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FACT FINDINGS AND LESSONS LEARNED FROM THE COMPARATIVE STUDY ON INFORMATION TECHNOLOGY (IT) USAGE BY SMALL AND MEDIUM ENTERPRISES (SMEs) IN LATIN AMERICA AND ASIA

ECLAC's International Trade and Integration Division (DCII) will launch the book titled "Information Technology for Development of Small and Medium-sized Exporters in Latin America and East Asia" in the end of September 2005. The report provides an overview of the present condition of Information Technology (IT) and its use to promote international trade. It focuses on the experiences of IT usage by small- and medium-sized enterprises (SMEs) in the Latin American and Asian-Pacific regions, with a special focus on SME exporters in the 13 researched countries, that were selected from the Forum for East Asia - Latin America Cooperation (FEALAC) member countries.

This issue of the FAL bulletin is produced based on the executive summary of the book. The complete version of each country study will be made available shortly in DCII's website, www.eclac.cl/comercio/IT_SME. For further information, please contact with Mr. Yasushi Ueki yasushi_ueki@ide.go.jp, or trans@eclac.cl

BACKGROUND AND FRAMEWORK

This book is the product of a research project titled "Comparative Study on East Asian and Latin American Information Technology (IT) Industries," which was carried out by DCII, in collaboration with the Institute of Developing Economies Japan External Trade Organization. It was financed by United Nations Development Programme, established by the Government of Japan.

The main purpose of the project was to use the experiences of IT usage by SMEs in Latin America and Asia, especially focusing on SME exporters, in order to: (i) enhance the intra- and inter-regional business ties in the IT-based supply chain; (ii) to develop SMEs through IT use; (iii) to promote inter-regional cooperation between SMEs in the two regions; and (iv) to reduce poverty through development of SMEs.

This volume includes 13 country studies selected from FEALAC member countries – seven from Latin America (Argentina, Brazil, Chile, Colombia, El Salvador, Mexico and Peru) and six from Asia (China Mainland, Japan, Republic of Korea, Singapore, Thailand, Vietnam). Each country report addresses the following issues: i) SMEs' contribution to economies; ii) IT usage by SMEs; iii) case studies on development of IT and SMEs; and iv) government policies designed for SMEs, IT, and international trade. Before the finalizing of these reports, the International Seminar "Information Technology for Development of Small-and Medium-sized Exporters in East Asia and Latin America" was held in November 2004 at

ECLAC ([FAL Bulletin No. 220, December 2004](#)).

We now present summaries of the present situations of FEALAC economy, informatization in the studied countries and policy issues that came out of the seminar.

BRIEF OVERVIEW OF THE FEALAC ECONOMY

FEALAC is composed of 32 economies (17 from Latin America and 15 from the Asia Pacific) with a great variety in terms of population, economic scale, geographic location, development stage, and so on. More than 2.5 billion people, or 41% of world population (in 192 countries) live in FEALAC: 33% of world population lives in Asia-Pacific, and 8% in Latin America in 2002 (World Health Organization estimates). This uneven distribution of population should be reflected in differences in economic scale and international trade between Asian-Pacific and Latin American FEALAC member states, even though the dynamics of economic activities will be affected by other factors.

Intra-regional trade plays an important role in each region, but especially in Asia. In 2003, 37.8% of exports from and 45% of imports to FEALAC Asia were intra-regional. These numbers have increased considerably since 1990. In contrast to the situation in Asia, intra-regional trade in FEALAC Latin America is moderate. Less than 15% of that region's exports and 16% of its imports were intra-regional in 2003; those figures are almost as same as those for 1990. By contrast, the percentages of Latin America's imports from Asia have expanded from 8.7% in 1990 to 15.3% in 2003, reaching the same level as the intra-regional values.

PRESENT IT CONDITIONS

IT conditions at the country level

There is a clear correlation between income level and penetration ratios of IT products and services. The 13 surveyed countries include high-income nations such as Japan, Republic of Korea and Singapore, and developing countries such as El Salvador, Thailand and Vietnam. In accordance with this correlation, we can observe large gaps among the selected countries in IT diffusion at the country level. The leading IT-diffused countries among the FEALAC members are Australia, Japan, New Zealand, Republic of Korea and Singapore. Cambodia, Laos and Myanmar, conversely, are the least-digitized countries.

Among the 13 countries, the penetration ratios of telecommunications services, PCs and Internet for Japan, Republic of Korea and Singapore are the highest among the FEALAC region and equivalent to the OECD average. Those for Chile ranked fourth among the FEALAC and first in Latin America, although there are large disparities between the ratios for Chile and OECD average levels. Brazil and China have a massive number of IT consumers, but diffusion rates in these countries remain at a low average level.

Informatization of Firms

It is difficult to make a strict cross-country comparison on informatization of SMEs by using official figures, due to differences in the definition of SMEs among countries and institutions as well as difference in the methods and timing of IT indicator measurements. Especially in less developed countries in Asia and Latin America, faithful government statistics are not always available. For these reasons, we cannot do comparative studies on the present IT usages by SMEs in the researched countries. We could only overview the present states of IT usage by firms in the surveyed countries within the limits of data availability. The data we obtained were mainly furnished by governments, chambers of commerce, consultancy firms, and universities.

Penetration ratio of personal computers. Introduction of PCs by the corporate sector is entering into the mature phase in developed countries. Even in semi-developed countries, almost all of the large firms have installed PCs, even though there are large gaps in their adoption between micro and medium-sized

enterprises.

Penetration ratio of the Internet. As with PC usage, almost all large firms in IT-developed and semi-advanced countries have introduced the Internet. The gap in adoption of the Internet is also observable between medium and small enterprises. The severer situations were observable in less-developed countries, where less than a quarter of the surveyed entrepreneurs access the Internet daily, and many of them utilize public Internet access. On the other hand, there is a significant difference in progress in the diffusion of broadband Internet, even among companies connected to the Internet.

Internet applications. E-mail and information collection are the two major intended purposes of Internet use. Websites are gaining importance as a medium to advertise companies and their products and services. Around 20-30% of SMEs have established websites in some semi-developed countries. Nevertheless, large gaps in website ownership exist among different sizes of firms and industrial sectors even in semi-developed countries. E-commerce is in the initial development stage and growing at a fast rate. B2B dominates and accounts for more than 90% of the total e-commerce transactions in many countries. A small number of large enterprises have adopted e-commerce. SMEs who use it still seem to be the exception.

DEVELOPMENT OF SMEs

Contribution of SMEs to National Economies

The definition of SMEs is not harmonized internationally. There may be differences in the definition between governmental affiliates even within a country. But based on our sources, SMEs account for more than 95% of firms in most of the surveyed economies. They create a significant amount of employment – 50 to 85% of the total. Compared to the significant importance of SMEs in terms of number of firms and employment, their contributions to production and value creation are moderate.

Internationalization of SMEs

Generally speaking, SMEs are domestic-oriented. The majority of their businesses are not nationwide, but rather focused on local and small niche markets. On the other hand, a small number of SMEs have succeeded in developing export markets and ground their competitiveness in their strong domestic bases. In addition, the export orientation of SMEs depends on industrial structure and cost competitiveness in their origin countries.

Contributions to exports by SMEs are diversified among the studied countries. In comparison with Latin America, the Asian SMEs in the manufacturing sector seem to be more export-oriented. Data on small and medium-sized exporters in three Latin American countries clarify the present situation of internationalization of SMEs. The first is a high concentration of export value in larger firms. The second is that most exports by smaller firms are shipped to the neighboring countries in addition to the United States and Europe. The third is a higher level of technology incorporated in exported products.

Obstacles to Export for SMEs

Latin American SMEs do not participate in international markets as much as Asian firms. These countries pointed out the main barriers to export as: i) weakness in their firms' quality management, information management, marketing strategy, customer management, and so on; ii) lack of human capital and access to credit; iii) small production capacity insufficient to achieve economies of scale; iv) lack of access to information relating to markets, regulations, technical norms, and so forth in foreign countries; v) high freight costs and complexity and slowness of trade-related procedures.

KEY FINDINGS FROM THE CASE STUDIES

Motives to introduce IT

ITs have long been considered effective tools to overcome obstacles for SMEs to facilitate international trade. The main objectives for private firms to introduce IT found in the case studies are, among others, to: i) improve information access; ii) improve internal administrative management; iii) improve product management and quality control; iv) enhance productivity by improving internal management as listed above; v) facilitate collaboration with other companies and seek economies of scale; and vi) acquire new business opportunities.

On the other hand, the main motives for public institutions to promote IT policies and introduce IT are to:

- improve SMEs' competitiveness and develop industrial clusters
- promote partnerships between large firms and SMEs, and among SMEs
- decrease costs related to trade procedures for both the private and the public sectors
- increase productivity and transparency of the public sector
- facilitate implementations of trade promotion policies and trade agreements.

Patterns of IT usage by SMEs

The SMEs and the public policy bodies introduced in the case studies make use of IT applications mainly for the following purposes: corporate management & strategy; establishment and coordination of partnership between large and small firms; partnership among small firms; sector-specific services and policies; websites for information provision and business matching; public websites for trade promotion and facilitation; and adoption of IT in the non-IT sectors.

Business-matching services are expected to be a low-cost and convenient measure for SMEs to expand their customer bases. Such online marketing channels can partially substitute for offline ones. Some cases of SMEs that make contacts with a client successfully demonstrate that firms combine traditional marketing channels and IT effectively to build up relations of trust with their clients. Face-to-face contacts are fundamental as the first step, and trade fairs provide good opportunities for SMEs to encounter potential clients and reinforce bonds with existing clients. A few minutes of communication can be enough to attract persons met at a trade fair showroom to the SMEs' websites. These persons will then visit the websites to gain more information on the companies and their products. E-mails and other telecommunications methods are complementarily used to start deals and coordinate supply chain management (SCM).

Barriers to diffusion of e-commerce, SCM and other e-transactions

Various impediments are responsible for the current limited use of e-transactions by SMEs. Among many potential users, there is a serious *lack of confidence in e-commerce*. For this reason, firms make complementary usage of video conference and other communication methods such as telephone, e-mail, and face-to-face communications. The second is related to a "*chicken and egg*" argument. A scarcity of IT administrative systems and a lack of experience make firms hesitate to utilize e-commerce and SCM and to fully digitize all of the administrative works related to business transactions. *High costs and fees to start e-commerce by utilizing e-marketplaces* are a severe hindrance, especially for SMEs that are

incapable of developing their own IT systems. *Insufficient human resources* and *digital infrastructure* are always concerns when we discuss development of SMEs.

PRIORITIZED POLICY AREAS

Improvement of access to information on international trade

There is an urgent need to develop IT infrastructure, especially in less developed countries. Among Internet users, information sharing, retrieval, and collection are the main uses of the Internet. Once firms obtain Internet access, they can benefit from these processes. "One-stop service" or establishment of a portal site is the best way to improve information access. What is important is to design the portal from the users' standpoint. A portal site specialized in a specific industry, or Vortal (Vertical Portal) is often useful.

Capacity Building

In order to utilize IT as a tool to promote international trade, capacity building is required in the fields of both IT and international trade. In order for an SME to introduce IT successfully, its management executives need to understand information on IT usage and its benefits, and share such information with their employees, in order to facilitate adoption and implementation of new management systems. On the other hand, trade-related tasks require not only comprehensive knowledge of overseas markets but also the enforcement capabilities to do business negotiation, acquire certificates of quality standards, and to process cumbersome procedures. Foreign language and business culture are also recognized as important areas of capacity building.

Formation of Virtual Clusters

Group cooperation among SMEs can be an effective scheme to foster export industry and promotion. It enables small firms to achieve scale economy and enhance bargaining power. These benefits make it feasible for SMEs to invest in IT and involve themselves in e-commerce.

In the Internet age, SMEs will be able to find business opportunities from forming Internet-based network-type business groups that are more flexible than traditional pyramidal supply chains composed of a large firm on top of the first- and lower-tier suppliers. With the network-type association based on the Internet, it is possible not only to network firms placed within an industrial accumulation but also to create a "virtual cluster" that links up with cooperative networks in different regions.

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