An Assessment and Strategic Guidelines for Developing E-Commerce in the Asia-Pacific Region

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The Asia-Pacific region is growing in e-commerce adoption despite a global economic slowdown. Developed countries that have been offering e-commerce have shown impressive performance in their respective economies, but the Asia-Pacific region still lags behind in the e-business race. This is due to several factors which include language, education, technology, and technical infrastructure. The aim of the following discussion is to develop a framework that embraces key global driving forces and national policy forces impacting e-business readiness in the Asia-Pacific region through conceptualization of the key global forces as primary drivers of e-business readiness and national policy drivers as enablers of e-business growth. Using these determinants, a strategic map is then developed to identify where various countries in the Asia-Pacific region are currently positioned in terms of their respective e-business readiness. Key factors that act as impediments to e-commerce growth as well as strategies to accelerate the growth of e-commerce in the Asia-Pacific region are presented.

Introduction

The transcendent importance of the Internet's role in the business environment is turning into a powerful agent of globalization not only in economic, but also in social and cultural terms. Business in general and global e-business in particular, are experiencing a paradigm shift toward a promise of ubiquitous information flow and connectivity, especially in developing economies. E-business continues to offer more effective business results, improve efficiency, and reduce costs, by connecting customers, employees, and suppliers around the world without regard for geographical boundaries. E-business is becoming a mechanism for information dissemination, a medium between individuals and organizations, and a virtual marketplace for goods and services (Kiiski & Pohjola, 2002), while the technologies of e-business are fundamentally redefining the rules of business, creating a new playing field free from time and space. For the first time, people have become members of a single community that is united by shared knowledge and experience.

The global readiness of the Internet is of paramount importance to infrastructure planners and key policymakers, especially for the leaders of the developing economies, including
the Asia-Pacific region. In order to be more effective in their e-business initiatives, it is important for key leaders in the Asia-Pacific region to assess their e-business potential to identify relative strengths and weaknesses and thereby develop strategies and policies to address them. To develop and deploy effective strategies, it is necessary to have a framework that enables the assessment of a country’s e-business potential.

The aim of the following discussion is to develop a framework that embraces key global driving forces (e.g., telecommunications infrastructure) and national policy forces (e.g., government regulations) impacting e-business readiness in the Asia-Pacific region. We conceptualize the key global forces as primary drivers of e-business readiness and national policy drivers as enablers of e-business growth. Using these determinants, a strategic map to identify where various countries in the Asia-Pacific region are currently positioned in terms of their e-business readiness is developed. The strategic value of the map lies in its ability to assist a country’s leaders and key decision makers to identify the critical parameters that have become stumbling blocks for advancing in the e-commerce revolution. Our model provides direction for strategic policies to better position the countries in order to realize success in the e-commerce race.

**An Assessment of E-Business Readiness**

To ascertain e-business readiness, we developed a strategic map to position countries in the Asia-Pacific region using the four key drivers shown in Figure 1. These four drivers include the following: (a) telecommunication infrastructure, (phone lines, fiber trunks and submarine cables), DSL (digital subscriber line), access to computers, number of Internet hosts, number of Internet Service Providers (ISP) and available bandwidth, and broadband access; (b) market infrastructure, which relates to the contents on web servers and logistics and other supports in order to conduct business; (c) user access infrastructure (number of Internet hosts and number of websites, web users as a percent of the population as well as ISP availability and costs for consumers, and PC penetration level); and (d) governmental and regulatory infrastructure, which consists of legal infrastructures, currencies and clearing systems, the public key infrastructure (PKI), and the bank and financial network infrastructure.

These four key drivers were mapped onto a grid with respect to their intensity on each driver. Figure 2 represents the cumulative mapping of their placement of each country in terms of the four key drivers. The specific country used in Figure 2 are Singapore (SG), Hong Kong (HK), Australia (AU), New Zealand (NZ), Japan (JP), South Korea (KR), Taiwan (TH), Malaysia (MY), Indonesia (ID), Philippines (PH), India (IN), and China (CN). These countries were used as they are commonly identified as emerging Asian economies.

As can be seen in Figure 2, countries occupy different positions on the map. Several implications can be drawn regarding their e-business readiness. First, the strategic position of a country tends to follow the pattern identified by the Economist Intelligent Unit (EIU), which uses the following two composite attributes to assess the sixty largest economies on "e-readiness". The first attribute deals with the connectivity rating, which
Figure 1. Key Drivers and Enablers to Assess E-Business Potential in the Asia-Pacific Region

Figure 2. Strategic E-Commerce Map for the Asia-Pacific Region
measures the state of existing telephone networks and Internet access. The second attribute focuses on the general business environment rating, which uses criteria that include the strength of the economy, outlook for political stability, openness to trade and investment, and taxation policy (Economist Intelligence Unit, 2001; Le & Koh, 2002).

The EIU (2001) scores the sixty largest economies and accordingly classifies them into four groups. For application in our discussion, instead of listing all sixty countries, only selected Asian countries in the region are listed along with their e-readiness classification. The first group is labeled "e-business leaders." These countries are well-poised for e-business having the greatest intensity on the four key drivers. However, some governmental and regulatory concerns still exist. The second group is labeled "e-business contenders." Countries in this group have a positive business environment and a satisfactory infrastructure, but some aspects of the e-business architecture, such as market infrastructure and privacy safeguards, for example, are not fully in place. The four Asian tigers, Singapore, Hong Kong, Taiwan, and South Korea, are faring very well in their efforts to harness e-business potential. In fact, Singapore and Hong Kong are classified as "e-business leaders" and Taiwan and South Korea as "e-business contenders." Singapore has invested heavily in building high-speed Internet infrastructure and has launched a computer education program which has helped the nation to achieve leverage on e-business initiatives (Bennett, 2002). It has become a nation where entrepreneurs and innovators are taking active roles in the new information age.

Japan, in the second group of "e-business contenders," has a business climate that is conducive to the e-business environment. Despite the poor performance of the economy, Japan experienced strong performance in e-commerce in sales, especially the automotive industry, technology industry, and industrial machinery goods industry (UNCTAD, 2002). The rapid growth of DSL Internet service is also stimulating demand, providing high speed access to households and businesses. Although Japan is making progress in broadband technologies access, infrastructure connectivity, and the government proactively promoting e-awareness and educational plans, e-commerce volumes remain comparatively low given the high level of disposable income (UNCTAD, 2002).

South Korea is another major Internet player. The Korean government has launched new initiatives such as "One PC, One Home" to speed up PC diffusion (Rao, 2001). According to UNCTAD (2002) "the Republic of Korea has the world’s largest penetration of broadband technologies. A number of factors seem to be playing an important role in the rapid deployment of this technology, including proactive government policies supporting the laying of a dense fiber optic network in the major urban centers, the high density of Korea’s residential patterns which facilitated the establishment of “last mile connection,” and intense competition between operators, resulting in affordable subscription costs.” Key strategic considerations in building and sustaining e-business potential in developing economies include policies focusing on research and development (R&D) investments, attracting foreign investment to build infrastructure connectivity, and educating the population.
"E-business followers," the third group, have pursued policies to foster the environment necessary for e-business. Yet, a great deal of work needs to be completed before accruing the full potential of e-business. The fourth group, according to the EIU study is labeled "e-business laggards". Countries in this category face major obstacles to e-business growth. China and India fall in the "e-business laggards" category and Indonesia in the "e-business followers" category. This means to catch up with other countries, key decision makers and leaders of these countries cannot afford to stay behind the race. Both the governments of India and China have committed to the growth of the Internet. China, for example, invested heavily in the 1990s in the telecommunications industry. As a result, the Chinese telecommunication infrastructure has been growing rapidly (ITU, 2003) while India is gaining foothold in the Information Technology (IT) industry. Given the placement of these four readiness groups, it is useful to develop strategic guidelines to enhance e-commerce readiness.

Strategic Guidelines

Developing human resources for electronic commerce

For the less advanced countries, enhancing awareness and public understanding about the benefits of e-commerce is an important starting point in their policy planning, as many people are not aware of the possibilities information and communication technology (ICT) and the Internet offer to them. Through using the basic education system in the countries, they can increase the capacity of local people in using the new technologies. The Asia-Pacific region can concentrate on developing human capacity building, basic access to ICT, low-cost hardware and software, the use of local language, Internet portals and a higher level of government facilitation. Governments, private training institutes, international and regional organizations, Non-governmental Organizations (NGOs), and universities have to make special efforts to develop human resources for e-commerce. E-commerce adoption requires improved e-commerce knowledge and skills, and improved language proficiency (especially in English). For example, governments in many countries have started to introduce basic education in digital literacy in primary and secondary schools. E-commerce training courses should be constantly updated as new innovations and practices emerge very rapidly in this field. Institutions responsible for human resource development of e-commerce personnel should provide appropriate incentives for e-commerce courses to be kept up-to-date. Increasing the number of programs or activities for human resource development for e-commerce will only be effective if the education and training matches the changing needs of the industries concerned. There is also a need for monitoring or measuring mechanisms to facilitate the on going development of IT skills and continuous learning. Given the rapid changes in the IT industry, this is an imperative, especially in developing countries. Many Asia-Pacific countries have these types of policies, however, they are not monitored, thus there is no way to measure the impact on e-commerce.
Building Consumer Trust

Consumers are also concerned about a number of dimensions of trust: trust in the security of value passed during electronic transactions with organizations that are ‘virtual’ in a disconcertingly ineffable way and trust in the privacy of personal data arising from electronic transactions (Roquilly, 2002; Fjetland, 2002; Ghosh, & Swaminatha, 2001). Other than in North America, Japan, and integrated Europe, the infrastructure for e-commerce is not in place for effective e-commerce transactions. The one important reason for slow penetration has been the scale of investment in infrastructure, and the small volume of transactions over which to amortize (Panagariya, 2000, Dutta; 1999).

The security issue in particular is perceived as critical across the Asia-Pacific region, and the majority of Small and Medium-sized Enterprises (SMEs) for instance, have a fear of electronics. This is primarily due to the low level of technology diffusion and awareness making it a psychological barrier for SMEs as confirmed in various reports (APEC, 2001; A Report Prepared for Asia-Pacific Foundation, 2002; Beal, 2000). Many of these SMEs do not have technical backgrounds, and are not convinced that technology standards, such as encryption, will protect them. Thus, SMEs are not willing to use electronic payment systems. Credit cards and e-checks are naturally a distant dream for many of them. Security, legal, and liability issues have been frequently identified as very important concerns of participating SMEs in the Asia Pacific region. Asia Pacific SMEs do not trust electronic commerce or the technical infrastructure to support it. Trust and confidence in a sound legal framework and security standards are necessary to make e-commerce grow on a larger scale (APEC, 2001).

Synergies between national and regional economic blocks

All countries in the Asia-Pacific region should improve access to ICTs, design the necessary legal, and institutional frameworks to educate the governments, businesses, and civil society to more efficiently use ICTs in their daily practices and create an environment for further development of e-commerce. The challenges are immense given the very uneven development levels of countries and groups of countries in the Asia-Pacific region. Challenges include, poor or even nonexistent telecommunication networks in many countries, high access cost, unresolved issues of legal and regulatory frameworks (including those of taxation and consumer protection), lack of skilled personnel, security, (especially in online financial operations), and linguistic and cultural differences. There is a need to support the integration and interoperability of regional e-commerce initiatives through various international and regional economic blocks such as the Asia-Pacific Economic Cooperation (APEC), North American Free Trade Agreement (NAFTA), and the European Union (EU).

Creating access to ICT

In the Asia-Pacific region, there are a number of “digital divides,” not only between the richer and poorer countries, but divides between urban and rural populations and between more and less educated or affluent groups. Although, the number of female Internet
users in a number of countries in the region is catching up quickly with those of male users, women are less present when it comes to the actual use of the new technologies. Furthermore, in many countries, women make up the majority of the rural population, which is often marginalized in areas of telecommunication infrastructure, education, and training. Therefore, governments should formulate national ICT and e-commerce strategies that help to ensure universal access for all socio-economic groups. In addition to gender-sensitive policies, government policies should ensure pricing and rebalancing to reduce or update tariffs for affordability for access to rural and underprivileged groups. A number of prerequisites for access to ICT include education and training, local content, socio-cultural awareness, and a stable social, economic, and political environment. Appropriate technologies need to be developed to address the needs of disadvantaged communities.

**Discussion and Conclusions**

To be successful in the e-business environment, government policies must be focused on developing and deploying a robust telecommunications infrastructure, enabling and facilitating increased user access to the Internet, developing rigorous regulations and legal structures to support e-commerce initiatives, protect users against fraud, and provide fiscal policies that stimulate business growth. As can be seen from the strategic map in Figure 2, India, China, and Indonesia fall on the lower end of the scale on all of the four drivers. Though India is slightly ahead of China and Indonesia, all three countries need to work on removing the obstacles to e-business growth.

Compared to India, China, and Indonesia, Malaysia has come much further in e-business initiatives. According to the EIU, it receives 33rd rank, where as India and China received 50th and 51st ranks respectively. Evidence shows that the Malaysian government has been taking a proactive role in aggressively promulgating the development of high tech industries and the benefits of the Internet and e-commerce among businesses and consumers (Le & Koh, 2002). Even though Malaysia is still in the development stage of e-readiness, its business climate, economic conditions, political climate, and the level of technological development are favorable for e-business growth. E-commerce readiness no doubt requires infrastructure connectivity as one of the important measures in explaining variations in the use of the Internet. However, e-commerce activity also greatly depends upon sound political institutions and the availability of credit electronic payment channels, such as credit cards (Oxley & Yeung, 2001).

In conclusion, governments in the Asia-Pacific region are embarking on a number of initiatives that are having a significant impact on the readiness of e-business. The region's changing attitudes toward opening markets for trade and investment are greatly assisting to build the infrastructure necessary for e-business. Although emerging economies such as India, China, and Indonesia lag behind on various drivers of e-business readiness, their aggressive policies ensure them a new place in the borderless digital economy. These and other developing Asian countries are recognizing that e-
business success depends on building the region’s infrastructures, including telecommunications, market, user access, and government regulatory and commerce. Such an entrepreneurial mind set, coupled with new global e-business initiatives, put these countries on the global e-business landscape. These are key components for building such a foundation to gain a global competitive advantage in the borderless economy, where time, space, and information interact with no restrictions.

E-business is clearly an integral component for all countries in today’s “Information Age”. Through assessment of a country’s state of preparedness it is then possible to focus attention and energy on the development of effective and appropriate policies and strategies for a country’s e-commerce developments. We have just reviewed the Asia-Pacific region, but the principles we have highlighted can be applied to other economic regions and countries. We close by strongly recommending such considerations be made in the development of key policies and strategies with respect to all e-commerce and e-business initiatives worldwide.

References


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