to suppliers. The entire value chain makes better decisions collaboratively with

the end result being vastly improved performance throughout the entire chain. The Net economy or digital economy will result in lower prices for consumers, better information access and increased competitiveness of small and mid-size businesses. It will also pave the way for a true global trading community.

Social Impacts and Influences of E-Commerce

As e-commerce continues to grow rapidly, it could have significant effects on the structure and functioning of a society at an individual and aggregate level (Granovetter, 1985). The social impacts of these changes are discussed in this section.

E-Commerce and the Digital Divide

The term Digital Divide means a lack of equal access to computer technologies and the Internet in particular, creating a gap between those who have and those who *have not*. The Internet, information and communication technologies (ICTs) and growth of e-commerce has created enormous influence on services, market structure, competition and restructuring of industry and markets. These changes are transforming all areas of society, work, business, and government. The use of information and communication technologies (ICTs) for e-commerce deepens and intensifies the socio-economic divisions among people, businesses and nations. New leadership, better policies, improved infrastructure, greater trust and determined efforts to raise ICT-related skills and competencies across the economy and society in general to move toward greater and more equal digital opportunity. On one hand, e-commerce has provided new opportunities for economic growth. On the other hand, it has created a social problem of digital divide. Digital divide refers to the disparity between those who have use of and access to information and communications technologies (ICT) and those who do not. More than two-thirds of the world population still is deprived of access to information and communication technologies (ICTs). There is a complicated patchwork of varying levels of ICT access, basic ICT usage, and ICT applications among socio-economic groups. Many disparities are getting even larger (Lambert, 2000). Disparities in the location and quality of Internet infrastructure, even the quality of phone lines, have created gaps in access (Quay, 2001). There are gaps in the adoption of digital technologies among different social groups and firms, depending on income levels, education, gender, and ethnic groups and, for firms, depending on industry structure, business size (large firms versus SMEs) and location. Millions of technologically disenfranchised have-nots, who cannot afford the cost of that technology and training, are walled off from potentially life-changing tools and knowledge. Therefore, they feel isolated in the virtual world. For example, although growth has been very strong in Europe, particularly in Sweden and Finland, the United States still accounts for more than three-quarters of all e-commerce transactions. Despite the promise of "borderless" trade, most e-commerce is still national

or within the continents (Bassols and Vickery, 2001). Hindered by poverty and a poor telecommunications infrastructure, the gap between developing nations and developed nations is widening further and, therefore, those nations that are not able to jump on the e-commerce bandwagon and have poor access to the Internet suffer from a great disparity in wealth. Many countries are trying to formulate multi-faceted social policy approaches to improve access conditions, education, skill development and training to reduce digital divide gaps (Rombel, 2000; Morrisett, 1998).

E-Commerce and Marginalization

In many countries, the formal sectors in the economy are becoming less labor-intensive and are able to provide employment opportunities to only specialized workers. With the use of the Internet to conduct business, fewer people are required as jobs are automated or made obsolete (World Employment Report, 2001, 2002). This also means that those who are employed in the formal sectors require greater skills and knowledge. This implies that the other half is either unemployed or is in the informal sector of the economy. According to Tores, Bhorat, Leibbrandt and Cassim (2000), those in the informal sectors may be employed — as they are involved in "survivalist" activities, yet they remain in poverty. They are therefore marginalized as they are pushed to the periphery due to their inappropriate education or skills. They are further marginalized as the gap in the knowledge attained between themselves and those in the formal sectors (using the Internet to conduct business) grows (Abrahams et al., 2001).

The use of ICT (such as e-commerce) has brought greater than the existing marginalization (Machipisa, 1999). These sentiments are echoed by the World Employment Report (2001), which says that the use of technologies such as e-commerce is positively correlated with economic growth — both on a national and organizational level. It also states that in countries where ICTs are relatively expensive, many people (particularly previously marginalized, e.g., rural people) are further marginalized. These persons are marginalized to a greater degree than before, i.e., they are being excluded from the electronic market place and are simply ignored by "electronic players." The Internet is becoming a prerequisite for economic development and companies that can quickly access information about conditions in export markets can respond rapidly to changes. On the other hand, those organizations or business people who do not have access to such facilities are unable to respond. Again, they are left out of the mainstream of activities (Abrahams et al., 2001; Licker, 2000).

Social Disparities and Change of Life Styles

Changes in households' roles, division of labor, responsibilities and relationships take place, at least partially influenced by the adoption and use of modern information and communication technologies. Home-based e-work and other combinations of time and place flexibility have created a variety of important effects on partnerships, families and family life. Important research questions are boundaries and overlap between work and leisure or family activities, the availability of space and other resources for home-based

e-work and its impact on social contacts and career prospects (Gershuny, 2000). Four groups have been identified that could have problems in coping with new information and communication technologies: inhabitants of remote and less-developed regions, older workers, women and the disabled. The relationship between the adoption of new information and communication technologies and the development of income distribution is very complex. Several important causal chains, effects and mechanisms must be investigated and at least some of them seem to be contradictory in the sense, that the adoption of ICT can cause both growth and reduction of income disparities.

Domestic use of information and communication technologies has both beneficial and harmful impacts. Evidence is mixed with regard to various competing theories about the impact of computing on individual well-being. Some data suggest that increasing Internet use is associated with social isolation, withdrawal, and stress. Although the data also suggest that Internet "addiction" may be limited to about ten percent of Internet users and it is not necessarily associated with how much time an individual actually spends online. Conversely, some studies suggest that Internet use enhances family bonds and friendship formation since e-mail and multi-user domains may foster communication between family members and friends. E-commerce has also created another kind of problem which is known as an X problem. A few magazine reports indicate that as many as 600,000 people are hooked on Internet pornography. The report says online sex addicts go to porn sites, X-rated chat rooms and other sexually-oriented content. The Internet survey indicates that one percent of all Internet users are addicted to online porn.

Social Isolation

E-commerce has been an important facilitator of new flexible work forms. Types of flexible work refer to:

- the location of work, with a flexible location including, e.g., working on the move, working from home and working from tele-centers or satellite offices;
- the working time with non-standard arrangements like flexible hours or "flexitime" schemes, part-time work, job-sharing, compressed working weeks, annualized working hours and zero hours (contracts under which the employer does not guarantee to provide work and pays only for work actually done);
- contractual arrangements like outsourcing, use of agency workers, temporary/ fixed term contracts, casual.

The ranks of telecommuters have grown rapidly throughout the late '90s, as employees have wired homes with high-speed Internet connections and multiple phone and fax lines. Fueling the trend is an office-space crunch in most major cities. Instead of leasing new office space or expanding the existing headquarters, it's vastly less expensive to provide workers with laptops and phone lines and tell them to stay home. Given the historically tight job market, the fierce competition for talent, and the record high turnover among workers, many executives see telecommuting as a perk to woo new recruits—no different than offering them company cars, subsidized Internet access or stock options. Telework

has a considerable variety of forms. It includes, among others, work of employees of a company away from the workplace (part-time or full-time, at home or in another places, such as tele-centers), home-based work freelancers, home-based part-time or temporary work as a secondary activity and, in recent times, mobile working, made neither in the workplace nor at home (or tele-center). Early research indicates that so-called telework centers may boost productivity. To cope with the high price of commercial real estate and the shortage of information technology workers, many companies are opening outpost offices in different countries. Each office has a conference room equipped with three large video screens so programmers and engineers can collaborate from remote locations. However, there are various serious social effects of telework. E-commerce has far reaching implications in a social context. On one hand, it provides all the comfort of shopping from home, on the other side, it removes old-fashioned human interactions for social needs (Gershuny, 2000).

The chief problem appears to be the fear of losing touch. Telecommuting could be seen as a different social class with a different set of rules. The fact that traditional workers could be seen as failures in such a society further increases rifts between social classes. As Internet use grows, it is observed that workers spend less time with friends and family, shopping in stores or watching television, and more time working for their employers at home — without cutting back their hours in the office. The more hours people use the Internet, the less time they spend with real human beings (Kraut et al., 1998). More people are working at home on the Internet for their employers and are working more hours at home since they gained Internet access without cutting back at the office, actually reporting increases in time spent working both at home and at the office (Gershuny, 2000; Heikillä et al., 1998).

E-commerce makes it possible for an older consumer to purchase almost all needs from home and have those items delivered. But this can lead to social isolation. The only time there is any personal contact in this situation is when the consumer signs for the packages and when they call up customer service. Due to such phenomenon, there are fewer people active in their neighborhoods than in the 1960s. Many researchers are trying to find answers by working on various issues, such as: How might online communities help reverse this trend? How can local neighborhoods, street corners, apartment buildings, school playgrounds, etc., be turned into bustling, chattering communities where people feel connected and care about others? Random encounters in chat rooms are not enough. Continuing collaborations are needed that encourage trust and collaboration in local health groups, community groups, parent-teacher associations, local conservation groups, community activists or political action groups. Hopefully online communities of the future will help reduce social isolation, enrich local neighborhood communities and encourage development of social capital. Corporate cultures that are traditionally strengthened and reinforced through informal discussions of stories, ritual and specialized language can no longer be maintained. Therefore, geographic dispersion is the primary factor contributing to a weakened culture.

Another issue is ensuring the safety standards of tele-workers. Some feel that an employer should be responsible for preventing or correcting hazards in a home office, passing an unprecedented burden of liability onto the employer. Employers must take steps to reduce or eliminate any work-related safety or health problems they become

aware of through on-site visits or other means. But determining how much responsibility an employer has for a tele-worker's home office is unclear. Should an employer be responsible for making sure a tele-worker's office is ergonomically sound or for snowplowing services on the porch and driveway of a traveling salesperson's home?

Loss of Individuality

Maintaining a customer base has become a very important asset in today's economy for the organizations to gain competitive advantage. Therefore, organizations use sophisticated tools to reach customers and get their personal data recorded into their databases. Many believe that e-commerce technology is eroding personal privacy because consumers have no control over their personal data that merchants have collected during their shopping experiences. Also, personal record keeping systems of merchants are not regulated or restricted. People fear that if the trend of collecting information continues, they may lose their individuality since they would have no control over the information about them (Kling and Linowes, 1996; Hatch, 1996).

The Internet expands our experience of community. This expansion challenges traditional notions of the community and the individual. The Web provides so many manifestations of individuality that it causes an inflation of individuality. Individuality is no longer a definition of who we are, which was won the hard way, through explorations of the social and economical boundaries of survival. Individuality is more and more a definition of who we are, which was acquired through countless hours of mediated experiences through television and the Web. An important component of the sociological implications of the information age is that the breaking down of distances that is at the heart of the process should not be allowed to impinge on the essence of individuality. There is clearly the need to ensure that an electronic counterpart of physical individuality is evolved so that there is a true breaking down of distances without a loss of identity. There is already wide recognition of such a need across the world and various efforts are in place to create such e-identities (Miyazaki and Fernandez, 2000).

Privacy

The transition from the Paper Age to the Digital Age has brought with it new issues surrounding the usage of personal information. Privacy has now become a major issue internationally. The rise of intrusive technologies and the Internet has resulted in a surge in awareness about the importance of privacy. Pressure is being put on companies to develop privacy policies to protect consumers who are liberally sharing their personal information in this new environment (Miyazaki and Fernandez, 2000). The rush by large corporations to engage in electronic commerce has meant more personal information is being gathered, shared, sold, and disseminated than ever before. However, the privacy issue moves far beyond protecting personal information on the Internet. In a larger sense, our privacy is being violated daily as new and all encompassing surveillance technologies come on the market. It is also clear that the emergence of ever pervasive and intrusive

technologies is representing a threat not only to privacy, but also to fundamental freedoms as citizens. We are building mechanisms and accepting them by allowing their implementation and use, in which we are, virtually, potentially building an electronic prison for ourselves. The potential mechanisms to diminish our basic freedoms are now being put in place (Ambrose and Gelb, 2001).

Technology has meant a wide-scale loss of privacy in comparison to what we enjoyed just 20 years ago. It is not just our personal information that is being abused. We are subject to almost daily scrutiny of our lives. In most countries, video surveillance cameras are accepted as a way of life to combat crime. Computers can now talk to other computers and, if properly programmed, can exchange information between machines automatically. Computers can monitor every aspect of our online activities. In the work place, electronic monitoring of employees is not unusual. In many corporations, it is becoming a standard practice in the name of administrative efficiency. Geo-positioning satellite (GPS) technology can now send email, faxes and messages to our pagers and, now, even to our cars. But that same technology can also pinpoint exactly where we are at any given time of the day. Whether we are in our car and just a short walk away from where we parked, someone somewhere will be able to know our location. This is just another bit of information that will end up somewhere in a database for possible current or future use by someone. Employers can monitor every aspect of employees' movements through these technologies. All of this will be in the name of administrative efficiency, monitoring productivity and being cost-effective. In time, governments will find persuasive reasons to also monitor our activities. It appears that society is whistling cheerfully as we descend willingly into the fast approaching dark tunnel of encroaching technological tyranny. The threats to our freedoms are even wider than ever imagined (Gupta and Sharma, 2001; Zaret and Sawyer, 2000).

The Impact of E-Commerce on Local, Social, and Political Values

E-commerce may have a significant, impact on local political and social life and on local values such as privacy, freedom of information and the right of free speech. Commerce, particularly local commerce, is a social activity that promotes community connections, reinforces community values, establishes community identity, and supports community development. Telecommuting or virtual mobility of labor permitted by global networks can have significant effects on policies, institutions, and social patterns—regional social infrastructure (e.g., housing, health care, and transportation), immigration law, dress standards, eating habits, and others. In the United States, with its many local tax authorities and its heavy dependence on sales tax to run local government, a significant shift from local to Internet commerce would have serious ramifications. On the face of it, this would put local businesses (which are taxed) at a competitive disadvantage, and it would certainly reduce the funds available for local social services. One interesting possibility is that the United States may respond to these pressures by moving toward a European-style, value-added tax.

Economic Impacts and Influences on E-Commerce

The promise of significant economic growth places electronic commerce high on many public and private sector agendas. Starting from basically zero in 1995, it is predicted to reach $1 trillion in 2003-05 (IDC, 1999). On the other hand, it could have significant effects on the structure and functioning of economies at the firm, sector and aggregate level. The impacts of these changes are diverse and likely to impinge on prices, the composition of trade, labor markets and taxation revenues. Adapting policy frameworks and institutions to these changes and ensuring that the full potential benefits of e-commerce are reaped will pose a number of challenges for structural policy. This section provides an overview of these issues.

Organizational Changes of Enterprises

E-commerce can influence the process of governance in various ways and in varying degrees, from improving the current mechanisms of delivery of services to transforming the entire mechanism and the nature of services themselves. The role played could be:

1. Purely technical in terms of automation of tedious tasks earlier done by humans,
2. To a facilitating/supportive role leading to more participatory and all-encompassing decision-making and implementation processes,
3. To a completely innovative role that involves new services and new mechanisms to deliver these services.

E-commerce can lead to increased participation, inclusion and integration on one hand and increased marginalization, loneliness and exclusion from information and communication on the other.

All enterprises face internal as well as external changes due to the emerging e-commerce technologies. They influence the way in which enterprises position themselves in the market and the way they collaborate with others. These new technologies have consequences for intra-organizational changes of production and working issues. The implementation of modern ICTs creates impacts on business relationships with partners and concurrently, the internal and external enterprise organizations with regard to its competitiveness. For any organization, the adoption of an e-commerce strategy generally entails redefining its value chain and re-engineering internal functions and processes to adapt to and benefit from the new information systems implemented. The dramatic changes in the way information flows throughout the organization deeply affect its entire value chain. A shift of importance of single functions of an enterprise is to observe. Value is shifting from production to product development, procurement, sales and marketing, and the provision of after-sales services. These are also the areas where e-commerce solutions are going to play a vital role in increasing companies' collaborative capabilities with partners along value chains. Co-operation motives can be cost and risk reduction,

knowledge transfer or just the reduction of time to market. Unfortunately, costs are still the main incentive for business activities or even the reason to shut down business activities. Reduced expenditures due to lower charges can be directly used in marketing, research and development, etc. In cooperation, enterprises can exploit the better cost position of the partner or use economies of scale.

Through the new possibilities of electronic collaboration and IT-supported production, it is expected that productivity will comparatively grow with the introduction of new ICT technologies. ICT technologies are becoming an important part of business processes and have become indispensable to stay competitive in new market constellations. They are necessary to reduce time to market, to find the best offer with the best price and most suitable partners for one's business. Productivity is the relationship between output and input. It should be viewed as value adding in addition to optimizing. It is a total concept that addresses the key elements of competition, i.e., innovation, cost, quality and delivery. Therefore, an increase in productivity can be achieved by enhancing the value-added content of products/services, or by decreasing the unit cost of production, or a combination of both (Uzzi, 1997).

E-Commerce and Local Businesses

Whitten and Steinfield show that as electronic commerce grows, it will create an important socio-economic side effect which will be increased competition with the traditional businesses in any given local community (Steinfield, Mahler and Bauer, 1999a; 1999b). Their study indicates that although local businesses may gain from the efficiencies afforded by electronic commerce, both in better serving their local constituencies and by reaching out to distant markets. In general local merchants are ill-prepared to take full advantage of electronic commerce due to various reasons, and thus are unlikely to see gains from it (Steinfield, Mahler and Bauer, 1999a; 1999b).

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; lower costs due to the ability to bypass many of the intermediaries in the retail distribution value chain (Wigand and Benjamin, 1995; Wigand, 1997); a higher degree of transaction automation, leading to improved service and lower labor costs and the ability to rapidly respond to changes in the market through price adjustments which can be almost in real-time (Bailey, 1998), as well as changes in product mix and marketing approach. These economies can potentially enable Web-based retailers to easily undercut the prices of local retailers who formerly faced little or no competition. Using transaction cost theory, one 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 (Steinfield and Whitten, 1999; Steinfield et al, 1999a; 1999b).

Community-Level Impacts of Electronic Commerce

E-commerce has many positive influences at the individual level whereby local buyers gain more value and greater access to suppliers. However, the results at the aggregate community level may be undesirable for local residents. Some of the community-level social costs of electronic commerce are: job losses, particularly in relatively unskilled areas already quickly disappearing in the digital economy; loss of local shopping options that, even with higher prices, afforded some conveniences; decreased attractiveness of the local community due to the loss of boutiques or other businesses that enhanced the quality of community appearance and life and reduced tax income from business, resulting in a reduction in the ability to fund government services that enhance community life (Whitten, 1999; Steinfield et al., 1999a; 1999b).

Clearly not all communities will be affected equally. 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 (Steinfield and Whitten, 1999; Steinfield et al., 1999a; 1999b; Choi et al., 1997).

Bundling or Tying Arrangements

E-commerce offers opportunity for building or bundling several products and services together. Many companies now offer a complete package of trading, information, logistics and supply chain management services. The bundling of such products and/or services may provide a convenient solution for buyers, and a way in which competing service providers can differentiate their offerings to attract more customers. In some cases it may also be a more efficient and economical way to provide both products and/or services, resulting in lower prices and promoting the development of a new competitive product or service. On the other hand, this may arise between competing outlets – particularly when some outlets are independently owned and operated but others have vertical links with manufacturers. Some wholesale operations could be squeezed out or replaced by Internet intermediaries. Potential issues may include:

- Suppliers refusing to deal with independent offline or online distributors because they have developed their own online retail Web sites;
- Suppliers refusing to deal with independent online distributors; and suppliers discriminating between price and quality or quantity of goods distributed via online and offline distribution channels.

E-commerce may have an impact on existing franchising arrangements, particularly where contractual terms provide for territorial limits. Many businesses may have entered into franchising arrangements on the understanding that they would have exclusive territorial rights, whereas for certain types of goods, e-commerce transcends global boundaries and thus would create a problem for franchising arrangements if these are territory-based. Also, in the new environment of e-commerce, franchise products will face competition both locally and globally.

Impact on Tax, Trade and Regulatory Policies

E-commerce has a strong impact on taxation and tax policy. Concerns have been expressed that e-commerce could result in the erosion of tax bases. Consumption taxes are levied on the principle of taxation at the place of consumption and according to rates set in individual countries, or in individual states in the case of federal nations. E-commerce, however, has the potential to undermine the application of domestic and national tax rules. Tax planning for an e-business differs from tax planning for a traditional bricks-and-mortar company. Historically, the generation of income depended on the physical presence of assets and activities. This physical presence, or permanent establishment, generally determined which jurisdiction had the primary right to tax the income generated. Because of the growth of electronic commerce, new e-business models (including digital marketplaces, online catalogs, virtual communities, subscription-based information services, online auctions, and portals) have emerged. Each allows taxpayers to conduct business and generate income in a country with little or no physical presence in that country. The separation of assets and activities from the source of the income represents a significant departure from historic business models. This change creates new tax planning challenges and opportunities (Penbera, 1999; Olin, 2001; Anonymous, 2000; Sharma and Gupta, 2003b).

Impact on Employment and Labor Policy

The growth of e-commerce is likely to have both direct and indirect impacts on labor markets as well as the composition of employment. Since e-commerce may create more knowledge-based products, it is likely to drive widespread changes in the labor market, shifting the composition of workers required to produce and deliver a product or service (Anonymous, 2000). There will be shifts in the kind of skills needed. Faster rates of innovation and diffusion may also be associated with a higher turnover of jobs. This may create more turbulence as workers will need to enhance their skills from time to time . This may result in reallocation of labor to the changing needs of the economy (Sharma and Gupta, 2003b; Anonymous, 2000).

One important change due to ICT is occurring in employment within economic sectors. Changes occur regarding the polarization of wages around skills, demand for specific qualified work (e.g., replacement of traditional craft and production engineering skills towards computer design skills), a need for ongoing training, other forms of work

contracts, and a shift to a smaller core workforce. Businesses will incur ICT costs including cost of new applications, developer time, software licenses, any hardware or software, support and maintenance costs, and business costs associated with making the transition to the new system, etc. The challenge remains to predict support and maintenance costs for the new technology, business costs associated with making the transition to the new system and other hidden costs. Considering the fast development of technological changes it is therefore getting much harder to ascertain the long-term impact of any technology choice (Penbera, 1999).

Competitive Environment – Influence on Monopolistic Trends

Internet-driven e-commerce will have a significant impact on the competitive environment of commerce. Because in e-commerce the entry cost is low, and transaction costs are lower, it allows small entrepreneurs to enter the marketplace easily. On the other hand, e-commerce especially facilitates enterprises whose success depends on network effects—"winner-takes-all" situations for companies with significant market share—which further facilitate their growth and market dominance. This effect may create problems for competition and antitrust policy. Certain players may become monopoly holders, which will have greater (and dire) consequences for competition. The recent evidence from Microsoft case has shown that there is considerable potential for weakening the competitive process. The monopolists will have strong interests in locking customers into network relationships. The concepts like trust, reputation, loyalty, pricing and commitment take on new meaning for online business (Uzzi, 1997).

Since e-commerce would transcend geographical boundaries, many big firms of known brands may not only expand their markets, but also may enter into new business activities across the broad spectrum of business activities. This may help to reduce the costs and prices, but it will create the danger of creating an e-commerce monopoly by a few corporations or networks of corporations. Many firms may use a low-price strategy to grab the market and eliminate the competition. Several mergers and alliances, in which two or more firms combine to achieve a large market share and have large economies of scale, can result in eliminating meaningful competition (Sharma and Gupta, 2003b).

Impact on Prices

Electronic commerce is widely expected to improve efficiency due to reduced transaction and search costs, increased competition and more streamlined business processes. Lower search costs may also lead to Internet consumers being more sensitive to price changes. By reducing search costs and increasing the flow of information, e-commerce might effectively shift power from producers to consumers and make it harder for firms to maintain higher prices (Bakos, 1997). However, empirical evidence does not support this claim in all cases. Brynjolfsson and Smith (1999) found that average prices on certain items in a particular industry sold through the Internet were lower than their equivalent

purchased through traditional retailers. However, in certain cases prices of goods sold through the Internet were higher than those charged by traditional retailers. Brynjolfsson and Smith (1999) justified this phenomenon by arguing that certain reductions in cost are offset by higher overhead costs elsewhere. They also indicate that increases or decreases in price depend on the size of the market (Sharma and Gupta, 2003b).

The Threat to SMEs

The adoption of e-commerce technologies is important for the ongoing survival of SMEs. The Internet can remove many of the competitive advantages of larger companies and provide opportunities for smaller enterprises. It can also include a cost-effective way for SMEs to market their business, launch new products, improve communications and information and identify potential partners (Sharma et al., 2003). However, SMEs also have to be aware that the Internet and e-commerce will create more sophisticated and demanding customers with higher expectations in terms of 24-hour access to company and product information and quicker responses to information requests.

From a theoretical perspective, small business and rural enterprises can benefit greatly with e-commerce as they gain access to more customers (even globally) and can even compete with large businesses since e-commerce is a "level playing field." Since SMEs are known for greater internal efficiencies, they may have an advantage over large businesses. However, recent studies indicate that the adoption of e-commerce by small business (as either a buyer or supplier in B2B and/or B2C environments) has not been as rapid as would be anticipated. Reasons cited for this include the cost, technology hurdles, and lack of expertise. E-commerce demands fundamental shifts in business strategies, operations and technologies. Many participating SMEs indicated that they have limited access to information about the business models and technologies that are the basis of e-commerce success. Lack of knowledgeable staff in SMEs is also responsible for non-adoption of e-commerce. This will result in SMEs being non-competitive in an e-commerce environment (Auger and Gallaugher, 1997).

Conclusions

As electronic commerce grows, there will be important socio-economic side effects. Although IT has the potential to reduce disparities between nations, asymmetric access to its benefits by different sections of society can have far reaching social and economic implications. Our research suggests that e-commerce technologies are helping organizations, societies and nations to accelerate their socio-economic growth and to provide more opportunities for businesses to grow, but it has also created many challenges and effects across numerous domains of society, and poses many challenges for policy makers. In this chapter we have identified a comprehensive set of socio-economic variables that are influenced by e-commerce. Further empirical validation could be done for these variables in different countries.

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