

II. SME Informatization Policies and Approaches of APEC Member Economies

1. Policies and Approaches for SME Informatization in APEC Member Economies
2. Comparison of Intermediaries for SME Informatization in APEC Member Economies
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In this chapter, SME informatization policies and approaches of APEC economies will be comprehensively analyzed (see Appendix B) based on the data collected by the researchers for this study.

This chapter classifies SME informatization policies and approaches APEC member economies implement. In particular, this chapter identifies and compares the characteristics and roles of SME supporting government agencies and intermediaries and specific support programs of APEC member economies. In conclusion, this chapter provides practical suggestions for promoting SME informatization for APEC economies, especially for SMEs in member economies in the low tier in the NII.

1. Policies and Approaches for SME Informatization in APEC Member Economies

1.1. Classification of the Policies and Approaches for SME Informatization

The table below (Table 2-1) summarizes the current government policies APEC member economies put into practice for the promotion of SME informatization. In order to extract general patterns, APEC member economies are categorized into high and low tiers in the National Informatization Index (NII), as mentioned in Chapter I.

As can be seen in the table, regardless of its position in the NII, every APEC member economy has government-led policies for nation-wide informatization and has government organizations for this purpose. This result indicates that every member has made efforts to enhance its national competitiveness through upgrading its level of informatization.

Every APEC economy has government organizations responsible for developing and implementing SME support policies. This trend demonstrates that nurturing SMEs is on the primary agenda of every member economy. However, only a few member economies have launched a set of integrated policies for SMEs combining both general business support and specific informatization promotion efforts.

The first column of Table 2-1 introduces the government departments in charge of the overall national informatization. The second column shows the government organizations created for developing generic policies to support SMEs. The third column lists the government organizations that indirectly support SME informatization. The last column (shaded), which is the main issue of this section, summarizes the policies and approaches to specifically promote SME informatization.

<Table 2-1> Policies and Approaches for SME Informatization in APEC Member Economies

High Tier in NII

Member economy	Government Department for National Informatization	Government Organization for Generic SME Support	Other Government Organizations partly related to SME informatization	Policies*1 & Approaches*2 for SME informatization
Australia	Department of Communications, Information Technology and the Arts (DCITA)	Office of Small Business (OSB)	National Office of Information Economy (NOIE) (promoting SME e-business), State governments	1/abe
Canada	Industry Canada (IC)	Industry Canada (IC)	Provincial governments	1/ab
Hong Kong	Commerce, Industry and Technology Bureau (CITB)	Small and Medium Enterprises Office (SMEO)	Industrial Support Division of Trade and Industry Department, The Information Technology Services Department (ITSD)	1/abd
Japan	Ministry of Economy, Trade and Industry (METI)	Small and Medium Enterprise Agency (SME Agency)	Prefectural Governments	2/abcde
Korea	Ministry of Information and Communication, Ministry of Commerce, Industry and Energy	Small and Medium Business Administration	Ministry of Information and Communication, Ministry of Commerce, Industry and Energy	2/abcde
New Zealand	Electronic Commerce Action Team (ECAT)	Ministry of Economic Development (MED)	n/a	1/ab
Singapore	Infocomm Development Authority of Singapore (IDA)	SPRING Singapore	Ministry of Trade and Industry	1/abcd
Chinese Taipei	Ministry of Economic Affairs (MOEA)	Small and Medium Enterprise Administration (SMEA)	Commerce Department of MOEA, Industrial Development Bureau of MOEA	2/abcd
U.S.	Department of Commerce	Small Business Administration (SBA)	Department of the Treasury, FTC, Federal Communications Commission (FCC), National Telecommunications and Information Administration (NTIA) of the Department of Commerce, Office of Management and Budget (OMB)	2/abcd

*1: 1= Generic ICT policy, 2= SME-focused ICT policy, 0=No noticeable SME informatization policy.

*2: a=Information, b=Infrastructure, c=Financial support, d= On-site ICT training & consulting, e=e-Business network

Low Tier in NII

Member economy	Government Department for National Informatization	Government Organization for Generic SME Support	Other Government Organizations partly related to SME informatization	Policies*1 & Approaches*2 for SME informatization
Brunei	BIT Council	Promotion and Entrepreneurial Development Division (PEDD)	Ministry of Industry and Primary Resources	0/a
Chile	Ministry of Transportation and Telecommunications	Chilean Economic Development Agency (CORFO)	n/a.	0/a
China	National Informatization Promotion Office of the State Council, Ministry of Information and Industry	Department of Small and Medium-Sized Enterprises	n/a	0/ab
Indonesia	Ministry of Industry and Trade	Ministry of Cooperatives and Small and Medium Enterprises	Ministry of Research and Technology	0/a
Malaysia	Ministry of Energy, Communication and Multimedia (MECM)	Ministry of Industry Development Authority (MIDA)/ Small and Medium Industries Development Corporation (SMIDEC)*3	n/a	0/ab
Mexico	Ministry of Trade and Industrial Development	National Council for the Mexico, Small and Medium Enterprises	Ministry of Economy, Ministry of Trade and Industrial Development	0/a
Papua New Guinea	Office of Information and Communication (OIC)	n/a	n/a	0/ n/a
Peru	Committee for the Expansion of Computers, National Council of Science and Technology	n/a	n/a	0/a
Philippines	Department of Trade and Industry	Bureau of Small and Medium Enterprise Development, Department of Trade and Industry	Department of Science and Technology (DOST)	0/a
Russia	Ministry of Economic Development and Trade	Ministry of Antimonopoly Policy and Support of Entrepreneurship	Ministry of Telecommunications and Informatization, Ministry of Education, Ministry of Science and Technology	0/a
Thailand	Ministry of Information and Communications Technology (MICT)	Office of Small and Medium Enterprises Promotion (OSMEP)	Department of Industrial Promotion (DIP)	0/ab
Vietnam	Department General of Post and Telecommunications	Vietnam Chamber of Commerce and Industry (VCCI) *3	n/a	0/a

*1: 1= Generic ICT policy, 2= SME-focused ICT policy, 0=No noticeable SME informatization policies.

*2: a=Information, b=Infrastructure, c=Financial support, d= On-site ICT training & consulting, e=e-Business network

*3: It is unclear that the VCCI of Vietnam and the SMIDEC of Malaysia are government agencies.

SME informatization policies are divided into three categories: (1) generic ICT policy; (2) SME-focused ICT policy; and (3) no noticeable policy.

Generic ICT policy directs the related government organizations to disseminate ICT information to businesses as a whole without any specific focus on SMEs. Moreover, generic ICT policy is designed to enhance the ICT infrastructure that is useful for the business community as a whole. Pursuing standardization and building the network base are examples of efforts to improve the overall ICT infrastructure.

SME-focused ICT policy enables a specialized government institution to play a comprehensive role for SME informatization and to involve in all SME informatization efforts (financing, technical consulting, etc.). Therefore, these institutions develop comprehensive policy frameworks for SME informatization and work on not only improving the ICT environment, but also individual SMEs' adoption of ICT.

If an APEC member economy does not have an ICT related policy in place, it is classified as an economy with "no noticeable policy" (code as zero).

Approaches or programs to improve SME informatization mentioned above are means to support SMEs under the SME informatization policies. There are 5 major types of support programs providing 1) information, 2) basic ICT infrastructure, 3) financial support, 4) on-site ICT training and consulting, and 5) e-business networks.

The first support program, providing information, includes running a portal site that provides information such as government support and new business opportunities that can facilitate the adoption and use of ICT by SMEs. Some programs offer more useful information such as the introduction of Best Practices in SME informatization, research results on the benefits of ICT and its importance.

The second type of program, providing ICT infrastructure, is necessary for promoting SME informatization. A typical example is establishing trust infrastructure (security and authentication systems) upon which SMEs can securely operate and participate in e-commerce. Training and educating IT staff for SMEs are also important activities included in these programs. The purpose of these programs is to create a favorable ICT environment

The third type of program is financial support. This program helps SMEs to reduce their financial burden in implementing informatization by offering government support. Cash grants, loans, leases and tax reductions are examples.

The fourth type of program, on-site training and consulting, supports SMEs to overcome the challenges they face while pursuing informatization by providing specialized ICT consulting.

The fifth type of program is to help SMEs establish an e-business network with other companies in the same industry. For this purpose, the government offers financial support and training programs for ICT experts.

1.2. Policies and Approaches of Member Economies in the High Tier in NII

Member economies in the high tier in the NII can be further divided into the economies with the SME-focused ICT policy and those only with the generic ICT policy in place. The former group includes the United States, Japan, Chinese Taipei and Korea, and the latter includes Australia, Canada, Hong Kong, New Zealand and Singapore.

In the first group, SME support institutions have a special framework for developing policies for

SME informatization, whereby they develop various SME informatization policies and programs. In the United States, the Small Business Administration (SBA) provides technical assistance, financing, training, and market information with a clear objective of promoting SME e-commerce. The Small and Medium Business Administration of Korea, the Small and Medium Enterprise Administration (SMEA) of Chinese Taipei, and the Small and Medium Enterprise Agency (SME Agency) of Japan are organizations responsible for SME informatization.

All five types of programs mentioned previously are found to be in place in these four member economies. These member economies have established well-designed systems providing a wide range of information such as successful SME case stories and ICT benefits. In addition, they work to establish trust infrastructure to help SMEs securely operate and participate in e-commerce. The governments of Chinese Taipei, Japan, Korea and the United States all provide financial support for SME informatization though in different forms. They also provide SMEs with on-site training and consulting programs to overcome various problems faced during ICT implementation. As for building e-business networks, government financing and technical support for the Networking of Micro Enterprise in Korea is a good example.

In the second group, member economies do not have programs or policies specific to SME informatization, but instead focus on creating a favorable ICT environment and developing generic SME-supporting policies. This group of member economies has two approaches in common, that is, providing information and building SME capacity. As a member of this group, Hong Kong has successfully adopted on-site training programs, and Australia has unique financial support programs for SMEs as part of an e-business network project the ITOL Program run by Australia's NOIE. The Australian government supports SME e-business networks by funding consortium based applicants through matching fund arrangements.

1.3. Policies and Approaches of Member Economies in the Low Tier in NII

Most of the member economies categorized as the low tier economies in the NII do not have any specific policy framework for SME informatization. Consequently, economies in the low tier in the NII usually do not have any noticeable supporting programs for SME informatization. Some countries (China, Malaysia, Thailand and Indonesia) in the low tier, however, have started to put support policies for SME informatization in place as a means to strengthen their national competitiveness .

The government of China is building an SME network to provide useful information and help SMEs share and exchange information with each other. Malaysia has established the SMIDEC to take full charge of promoting SMEs and support SME informatization through funding and training. Thailand has the OSMEP (Office of Small and Medium Enterprises Promotion) for the same purpose as Malaysia's. Recently, Thailand reviewed SMEs' request for assistance for their informatization, and as a result, banks were told to extend their financial support to SMEs. Indonesia has created such institutions as Business Development Services (BDS) and the Center for the Development of SME (CD-SME) to support micro-business clusters in selected areas.

2. Comparison of Intermediaries for SME informatization in APEC Member Economies

2.1. Intermediaries for SME Informatization in APEC Member Economies

As mentioned in the previous sections, most APEC economies have different policies and approaches to support SME informatization. These differences could influence the types and roles of intermediaries that facilitate SME ICT. Many governments have depended on these intermediaries to promote SME informatization because of the governments' lack of expertise and the overwhelming administrative burden they face. Such intermediaries are summarized in Table 2-2 below. The table explicitly compares the characteristics of the intermediaries in the member economies in the high tier and those in the low tier in the NII.

<Table 2-2> Intermediaries for SME Informatization in APEC Member Economies

High Tier in NII

Member economy	Public	Private
Australia	n/a	Consortium for ITOL
Canada	Canadian Network for the Advancement of Research, Industry and Education, Communications Research Centre Canada, Canada Business Service Centres	Canada National Research Council' Institute for Information Technology, Canadian Federation of Independent Business, Canadian Chamber of Commerce, Canadian Manufacturers and Exporters, Canadian e-Business Initiative
Hong Kong	Hong Kong Trade and Development Council, Hong Kong Productivity Council, Vocational Training Council	n/a
Japan	Japan Small and Medium Enterprise Corporation, Prefectural/regional SME Support Centers, SME/Venture Business Support Centers, Governmental financial institutions (e.g., Small Business Finance Corporation, National Life Finance Corporation and Shoko Chukin Bank), Public industrial technology research institutes, National Small Business Information Promotion Center (NIC)	Commerce and Industry Associations, Chamber of Commerce and Industry, National Federation of Small Business Associations, IT Coordinators Association, Designated lease companies
Korea	National Computerization Agency (NCA), Korea Institute for Electronic Commerce, Electronic Commerce Resource Center, Korea Informatization Management Institute for Small and Medium Enterprises (KIMI), Small Business Corporation (SBC)	Korea CALS/EC Association, Korea E-Trade/Technical Association, Korea Federation of Small and Medium Business, Korea Chamber of Commerce and Industry, Korea Association of Information and Telecommunication
New Zealand	Economic and Trade Development Agency	n/a
Singapore	Infocomm Development Authority, SPRING Singapore	Chinese Chambers of Commerce & Industries, Indian Chambers of Commerce & Industries, Malay Chambers of Commerce & Industries, Association of Small and Medium Enterprises, Singapore Manufacturers' Federation, Singapore Infocomm Technology Federation, Association of IT Consultants (Singapore), relevant industry and trade associations/ bodies
Chinese Taipei	Industrial Technology Research Institute, Institute for Information Industry	Information Service Industry Association, InfoBank Technology, National Association of Small & Medium Enterprises, Mitac Inc., Taipei Computer Association
U.S.	Small Business Development Centers (SBDCs), WBCs: Women's Business Centers, E-Business Institute as a virtual campus housing free training courses, workshops, and knowledge resources, PRO-Net for government procurement, OWBO: The SBA's Office of Women's Business Ownership, Business Advisor	Counselors to America's Small Business (SCORE)

Low Tier in NII

Member economy	Public	Private
Brunei	BSME NET	n/a
Chile	n/a	Centro de Productividad Industrial CEPRI S.A.
China	China SME Infonet, Chinese Academy of Science and network	SME Network, SME associations, trade groups and agencies
Indonesia	Business Development Services (BDS), Center for the Development of SME (CD-SME)	n/a
Malaysia	Small and Medium Industries Development Corporation (SMIDEC), 19 training providers with the financial supports for the training cost from SMIDEC (e.g., German-Malaysian Institute)	(PIKOM Association of the Computer & Multimedia Industry Malaysia)
Mexico	Business Information Center, Business Link Centers, The Technological Services Information System (SISTEC), projects of the Small and Medium Enterprises System, Technology Transfer Unit (UTT), COMPITE (National Committee for Productivity and Technological Innovation) Program	n/a
Papua New Guinea	n/a	n/a
Peru	Center for the Exchange of Technology and Information of the National Society of Industry, PROMpyme	n/a
Philippines	n/a	Philippine Chamber of Commerce and Industry (PCCI)
Russia	Russian SME Resource Center (RCSME), SIORA for services to entrepreneurs	Chamber of Commerce and Industry of the Russian Federation
Thailand	SME Development Center	Association of Thai Computer Industry (ACTI)
Vietnam	Vietnam Chamber of Commerce and Industry (VCCI) including SME Promotion Center as its affiliate	Vietnam Software Association

2.2. Public Intermediaries vs. Private Intermediaries

Intermediaries for SME informatization can be categorized into public and private intermediaries. The distinction between public and private intermediaries is the level of government involvement in the establishment and operation of these intermediaries. The government pays for the entire expenditures or a substantial amount of money is spent on the establishment and operation of public intermediaries, whereas the government does not get involved in the establishment and operation of private intermediaries.

Examples of public intermediaries include 100-percent government-funded institutions (Japan Small and Medium Enterprise Corporation, Korea National Computerization Agency), government-private partnerships with considerable contributions from government (Small Business Development Centers in the United States, Canada Business Service Centres, National Small Business Information Promotion Center of Japan, Korea Information Management Institute for Small and Medium Enterprise) and government-funded research and education institutions (Communications Research Centre Canada, Industrial Technology Research Institute of Chinese Taipei).

Private intermediaries are industry and trade associations (chambers of commerce, federations of small businesses or specific industry associations in member economies), consortiums formed by SMEs (Consortiums for ITOL of Australia), private IT service providers, and consulting firms.

2.3. Intermediaries of Member Economies in the High Tier vs. Low Tier in NII

The distribution of public and private intermediaries is different from economy to economy depending on the national informatization levels. Economies in the high tier in the NII have the balanced distribution of public and private intermediaries and have high dependency on them in supporting SME informatization.

On the other hand, only a handful of economies in the low tier in the NII have public intermediaries and, in very rare cases, private intermediaries. This result suggests that the economies in the low tier in the NII are in the beginning stages in implementing SME informatization and rely heavily on the public sector to lead SME informatization.

The intermediaries in the low tier in the NII play a limited role and thus only provide SMEs with business information through the Internet. Only a few member economies in the low tier have the intermediaries that offer education and training programs for upgrading IT usage (the Technology Transfer Unit (UTT) of Mexico).

We identified a few interesting characteristics of the intermediaries in the high tier in the NII. First, even the economies in the high tier in the NII have a higher dependency on the public sector than on the private sector in promoting SME informatization. This relatively high dependency on the public sector is due to the lack of such resources as monetary funds, ICT information, and human resources for SMEs. In addition, private capital hardly goes to SMEs to support informatization. Thus, governments (or government-supporting intermediaries) play the role in reducing the risks and uncertainties SMEs are likely to face in doing business, especially when SMEs confront an unfavorable business environment.

Second, a few economies in the high tier in the NII have established public intermediaries specializing in SME informatization, whereas most other economies let the existing intermediaries take charge of the SME sector, including SME informatization. Japan and Korea have many public and private intermediaries and each economy also set up a public intermediary specializing in SME

informatization (Korea Informatization Management Institute for Small and Medium Enterprises (KIMI) and Japan's National Small Business Information Promotion Center (NIC)).

2.4. Supporting Programs of Intermediaries in APEC

The intermediaries of APEC economies offer many programs to promote SME informatization according to the policies and approaches set out by respective governments:

- Providing information to SMEs to help them to succeed in market adaptation (most APEC economies provide this service including even economies in the low tier in the NII such as SME Infonet of China);
- Providing IT-related information that guides internal informatization or e-commerce for SMEs (e.g., Canadian e-Business Initiative);
- Conducting IT education and training programs for SME employees (e.g., Vocational Training Council of Hong Kong and E-Business Institute of the U.S.);
- Offering financial support for SMEs to purchase IT equipment (e.g., the Small Business Corporation of Korea handles funds from the Korean government for SME informatization); and
- Offering on-site training and consulting services to help SMEs to implement ICT (e.g., The IT Coordinators Association of Japan).

The kinds of programs public intermediaries adopt are affected by government policy. In light of this, intermediaries play the role of establishing channels to reflect the diverse needs of SMEs in the support programs they develop. An example of such a public intermediary is the E-business Institute of the United States, which was designed to assist entrepreneurs and employees in SMEs in an Internet-based learning environment by offering online courses, workshops, publications, information resources, learning tools, direct access to electronic counseling, and other forms of technical assistance.

Private intermediaries are more likely to reflect the demands and needs of SMEs in the programs they offer. In particular, consortium-based private intermediaries launched by a group of SMEs are most proactive in trying to satisfy the needs of SMEs as much as possible. A typical example is the consortium-based organizations supported by the ITOL (Information Technology Online) funding program of Australia. This private intermediary in the form of a consortium is a collaborative network of the supply chain that facilitates e-business for various SMEs.

There are programs in which the government only provides the funds and the actual operation of the support program is delegated to private intermediaries (the Information Service Industry Association (CISA) and Taipei Computer Association (TCA) of Chinese Taipei). These intermediaries provide training and education programs as well as consulting services on a contract basis with the government to enhance the e-business capabilities of SMEs.

2.5. Gender Issues

Among the various intermediaries involved in SME informatization, two intermediaries in the United States have a particular interest in promoting informatization of female-owned SMEs. Women's Business Centers (WBCs) provide counseling and training for women nationwide, host a Web site in eight languages and offer mentor programs for women running small businesses. OWBO, the SBA's Office of Women's Business Ownership, promotes the growth of female-owned

businesses through programs that offer business training and technical assistance, and it provides access to credit and capital, federal contracts and international trade opportunities. OWBO helps women start and build businesses by using the FastTrac training curriculum and by inviting speakers to lecture on a variety of topics. It runs quarterly networking programs as well as the monthly and quarterly mentoring group meetings, which are in the beginning stages of development.

3. Summary of Comparison

This section summarizes the findings introduced in section 1 and 2 of this chapter. The following table (Table 2-3) summarizes SME informatization policies and approaches as well as the roles of intermediaries in APEC member economies. There are three different groups of member economies depending on the directions of their ICT policies and the NII categorization.

<Table 2-3> SME Informatization Policies and Approaches in APEC Member Economies

	SME-focused ICT Policy	Generic ICT Policy
High in NII	<p>Group I</p> <ul style="list-style-type: none"> ▶ Economies: Japan, Korea, Chinese Taipei and the United States ▶ Common Approaches: provision of Information, Resources, Financial Supports and On-Site Training and Consulting ▶ Intermediaries: public Intermediaries are more dominant than private intermediaries 	<p>Group II</p> <ul style="list-style-type: none"> ▶ Economies: Australia, Canada, Hong Kong, New Zealand, Singapore ▶ Common Approaches: provision of Information and Resources ▶ Intermediaries: No specific tendency
Low in NII		<p>Group III</p> <ul style="list-style-type: none"> ▶ Economies: Remaining 11 Member Economies ▶ Common Approaches: provision of Information ▶ Intermediaries: Private or public intermediaries are in the introduction stage

3.1. Group I

Group I consists of the economies in the high tier in the NII that implement SME-focused ICT policies. These APEC member economies are Japan, Korea, Chinese Taipei and the United States. These economies take comprehensive approaches to developing SME informatization policies that encompass ICT information and resources, financial support, on-site training and consulting. The governments of these member economies are aware of the need for SME informatization and have maintained a proactive stance towards supporting SME informatization with financial and technical support.

Such an active government role is not new to Japan, Korea, and Chinese Taipei because these economies have always stressed the importance of the government’s involvement in leading the economic development. Considering the economic policy in the U.S. has traditionally assisted market-led economic growth, it may be noticeable that the U.S. government is taking various policy approaches to offering government support for SMEs to adopt ICT. The U.S. government’s strong support for SMEs’ adoption of ICT is, after all, the result of its traditionally active role in assisting

SMEs and promoting worldwide e-commerce.

In order to ensure the successful implementation of such policies, these member economies have relied on various private and public intermediaries but it is the public intermediaries that play a more important role. Japan and Korea, in particular, set up some public intermediaries specializing in SME informatization that have strong influence over the SME issues, backed by government support.

3.2. Group II

Group II consists of member economies in the high level in the NII that have generic ICT policies in place. These economies mainly focus on creating a favorable ICT environment. Australia, Canada, Hong Kong, New Zealand and Singapore belong to this group. The two common approaches these member economies have taken are providing useful information and strengthening the basic capacity of SMEs. Australia, Canada, and New Zealand view that SME informatization is a matter of choice for individual firms themselves to decide and thus maintain that the government's role should be limited to improving the surrounding environment in which individual firms can adopt and use ICT as needed. No common characteristics these intermediaries share were found but the study shows that the public intermediaries in this group of economies play a smaller role in generic than in the member economies that have SME-focused ICT policies. This results from the fact that the governments of Group II economies are not implementing ICT policies that specifically focus on promoting SME informatization.

3.3. Group III

Group III is composed of the members in the low tier in the NII that lack SME-focused ICT policy. The remaining 11 APEC member economies belong to this group. However, some member economies in this group have just introduced SME informatization policies after recently recognizing its importance. Although currently limited to providing information to SMEs, they plan to launch diverse supporting policies for SME informatization as their national information plans proceed. With few supporting policies from the government, the roles of intermediaries are very limited and it is up to the individual member economies whether they can advance to group I or group II in terms of SME informatization. Their choice should be based on a number of situations, including the economic development process of the government in the past, the levels of ICT infrastructure and the industrial structure of their economy.