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The member economies in the APEC region are well aware that small and medium enterprises (SMEs) have the potential to enhance their business competitiveness. Many member economies have taken different approaches and implemented different policies for their SMEs. However, in the era of the digital economy, a member economy can no longer survive on its own. As the world becomes globalized, competition will occur anywhere, anytime and by anyone using Information and Communication Technology (ICT). SMEs are most vulnerable to this changing competitive environment since they do not have enough finances, technical skills, and human resources to implement ICT. One of the characteristics of the digital economy is that the digital gap widens much faster in this economy than before. In particular, the digital gap between large and small companies needs to gain special attention because unless the gap closes, balanced economic development will not be achieved and the social security net will be undermined.

APEC recognized the importance of ICT for SMEs and started the promotion of the use of ICT. At the 2000 APEC SME Ministerial meeting, ministers discussed how to enable SMEs to access ICT easily and to utilize e-Commerce, and stressed the needs to collaborate with APEC Electronic Commerce Steering Group (ECSG) and Telecommunication Working Group (TELWG). In 2002, ministers emphasized the development of policies for the informatization of micro-enterprises (MES).

While discussions made in APEC focused on technical issues such as coordination of standards, regulations, and security measures for e-Commerce, there has been little discussion on the support policies, support organizations, education and training, and awareness levels regarding SME informatization in member economies. Taking this into account, the Korea Small and Medium Business Administration (SMBA) and Korea Information Management Institute for SMEs (KIMI) made a proposal to conduct a project to develop an e-APEC strategy for the better promotion of SME informatization. The project has three phases and this document contains the outcome of the first phase whose title is "APEC Informatization Survey for SMEs."

The objective of the APEC Informatization Survey for SMEs was to identify the levels of SME informatization by analyzing and evaluating ICT strategies, infrastructure readiness, systems building and utilization, ICT education and training, and etc. The survey was based on a research framework that consists of three components: the national ICT infrastructure, business environment and supporting organizations. For the survey, overall information related to SME informatization from 21 member economies was gathered by way of web-site searches and the e-mailing of the questionnaire. And for more specific information, the research team interviewed government officials in 12 economies regarding their government's support policies, support organizations, and others. The team also conducted 18 case studies in 10 economies on the informatization levels of these economies by evaluating infrastructure readiness, systems building and utilization, and etc. As a result, the team compiled and categorized all the information gathered into individual member economies' profiles, analyzed the characteristics of ICT policies of each member surveyed, compared the informatization levels among the economies, derived best practices and made suggestions for the enhancement of SME informatization in the APEC region. The interviewees were found to believe that the benefits of SME informatization were great and welcomed this survey research for the
promotion of SME informatization at the APEC level.

Finally, I would like to express my deepest appreciation to all the people involved in this survey research. First of all, without the proactive cooperation from the focal points in APEC SMEWG, this survey would not have been possible. In particular, I want to give my warm-hearted thanks to the following seven economies: Canada, Hong Kong, Japan, Korea, Philippines, Russia and Chinese Taipei. They were very cooperative in our compilation of the member economies' profiles by answering our questionnaire. Special thanks also go to the Korean research team. Many thanks to KIEP (Korea Institute for International Economy Policy), first of all, for their role as the leading researcher as commissioned by KIMI. From KIEP, there were Drs: Seong-Bong Lee, Chang-In Yoon, Sangkyom Kim, Jun-Gu Kang, and others. From CenterWorld, a participant from the private sector, Dr. Jin-Young Sirh. From Universities, there were Professors: Sundong Kwon, Yong-Yeop Sohn and Hee-Dong Yang. From KIMI, there were Drs: Joo-Yong Kim, Juhwan Oh and Hunwha Yang. And, last but not least, a special appreciation to Ms Bong-Yeon Hwang, deputy director of SMBA for enabling this project.

Nikki Baek, Ph.D.
President
KIMI
Korea
The informatization of SMEs (e-business and ICT adoption by SMEs) can not only strengthen their corporate competitiveness, but also contribute to the stable growth of each APEC economy. In this regard, Korea started the "APEC SME Informatization Project (Enabling e-MES Environment through survey and e-community based capacity building)" in 2003 to develop an e-APEC strategy for SMEs, which can help expand the opportunities for APEC SMEs to enhance the ICT use and adoption. As the first phase of this project, this study aims at contributing to the promotion of informatization of SMEs in APEC by sharing Best Practices based on member economies' experiences such as policies, supporting structures, and needs of and barriers to SME informatization.

The study has two core research agendas. The first one, "SME Informatization Policies and Approaches in APEC Member Economies," looks into the policies each government uses to promote and improve SME informatization and the intermediaries that support SME informatization. The other one, "SME Informatization Survey," which includes the case studies (18 cases) in 10 member economies and a questionnaire survey of Korea's SMEs, reviews the current status, characteristics and major issues of SME informatization from the SMEs' point of view. For both research agendas, the research team categorized the APEC member economies into two tiers in the National Informatization Index (NII) and compared these two main groups.

SME Informatization Policies and Approaches in APEC Member Economies

Regarding the policies and approaches for promoting SME informatization in APEC member economies, we found that only a few member economies have launched a set of integrated policies for SME informatization, pursuing generic SME support and SME informatization at the same time. In contrast, the economies in the low tier in the NII have not taken any systematic approach towards SME informatization.

In the case of the economies in the high tier in the NII, some member economies do have specific policy frameworks for SME informatization (SME-focused ICT policy) but others do not (generic ICT policy). The former member economies have taken many approaches to promote SME informatization (providing useful information, resources, financial support, and training and consulting), while the latter member economies have only taken some basic approaches to SME informatization (providing information and expanding the ICT infrastructure).

This study reviews the intermediaries playing an important role in promoting SME informatization. This study also confirms the importance of intermediaries and that governments lack the ability to identify the needs of SMEs and provide tailored solutions to them. The intermediaries can be categorized into public and private intermediaries, and have different roles and approaches in their responsibilities (mainly endowed by the government). Diverse cases on the efforts of intermediaries to meet SME needs for informatization are presented.

SME Informatization Survey

The survey and case studies analyze the levels of SME informatization in terms of ICT adoption, ICT awareness and readiness, ICT benefits and factors affecting ICT adoption.
Regarding ICT adoption in APEC SMEs, there are substantial differences between low tier and high tier SMEs in their levels of hardware, software and Internet usages. Moreover, limited access to the Internet and the high cost of computer equipment are the most serious problems low tier SMEs face.

In terms of ICT awareness, the case studies show a significant difference in the levels of ICT infrastructure and financial resources between the low tier and high tier SMEs. The low tier SMEs do not have adequate levels of equipment such as hardware, software and networks for they view these products to be too expensive to buy. Although many CEOs and employees of the SMEs in the case studies showed a high level of awareness of the importance of ICT development, many SMEs lack ICT organization and systems management, ICT education and training, and ICT maintenance capability.

As for the benefits ICT offers, many SMEs in this study have increased their business efficiency by using ICT. However, there does exist disparity in efficiency between the low and high tier SMEs in the NII. Only high tier SMEs have increased their business performance for both internal and external operations using ERP, CRM and SCM.

In the case studies, we identified the factors affecting ICT adoption by SMEs such as the national ICT infrastructure, the business environment and supporting organizations. The low tier SMEs have more problems with accessing the Internet due to the slow speed and high cost. Moreover, they have less pressure to adopt ICT from business partners such as buyers, vendors or competitors. In some cases, however, intermediaries do function as a bridge between SMEs and the government for SME informatization.

The survey on the Korean SMEs shows that they do not have sufficient ICT experts/staff, and that they only manage the internal processes with the basic software rather than conduct B2B transactions over the networks. The three major reasons for this outcome are the lack of financial resources, human resources and ICT capabilities.

**Suggestions**

All interviewees SME businesspeople, government officials and SME informatization intermediaries in member economies believe that the potential benefits of SME informatization are great and welcome the involvement of APEC economies in lowering the barriers to SME informatization efforts not only at the individual governmental level, but also at the APEC level. Based on the research results, we offer suggestions to facilitate SME informatization for individual APEC SMEs, intermediaries, member governments, APEC as a whole, and the future research.

1. **Suggestions for APEC SMEs**
   - **Recognize the need for informatization and raise the ICT awareness and knowledge of CEOs of SMEs.** APEC SMEs should thoroughly examine the potential benefits of utilizing ICT, developing new products and services, and creating new markets through new approaches to customers. Raising the ICT awareness and knowledge of SME CEOs is critical, considering the absolute influence of CEO leadership in small companies.
   - **Use ICT for integrating SMEs and business partners into the value chain.** Integrating processes and data through community-based networks with partners in the value chain is desirable because by doing so they can share costs as well as the benefits of the integrated system.
(2) Suggestions for Intermediaries

- Intermediaries in charge of promoting SME informatization should assess the needs of SMEs and develop programs from the SME point of view. Both public and private intermediaries should be reviewing whether they are meeting the SME needs through their programs. In order to keep up with the changing ICT environment and SMEs' needs for informatization, intermediaries should have more knowledge and flexibility in their approaches to promote SME informatization.

(3) Suggestions for Governments

- Governments should give priority to enhancing the national ICT infrastructure. Governments should try to lower Internet access fees and increase Internet access speed. Without low-cost efficient ICT infrastructure in place, SMEs will not be able to see the benefits of informatization. Governments should also support the growth of the ICT industry so that SMEs can use locally produced software and access contents at reasonable prices.

- Develop diverse, business-driven supporting programs and team up with support intermediaries. The government should develop diverse programs responding to the changing informatization needs of SMEs. To address the imbalances between government policy and SMEs' demands, governments should keep in close contact with SMEs. As governments will depend on many intermediaries, they should ensure that effective cooperation takes place between diverse intermediaries to create the desired synergy effects.

- Consider the gender issue in the development and implementation of supporting programs for SME informatization. While limited, this report presents the case studies on how to improve the role of women in SME informatization. These cases demonstrate that governments need to pay more attention to the gender issue in developing SME informatization policies.

(4) Suggestions at the APEC Level

- Improve the ICT infrastructure across the APEC region. Collective measures at the APEC level should be taken to ease the burden of purchasing computers for SMEs in the low tier economies in the NII. For example, tariff rates on PCs in APEC member economies could be lowered collectively, or outdated computers in high tier members could be resold to low tier members at low costs.

- Prepare collective measures at the APEC level to enhance the effectiveness of the SME supporting intermediaries. The "APEC SME Informatization Forum" in 2004, to be held in Korea following this study, can provide the momentum for this. In addition, the "APEC Training Program for SME Informatization" in 2004 could become the cornerstone for enhancing the ability of key staffs in these intermediaries to respond quickly to SME demand for informatization.
(5) Suggestions for Future Research

- **The relationship between the ICT infrastructure and SME informatization.** The correlation between the digital divide among the companies and the indexes of digital divide among member economies should be analyzed in detail. In addition, the digital divide between SMEs and large enterprises in member economies also needs to be studied.

- **The relationship between SME informatization and the business environment.** Discussion at the APEC level is needed to assert the benefits of ICT. The discussion should not only cover the promotion of SME informatization, but also the required business conditions for SMEs to gain the benefits of informatization.

- **In-depth study on SME informatization.** An in-depth study on the current status of SME informatization by industry should be undertaken, taking into account the different characteristics of each industry. Future studies should consider the regional differences when analyzing the informatization levels of member economies.
I. Introduction

1. Background
2. Objectives
3. Research Framework
4. Research Methods
1. Background

In APEC member economies, small and medium enterprises (SMEs), especially micro enterprises, play a vital role in enhancing the stability and competitiveness of an economy. According to a report published by the APEC SME Working Group, SMEs make up over 98 percent of all enterprises, accounting for around 60 percent of the private sector employment in the APEC economy. Moreover, they generate about 30 percent of direct exports and 50 percent of sales and added value. APEC and its member economies are well aware of the potential of SMEs and thus make great efforts to support SMEs and increase their competitiveness.

In general, SMEs face a number of different kinds of barriers, including the lack of information, limited financial and technical resources, and absence of the well-trained work force. Information and Communication Technology (ICT) can be an effective tool for SMEs to overcome such limits. SMEs have also gradually recognized the positive impact of ICT on their business. Both at the firm and inter-firm levels, ICTs can offer benefits for a wide range of SME business processes. A number of business solutions can improve management within a firm, leading to more efficient business processes and performance. At the inter-firm level, use of the Internet and e-commerce can help to reduce transaction costs and increase transaction speed and reliability while deriving maximum value from the SME value chains. In this regard, the informatization of SMEs (for example, e-business and ICT use) will not only strengthen corporate competitiveness, but also contribute to the stable growth of each APEC economy.

At the APEC level, some discussions have been made regarding how to promote APEC SMEs to use ICT. At the APEC SME Seventh Ministerial Meeting in Bandar Seri Begawan on June 22-23, 2000, ministers discussed how to enable APEC SMEs to access ICT easily and to utilize electronic commerce. This issue was one of the four main agendas of the meeting where there was a broad consensus that governments could and should assist SMEs in overcoming the problem of high initial costs of investment in ICT by creating a favorable environment for e-commerce. Moreover, ministers stressed the needs for collaboration with relevant APEC fora including the APEC Electronic Commerce Steering Group and the Telecommunication Working Group. At the 2001 SME Ministerial Meeting in Shanghai, ministers shared their ideas on the governments’ efforts to facilitate the development of science and technology, particularly information and communication technologies, to enhance SME growth and development. At the 2002 SME Ministerial Meeting in Acapulco, the ministers emphasized that member economies needed to continuously develop the policies that are closely relevant to the informatization of micro-enterprises, financing and human resources development in order to achieve the balanced economic development and enhance the social security net.

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1) This study, SMEs are taken as companies with fewer than 50 employees, thus this term can be used as a substitute for used by MES. However, each APEC economy has different definitions on SME and micro enterprises. This study considers every category of SMEs found in APEC economy regardless of the different definitions used by each economy.
4) SME informatization can be defined as an SME’s adoption and use of ICT for business processes and practices. This definition encompasses computerization, e-commerce, and e-business. A detailed explanation of this will follow in the subsequent sections.
5) Telecommunications Working Group (TEL) initiated a survey and study on electronic commerce adoption, uptake and use by SMEs in all 21 APEC member economies. The final report “SME Electronic Commerce Study”, was released in September 24, 1999. The TEL Working Group also initiated another study on technical issues of electronic commerce, “APEC e-Business: What Do Users Need?” which was carried out by CSIRO (2001).
Despite these combined efforts and the ICT projects\(^6\) underway in some APEC economies, there has not been much progress in improving SMEs’ utilization of ICT. The discussions on promoting ICT use by APEC SMEs have been concerned with technical issues such as the coordination of standards and regulatory and security measures for e-commerce. There has been relatively little comparative discussion on the current status and influential entities for SME informatization in each member economy. Against this backdrop, Korea proposed the “APEC SME Informatization Project (Enabling e-MES Environment - Through Survey and E-Community-Based Capacity Building)” in 2003 to help develop an e-APEC strategy for SMEs, which can contribute to the diffusion of ICT among SMEs in the APEC region. This study is the first phase of our APEC SME Informatization Project, which will proceed through three sub-projects.\(^7\)

2. Objectives

This study aims at contributing to promoting the informatization of APEC SMEs by sharing good practices and policies among member economies. Supporting mechanisms and implementation issues regarding SME informatization will also be discussed. SME informatization issues may vary among APEC member economies due to the different levels of economic development and various business environments. On top of looking into such issues, this study will suggest various alternatives for APEC member economies to enhance their SME informatization and provide the direction for related entities including SMEs, governments and supporting organizations.

The more specific issues of this study can be listed as follows:

- To analyze issues and entities responsible for the success of SME informatization
- To identify good supporting policies on SME informatization in APEC member economies by examining not only the government agencies in charge of SME informatization, but also other important public and private institutions involved
- To assess the levels of SME informatization and identify the impediments to informatization by conducting empirical case studies and surveys.

The study results will provide the ground for the policy forum for SME informatization and the subsequent training program of the APEC SME Informatization Project.

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7) The APEC SME Informatization Project has three sub-projects: (1) conducting a survey on SME informatization (July-December 2003); (2) holding a policy forum (a two-day forum planned in 2004); and (3) organizing a training program for relevant government officials, dedicated managers and leaders from business associations and NGOs (two-week program planned in 2004).

8) For designing this framework, the following articles were used: Lyytinen, K. and J. King (2002); Benbasat, C.I. and A.S. Dexter (1998); Cragg P.B. and M. King (1993); Grover, V. and M.D. Goslar (1993); Iacovou, C.L., Benbasat, I. and A.S. Dexter (1995); Kaplan, R.S. and D.P. Norton (1996); Loh, L. and N. Venkatraman (1992); Lyytinen, K. and J. King (2002).
3. Research Framework

A research framework was developed regarding external entities that are important for SME informatization (Figure 1-1). Three external entities are recognized in the model: infrastructure, the business environment, and ICT supporting organizations. Each entity is explained in detail below.

![Figure 1-1] Research Framework

**ICT Infrastructure**

While it is quite difficult to provide a single definition of the national ICT infrastructure, it is widely accepted that the national ICT infrastructure includes the computer and network infrastructure, trust infrastructure and ICT industry/market. In terms of SME informatization, the level of **the computer and network infrastructure** indicates whether SMEs can use computers and access the Internet at affordable prices. Affordable PC prices and broadband connectivity are key components for ICT adoption and use by SMEs. Many SMEs in member economies cannot implement advanced computer systems or services due to inferior Internet infrastructure and poor logistics. **Trust infrastructure**, such as security, privacy, and consumer protection, is another important component for SME informatization for it provides a stable, secure and transparent environment for SMEs to use ICT.

The ICT industry/market affects the availability and development of software, hardware, and networks in the ICT market. The liquidity, quality, and size of the ICT market are strongly related to the levels of SME informatization. Governments support the development of the ICT market in many different ways (such as offering subsidies and conducting projects) because well-developed ICT industries/markets, along with the development of a national ICT infrastructure, are prerequisites for the effective use and adoption of ICT by firms, especially SMEs.
**Business Environment**

The business environment that influences SME informatization can be understood through the SME value chain. The SME value chain is composed of vendors, buyers, large firms and mother companies that influence or force SMEs to implement informatization for business-oriented purposes. For example, many SMEs inevitably use certain types of computer systems in order to maintain business relationships with strong business partners. In this regard, reviewing the relationships between vendors (suppliers), buyers (customers), large-sized companies and mother companies is needed for the accurate analysis of the SME informatization issues. Industry characteristics such as market growth, competitiveness and entry barriers need to be studied as well.

**Supporting Organizations**

There are various supporting organizations that can directly and indirectly facilitate the use and adoption of ICT by SMEs in the APEC member economies. They are either governmental or non-governmental organizations. Governmental supporting organizations include the national steering committees, related ministries, and related administration offices within the government. Non-governmental supporting organizations (also called intermediaries in our study) act as a bridge between the government and SMEs in promoting SME informatization. They can be further categorized into public intermediaries (various government-funded organizations, partnerships between government and non-governmental organizations, and government-funded research and education institutions) and private intermediaries (industry and trade associations, private sector initiatives, private research and education institutions, and some private companies). In many cases, intermediaries are mandated by the government to facilitate SME informatization. They take many approaches and various measures toward promoting SME informatization.

**Informatization of SMEs**

The levels of SME informatization can be identified by assessing the types of hardware, software and networks implemented and used. The benefits and the user’s attitude towards the use of ICT are also factors affecting ICT decisions. For this study, we examined not only the current status of ICT, but also the various factors that facilitate or inhibit informatization which should be reflected in future ICT policies of governments in APEC.

In order to understand the influence of entities in the research framework on SME informatization, we raised the following research questions:

- What roles do the government organizations play in promoting SME informatization? What policies and approaches have been adopted by APEC member economies?
- What kinds of intermediaries are supporting SME informatization?
- What is the impact of the business environment (such as vendors, buyers and large companies) on the informatization of SMEs?
- What is the relationship between the supporting organizations and other influential entities in improving ICT for SMEs?
- What are the factors inhibiting SME informatization, and what are the roles of government and other supporting organizations to overcome such barriers?
4. Research Methods

The Korean research team had two different research agendas. The first one, “SME Informatization Policies and Approaches in APEC Member Economies”, looks into the policies and approaches each government uses to promote and improve SME informatization and reviews the intermediaries supporting SME informatization.

The other agenda, “APEC SME Informatization: Case Studies and Survey”, reviews the current status, characteristics and major issues of SME informatization from the perspective of ICT consumers (SMEs). The research methodology for each agenda is explained in detail below.

4.1. SME Informatization Policies and Approaches

The following three research methods were used: (1) a literature review, including the Web search; (2) a survey using a well-designed questionnaire for a focus group of government officials; and (3) site visits and interviews with government officials in charge of SME informatization.

This well-structured questionnaire was distributed to all focal points of the APEC SME Working Group by e-mail and fax. The questionnaire dealt with the major policies of member governments, progress in policy implementation, types of related agencies, major supporting governmental organizations or intermediaries, and information about SME informatization related projects and personnel. The questionnaire was distributed to all 21 member economies, but only seven member economies replied.

The interviews were conducted in the selected 12 member economies due to time and budgetary constraints. According to the National Informatization Index (NII), the research team categorized the APEC member economies into the following two tiers (See Table 1-1 below) and selected six member economies from each tier:
- U.S., Canada, Japan, Korea, Australia, and Chinese Taipei from the high tier in the NII; and
- Malaysia, China, Indonesia, Mexico, Russia and Thailand from the low tier in the NII.

9) For details of the questionnaire, see Appendix A.
10) Those member economies are Canada, Hong Kong, Japan, Korea, Philippines, Russia and Chinese Taipei.
11) For the categorization according to the level of national informatization, see NCA (2003).

<table>
<thead>
<tr>
<th>National Informatization Index</th>
<th>Stage</th>
<th>Member Economies</th>
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<tbody>
<tr>
<td>60 - 100</td>
<td>Growth or maturity stage: High tier in the NII</td>
<td>U.S., Hong Kong, Canada, Singapore, Japan, Korea, New Zealand, Australia, Chinese Taipei</td>
</tr>
<tr>
<td>0 - 60</td>
<td>Introduction stage: Low tier in the NII</td>
<td>Malaysia, Chile, China, Peru, Indonesia, Mexico, Philippines, Russia, Thailand, Vietnam, Papua New Guinea, Brunei</td>
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Notes: The member economies listed in bold type were those visited for interviews.
The interviewees were from government bodies and intermediaries, for example, expert groups or SME industry associations deeply involved with planning and implementing policies for SME informatization.

The findings from the interviews are well summarized in Appendix B in the following sequence: (1) Trends of Informatization; (2) Definition of Small and Medium Enterprises; (3) Strategy and Progress of SME Informatization; (4) Government Organizations for SME Informatization; (5) Major Policies and Projects for Enhancing SME Informatization; (6) Efforts for SME Informatization from the Private Sector; and (7) Overall Assessment of SME Informatization

4.2. APEC SME Informatization: Case Studies and Survey

Two empirical studies were conducted: (1) case studies in 10 member economies; and (2) a questionnaire survey of the Korean SMEs. The comparison of cases among the member economies produced meaningful implications that help to take successful approaches to the informatization of APEC SMEs.

Case Studies

The following 10 member economies were selected for the case study - Australia, China, Indonesia, Japan, Korea, Malaysia, Mexico, Chinese Taipei, Thailand, and the United States. Two cases (companies) from each member economy (except for Australia and Korea) were selected and analyzed, equalling 18 cases in total.

In choosing the industries for the case studies, the research team initially planned to select one or two industries common in the member economies surveyed for the sake of easy comparison using two criteria: the industry’s contribution to GDP; and the informatization levels. However, these criteria were difficult to apply.

As an alternative, the team suggested three industries to focus on: (1) electrical and electronics equipments; (2) machinery and transport equipment; and (3) wholesale and retail sales. These industries were recommended because they commonly existed in all 10 economies. If a member economy could not find any appropriate case in these industries, the team suggested that the focal points find appropriate cases in other industries. As a result, the cases were chosen from a wide range of industries, making accurate comparison difficult. The SMEs that the team targeted for the survey were those located in large cities or urban areas.

The case study surveyed the following issues:
- The business environment: buyers, vendors, large firms, alliances, and industry characteristics
- Attitude towards ICT: Attitudes of CEOs and ICT organization

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12) The Korean research team originally had planned to conduct surveys on four member economies: Korea, Canada, Japan and Chinese Taipei. However, due to difficulties in data collection, only Korea was chosen for the survey.
13) The case study was not carried out in Russia and Canada, in which the on-site interviews for the SME informatization policies were made.
14) Some member economies did not provide detailed information of some economic indicators. For example, very few member economies provided a breakdown of GDP by industry. We concluded that it was impossible to choose and study the industries that commonly exist in all APEC member economies.
15) For details of the questionnaire of the case study, see Appendix C.
· The current status regarding ICT adoption: hardware (HW), software (SW), and networks (NW)
· Benefits of ICT introduction
· ICT facilitators and barriers: funds, training and education, experiences and knowledge, consulting, and technologies
· Gender consideration in SME informatization

The results of the case studies are summarized in Appendix D in the following sequence: (1) Company Introduction; (2) Status of ICT Adoption; and (3) Factors influencing ICT Adoption.

**Questionnaire survey of the Korean SMEs**

The questionnaire survey of the Korean SMEs was conducted by KIMI (Korea Information Management Institute for SMEs) using a statistical sampling method to choose SMEs representative of the various business clusters and informatization levels. Samples were 334 small and medium manufacturers with the number of employees between five and 50. The survey period was one month from June to July 2003. Face-to-face interviews and site visits were conducted together with data collection by email. The survey covers the current status of ICT utilization, ICT benefits, ICT adoption and application, and barriers to ICT use. The results are introduced in Appendix E.