Relationship between Globalization and E-Commerce

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Abstract—**This paper focuses on the relationship between globalization and the adoption of a particular set of ICTs, namely the Internet and electronic commerce, at the firm level.**

The findings show that Globalization has differential effects on business to business and business to customer e-Commerce, however highly global firms are more likely to do business to business but less likely to do business to customer. The relationship between globalization and e-Commerce is complex and varied. The global firms use the technology more intensively, engaging in a wider variety of e-Commerce activities than less global firms.

Index Terms—**Globalization; ICT; e-commerce; firm performance.**

I. Introduction

Globalization and technological change have created a new global economy “powered by technology, fueled by "information" and driven by "knowledge". In the emerging new global economy, the use and integration of information and communication technologies (ICT) in business and has revolutionized relationships within organizations and those between and among organizations and individuals The ICT is being used by the firms to deliver their services at the locations convenient. Specifically, the use of ICT in business and marketing has enhanced productivity, encouraged greater customer participation, and enabled mass customization, besides reducing costs.

Two major powerful social and economic trends are globalization and the widespread adoption of ICT. Many argue that these two trends are closely associated, each driving the other forward, and both being driven by other common forces, such as trade liberalization, deregulation, migration, and the expansion of capitalism . Pohjola argues that the twin forces of globalization and the ICT revolution are combined to create the so-called new Economy, marked by higher rates of economic and productivity growth [1]. Technology is both driven by and a driver of globalization, as both forces continually reinforces one another [2].

The process of globalization creates new challenges and opportunities for firms. The opportunities include access to new markets and participate in global production networks that are becoming prevalent in many industries such as automotive, electronics, toys and textiles. Globalization has many positive, innovative and dynamic aspects, all related to the increased market access, increased access to capital, and increased access to technology and information which have led to greater income and employment opportunities. Challenges come from foreign competitors entering firms’ domestic markets, and from domestic competitors reducing their costs through global sourcing, moving production offshore or gaining economies of scale by expanding into new markets. Globalization challenges firms to become more streamlined and efficient while simultaneously extending the geographic reach of their operations.

Adequate response to these opportunities and challenges requires a restructuring of strategy and processes of firms. [2].Due to increased competitive pressure, companies are using new technologies to extend their products and into the international marketplace [3]. The firms are also using new technologies to achieve innovative organizational forms [4], [5].

The adoption of ICT such as the Internet makes it cheaper and easier for firms to extend their markets, manage their operations and coordinate value chains across borders [6], [7], [8]. As Greenspan (2001) mentioned, by lowering the costs of transactions and information, technology has reduced market frictions and provided significant impetus to the process of broadening world markets [9]. ICT adoption fosters globalization by reducing the cost of transaction and coordination and creating new and expanded markets with economies of scale [10], [11].

This paper focuses on the relationship between globalization and the adoption of a Particular set of ICTs, namely the Internet and electronic commerce, at the firm level.

II. Conceptual Framework

Globalization is one of the most contested topics; in fact even the definition of globalization is hotly debated and often contested, it has not been reached widely-agreed and precise definition.. Globalization is conceptualization of the international political economy which suggests and believes essentially that all economic activity must be conducted within a perspective and attitude that constantly is global and worldwide in its scope [12].

The most obvious signs of globalization are the constant acceleration of the increasing rhythm of international commerce and of the trans- frontiers investments, and also the increasing competition which should result in welfare. Globalization represents a fundamental transformation of the structures, organization and nature of international commerce. All the industrial sectors undergo deep structural changes which become more obvious in the sectors highly based on advanced technologies. Globalization can be defined by three peculiar dimensions: discipline in global market, financial contents and economic network.

Globalization redefines the role and functions of nation state, emphasizing its strategic role in coordination opposing to the interfering redistributive state, specific to the period

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after the Second World War. The extension of globalization and the emergence of transnational societies has brought along an increased preoccupation for the components of the marketing and distribution policy. Starting from the mid 90s, the process of distribution internationalization has intensified. Globalization has been defined as the process in which the production and financial structures of countries are interlinked by an increasing number of cross-border transactions [13].

The findings of empirical macroeconomics researches show that the global economies invest higher levels of ICT. Since it is the firms which make most of these investments, it is reasonable to expect that global firms would likely adopt technologies such as the Internet and e-Commerce. The empirical studies support the argument that the opening of markets to trade and foreign investment leads local firms to invest in ICT and to remain competitive. The process of globalization is a powerful driver for firms to adopt specific ICT and e-Commerce. The reasons for globalization are, economic and technological in nature. Geopolitical in the sense that previously isolated geographical regions are becoming more connected and able to compete on the world stage. Increased private financial investment, trade activity and tourism are economic and financial manifestations of globalization, while increased connectivity through Internet connections, e-Commerce is reshaping business in a globally orientated marketplace.

Globalization and its effects have caused anxiety worldwide about the direction that society is taking. Traditionally seen as an economic phenomenon linked with the appearance, development and consolidation of the global market, it has become connected with areas previously regarded as bearing little relevance to economic development. Globalization is characterized by four major trends: increased flows of commodities and persons; expansion and diversification of financial activities; development of communication, networks, knowledge and relationships; and increasing disparities, even though it must also be recognized that overall wealth has increased enormously as a result of globalization and of the more open trade it has. The analysis in this paper is based on a conceptual framework that relates globalization, e-Commerce adoption and impacts on firm performance. The framework posits that the degree to which a firm is already globalized will influence the extent to which it adopts e-Commerce and the types of e-Commerce activities it undertakes. It also posits that the degree of globalization will influence firm performance directly as well as indirectly, by influencing the extent and nature of firm e-Commerce activities, which also influence impacts on firm performance.

III. E-Commerce

The internet has been likened, in its ability to change the nature and operations of markets, to such past epochal events as the advent of railroad and the introduction and growth of the telephone system [26]. Globalization has been defined as the process by which markets and production in different countries are becoming increasingly inter-dependent due to the dynamics of trade in goods and services and flows of capital and technology [13]. Globalization can be defined as any economic transactions where the buyer and seller come together through the electronic media of the Internet, form a contractual agreement concerning the pricing and delivery of particular goods and services, and complete the transaction through delivery of payments and goods and services as contracted [9]. E-Commerce refers to a wide range of online business activities for products and services [20].

E-Commerce is the exchange of goods and services between four broad groups over the Internet. This can happen between businesses and consumers, businesses and businesses, intra-companies, and consumers and consumers. E-Commerce encompasses any commercial activity that takes place directly between a business, its partners or its customers through a combination of computing and communications technologies. E-Commerce takes into account sales, marketing, communications, service, and workflow. The entire workflow in an e-Commerce model is automated and streamlined in order to avoid mistakes and eliminate paperwork [19]. E-Commerce is one of ten trends predicted to transform the printing industry and is considered to be a new way of communication. While the print e-Commerce market is still undergoing significant changes it is certain that successful printers must incorporate an effective and automated Web-based customer interface and workflow system. The combination of traditional brick and mortar and electronic interface (online ordering, service and support) has become popular in print e-Commerce [10]. Additionally, there are several systems out on the market for implementing this process.

E-Commerce is usually associated with buying and selling over the Internet, or conducting any transaction involving the transfer of ownership or rights to use goods or services through a computer-mediated network. Though popular, this definition is not comprehensive enough to capture recent developments in this new and revolutionary business phenomenon. A more complete definition is: E-Commerce is the use of electronic communications and digital information processing technology in business transactions to create, transform, and redefine relationships for value creation between or among organizations, and between organizations and individuals [14].

IV. The Relationship between Globalization and E-Commerce

A. Economic Structure

Globalization and e-Commerce are expected to change economic structure of nations. The expected superior economic structure is mainly influenced by the above two factors. In the literature the new structure is generally referred as Knowledge Economy, New Economy or E-economy. E-Commerce not only reduces communication costs, but also increases flexibility in locating activities. Research posits that internet technology has lead to an increase in international trade [8], [17].

International trade has increased over time, with one hypothesized cause being the use of technologies such as e-Commerce. E-Commerce is a nebulous term used to describe business sales transactions mediated by the Internet or other computer networks rather than through direct interaction between humans. E-Commerce benefits internationalization in two ways:

i. There is a direct substitution of e-business technology and processes for physical locations, manual processes, or other expediting functions.
ii. E-Commerce reduces coordination costs, which can reduce the costs of working with those foreign subsidiaries still required because of the nature of the product or service or because of regulation or cultural issues [16].

While any evaluation of the potential consequence of the growth of e-broker age activity is necessarily speculative, it seems plausible that those consequences will derive primarily from changes in the costs of acquiring, processing and transmitting information among market participants (Sampler, 1998). In this regard, segmenting the brokerage process into a number of components or value-added activities facilitates an evaluation of how e-Commerce might alter the completive process [23]. The first component involves the basic linking of buyers and sellers. Here the booker's primary role is to serve as an intermediary between those selling and those purchasing securities. The advent of e-broker services has significantly expanded the scope for competing in the transaction function. It is clear that the growth of e-brokerage services has contributed to substantial reductions in average brokerage commission wherever those services have taken hold. Most obviously, the Internet has dramatically reduced the cost of communicating information on a point to multi point basis. In addition, e-Commerce is enhancing the underlying economies of scale in processing securities transactions.

B. Firm Performance

We also expect that there will be a direct relationship between firm globalization and firm performance. We would expect highly global firms to perform better in terms of increased sales, lower costs, and improved competitive position. It is likely that global firms will realize greater impacts on performance, because they can employ knowledge and resources developed throughout their global operations to improve business processes and more effectively deploy ecommerce technologies. Global firms are also in a better position to benefit from e-Commerce as they can achieve economies of scale and global reach. Globalization should also have an indirect effect on performance through e-Commerce adoption, since highly global firms will use ecommerce more extensively, and more extensive use will result in improved performance. Ecommerce adoption will thus mediate the effects of globalization on firm performance.

These direct and indirect effects of globalization should have additive functions. This leads to our third and fourth hypotheses.

Hypothesis 3; Firms that are highly global will experience greater performance improvements since adopting e-Commerce.

Hypothesis 4; E-Commerce adoption will mediate the impacts of globalization on firm performance.

Adoption of new information technologies is expected to result in improvements in firm performance, such as reducing transaction costs and closer coordination of economic activity among business partners. E-Commerce specifically (B2B) is predicted to result in lower coordination or transaction costs due to automation of transactions online, as well as productivity and efficiency gains. E-Commerce also is expected to facilitate entry into new markets or extension of existing markets.

We would thus expect the extent to which firms adopt e-Commerce to lead to specific types of performance improvements. To illustrate, we would expect a firm that uses the Internet for sales and marketing, for procurement, and to coordinate and share information with suppliers and customers would see greater impacts on performance than one that simply has a website with marketing information. If this is the case, then there should be a direct relationship between level of adoption and firm performance, in terms of increased efficiency, coordination, and sales and market position. This leads to our fifth hypothesis.

Hypothesis 5; Firms with a greater level of e-Commerce adoption will experience greater impacts on performance.

C. Relationship

Firm globalization is heralded as a key driver of e-Commerce diffusion .We expect that highly global firms are likely to employ e-Commerce more intensively than less global firms, for several reasons.

i. Firms facing foreign competition are under greater pressure to adopt technologies such as e-Commerce that enable them to protect or expand market share and operate more efficiently.
ii. Firms doing business outside their own country may be more motivated to lower their transaction costs (such as search for information, negotiation, and monitoring of performance) by using information technology. We would expect that this is true in the specific case of Internet-based e-Commerce. Using the Internet for transactions and coordination can save time and money on delivery of goods by using rich information flows to simplify and streamline the flows of physical goods in the supply chain.
iii. Firms that buy and sell in international markets are under pressure from trading partners to adopt e-Commerce to improve coordination with other members of the value chain. This is especially true in the case of global production networks dominated by multinational corporations that may require partners to adopt ecommerce in order to do business with the multinational corporations. These considerations lead to our first hypothesis.

Hypothesis 1; Firms that are highly global will have a greater overall level of e-Commerce adoption.

It is often assumed that e-Commerce adoption is a global process, driven by a common set of actors, primarily the MNCs who control global production networks and whose influence transcends national boundaries. However, there is a theoretical basis for expecting that some industries and business activities will tend toward global convergence while others will be marked by local divergence. [18].

Globerman and *et al* (2001) contend that the impacts of e-Commerce differ across various stages of an industry's value chain, and that purchase of business inputs (B2B) is becoming globalized while purchase of end services by consumers (B2C) tends to remain localized. They focus on the retail brokerage industry and conclude that retail (B2C) e-Commerce is relatively unaffected by globalization and is characterized by multi-domestic competition due to the heterogeneity of consumers and different national regulatory systems. [9].

Steinfield and his colleagues furthermore argue that local businesses can develop Web strategies that successfully leverage their local physical presence [25]. Thus, firms that leverage their local presence with their online business strategy may have a competitive advantage over firms with only a virtual presence. Based on the combination of theory and empirical findings, we hypothesize that globalization has different effects on B2B versus B2C ecommerce adoption, with highly global companies engaging more in B2B and less global companies engaging more in B2C. Since B2B e-Commerce constitutes the large majority of ecommerce activity, this is consistent with hypothesis 1, as the higher levels of B2B carried out by global firms would dwarf the advantage of local firms in B2C, leading to higher overall ecommerce adoption by global firms.

Hypothesis 2a; Firms that are highly global will have higher levels of B2B e-Commerce adoption.

Hypothesis 2b; Firms that are highly global will have lower levels of B2C e-Commerce adoption.

The relationship between globalization and e-Commerce is complex and varied. The global firms use the technology more intensively, engaging in a wider variety of e-Commerce activities than less global firms. However, when e-Commerce is broken down in terms of the type of business relationship involved, it reveals a very different picture for business to business and business to consumer e-Commerce, with global firms more likely to engage in the former and local firms in the latter. The findings provide that upstream activities, which involve business to business transactions, are more global in nature, while downstream activities involving business to consumer interactions are more local, or multi domestic.

Although globalization has a negative effect on business to consumer, firms derive most of their performance benefits from business to business rather than business to consumer, so the net effect of globalization seems to be a positive one on firm performance. Local firms do appear to be benefiting from e-Commerce though, especially business to consumer services, which drive increased sales. Global firms get more performance improvements from e-Commerce than local firms, as they tend to adopt business to business, which has greater impacts across a broader range (efficiency, coordination, and commerce) than business to consumer, which is a driver only of increased sales and efficiency. Global firms also get more direct impacts from ecommerce, presumably as they have greater resources and scope to use it better.

Overall, the findings support the notion that e-Commerce is reinforcing rather than transforming existing commerce patterns. Our major finding is that business to business e-Commerce sales and services tend to be global, while business to consumer tends to be local or multi domestic, which matches the pattern hypothesized for upstream and downstream business activities; namely, global firms (particularly manufacturing firms) are more likely to do business with other businesses, while local firms (especially finance and distribution) are more likely to provide sales and services to consumers.

V. Conclusions

This research shows the relationship between globalization and e-Commerce. The findings imply that e-Commerce will reinforce existing international competitive advantages rather than leveling the playing field and enabling local firms to compete with global firms in international markets. Doing business across national borders involves more than simply setting up a web site and offering products or services to the world. The virtual world of commerce must be supported with physical, financial and information processes that global firms are more likely to already have in place, and which local firms cannot duplicate easily or cheaply.

In fact local firms may have valuable resources that put them at a competitive advantage in their home markets. These include local knowledge, strong brand names, distribution channels and service infrastructure. These resources can be an advantage in B2C e-Commerce and are not easy for global firms to replicate in each national market around the world. This implies that less global firms can look for opportunities in local markets rather than trying to use the Internet to reach far-flung international markets. If these firms do want to expand into global markets, they are more likely to do so by adopting B2B ecommerce to break into the global production networks for multinational corporations than by trying to sell directly to foreign consumers.

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