Assessment Framework for the Daegu Initiative

APEC Small and Medium Enterprise Working Group

2008

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Korea Technology and Information Promotion Agency for SMEs

APEC SME Innovation Center

Prepared by:
Korea Technology and Information Promotion Agency for SMEs
3F Excon Venture Tower, 64 Eunhaenggil
Yeouido-dong, Yeongdeungpo-gu, Seoul, 150-969, Korea
Tel: 82-2-3787-0400 Fax: 82-2-784-0509
E-mail: apec@tipa.or.kr Website: www.tipa.or.kr

For:
APEC Secretariat
35 Heng Mui Keng Terrace
Singapore, 119616
Tel. 65-6775-6012 Fax: 65-6775-6013
E-mail: info@apec.org Website: www.apec.org

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Contributors:

The Research Team:

Junsok Yang
Assistant Professor
Economics Dept.
The Catholic University of Korea
E-mail: yanjuna@catholic.ac.kr

Jung-Tae Hwang
Assistant Professor
Business Studies Division
Hallym University
E-mail: jthwang@hallym.ac.kr

Woo Sung Lee
Associate Research Fellow
Science and Technology Policy Institute (Korea)
E-mail: leews@stepi.re.kr

Joo-Yong Kim
Director,
APEC SME Innovation Center
Korea Technology and Information Agency for Small and Medium Enterprises (TIPA)
E-mail: jooykim@tipa.or.kr

Soo-Hong Kim
Researcher
APEC SME Innovation Center
Korea Technology and Information Agency for Small and Medium Enterprises (TIPA)
E-mail: ksh2146@tipa.or.kr

<Executive Summary>

The APEC Small and Medium Enterprise (SME) Ministers, on September 1-2, 2005, In recognition that an economy's development depends crucially on the innovative capacity of the economy, and that SMEs can play an important part in building the innovative capacity of the economy, approved and endorsed the "Daegu Initiative on SME Innovation Action Plan" as a part of the overall SME-related work in APEC. The Daegu Initiative recognizes the importance of innovation for SMEs, and aims to be a constructive part of the work by the SME Working Group on fostering innovation in SMEs.

Objectives of the Daegu Initiative

The Daegu Initiative aims to create economic and policy environment conducive to SME innovation in the APEC region and to identify cooperative measures based on voluntary reviews, and the sharing of policy experiences among member economies.

Implementation Strategy of the Daegu Initiative:

The Daegu Initiative is intended as a long-term measure which will run in three five-year cycles from 2006 to 2020. At the beginning of each cycle, the SME Working Group (SMEWG) will decide on areas to examine in the cycle. These areas should be policy areas which are important for SME innovation. SMEWG will also decide on elements for each area. Elements are specific factors, which are deemed important for SME innovations, in each area. During each cycle, each economy will prepare Innovation Action Plans (IAPs) which contain achievements, current status and short and long-term plans on the specified areas and elements regarding innovation policies for SMEs[1]. Member economies are expected to submit their IAPs and implement them.

Member economies may submit a self-assessment report on the progress of Innovation Action Plans for SME innovation at the end of the five year cycle (the first of which ends in 2010). Then, based on the IAPs and self-assessment reports submitted by the member economy, SMEWG may submit a report to the SME Ministers at the end of each cycle, on guidelines for facilitating SME innovation, the best practices on SME innovation in member economies and possible collective actions that the members can take, based on these IAPs and self assessment reports.

Afterwards, this cycle will repeat every five years.(if the members agree to proceed with the second cycle in 2010 and with the third cycle in 2015.) The Working Group may conduct the final review on implementation results of SME innovation policies by member economies in 2020. The SMEWG may choose to modify its list of areas and elements at the beginning of each five-year cycle to better reflect the changes in the economic environment.

[1] : IAPs here stand for Innovation Action Plan, and should be distinguished from the Individual Action Plans for Trade and Investment Liberalization.

Seven Areas of the Daegu Initiative on SME IAP (First Cycle)

For the first cycle of the Daegu Initiative, the following seven areas were selected.

1. Developing human resources and technology through linkage between industry and educational and research institutions
2. Access to specialist assistance and advice
3. Enhancing availability of capital to innovative SMEs
4. Networking and clustering for innovative SMEs
5. Establishing appropriate legal and regulatory structures
6. Establishing a market consistent economic environment
7. Developing methodologies for effectively measuring progress in the implementation of innovative programs for SMEs

Development of an Assessment Framework for the Daegu Initiative on SME IAP

As the end of the first cycle approaches, there has been growing concern that the current Daegu Initiative includes no descriptions on what the self-assessment reports should look like, and what factors they should examine. The Initiative gives no guidance on how the self-assessment should be done, what information should be reported, and in what form. There has been presumption that the self-assessment report should be based on the seven areas and elements of the Daegu Initiative on SME IAP, but beyond that presumption, there are no guidelines or requirements. Thus, more detailed guidelines for drafting the self-assessment report were required. Once the guidelines for the self-assessment reports are drafted, these guidelines could be used for writing or revising the IAP reports as well.

This report is intended to provide such suggestions and guidelines to the member economies. Part II of this report briefly reviews the intentions behind the Daegu Initiative, and what the Daegu Initiative requires from its members. During the five years of the first cycle, member economies, if they so choose, can submit innovation action plans (IAPs) in seven areas to the APEC SME Innovation Center, based on the format of IAP as described in <Appendix 2-1> of this report.. Part III contains seven chapters, one for each area of the first cycle of the Daegu Initiative. For each area, in order to provide guidelines on how member economies should submit their self-assessment reports, each of the elements in each area is reviewed. For each element, the report suggests “checklist items” that each member economy can check and grade themselves based on a guideline listed under each checklist item. Also, these checklist items can be used as a guide to submit the remaining IAPs or to revise those IAPs already submitted. Each chapter in Part III also suggests how the elements may be changed for the next cycle of the Daegu Initiative due to take place between 2010 and 2015, if the SMEWG chooses to change the areas and elements. Part IV is a short conclusion. Part V provides a short guide on how to write the assessment report, as well as a handy list of all the checklist items for each area.

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Assessment Framework for the Daegu Initiative

Part I:

Chapter 1: Introduction

APEC was established in 1989 to further enhance economic growth and prosperity for the region and to strengthen the Asia-Pacific community. Since its inception, APEC has worked to reduce tariffs and other trade barriers across the Asia-Pacific region, creating efficient domestic economies and dramatically increasing exports[2].

While APEC initially concentrated its efforts on liberalizing trade and investment as well as encouraging cooperation and technical assistance among its member economies to raise the welfare of the region, APEC member economies quickly realized that in order to fulfill its objectives, APEC must expand its vision and widen its agenda. Removing trade and investment barriers is not sufficient to improve economy of members if their businesses do not have the capacity to fully take advantage of these new opportunities.

As a result, APEC began cooperative efforts on economic and social areas. Among such cooperative efforts was an effort to facilitate the development of small and medium sized enterprises (SMEs), since SMEs play an important part in all APEC members' economies, and SMEs often face many difficulties in trading abroad, attracting foreign capital, and making overseas investment.

Thus, in 1995, APEC established the Ad Hoc Policy Level Group on SMEs (PLGSME). Its objective was to assist SMEs to improve their competitiveness and to facilitate a more open trade and investment environment. Originally set up for two years, its term was extended in 1996 and again in 1998. In 2000, this group was renamed the Small and Medium Enterprises Working Group (SMEWG) and was granted permanent status. The SMEWG provides the foundation for other APEC fora to incorporate SME considerations into their mandates and activities. The meeting of Ministers responsible for SMEs has been held annually since 1994. In 2002, APEC Ministers responsible for SMEs established the Micro-Enterprise Sub Group (MESG)[3].

Since 1995, PLGSME and SMEWG pursued issues of interest to SMEs across the APEC region. These issues included difficulties specific to SMEs such as access to capital and specialists, lack of resources and expertise compared to large enterprises, and what type of government assistance programs and policies are desirable to foster an economic environment where SMEs can play an active and important role.

Through discussions and dialogue within SMEWG, the APEC member economies came to recognize the strong potential role that SMEs can play in leading innovation in

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[2] : From APEC website http://www.apec.org/apec/about_apec.html

[3] : From APEC SMEWG website: http://www.apec.org/apec/apec_groups/som_committee_on_economic/working_groups/small_and_medium_enterprises.html

their individual and regional economies. As a result, more interest was paid to what roles SMEs can play in innovation. While SMEs does have some disadvantages, they also have strong advantages as well. Given proper incentives, because of their flexibility, SMEs can play a strong role in innovation, and carve out technological or operational niche in the economy. As a consequence, SMEs can play a leading role in innovation for the entire economy.

In recognition that an economy's development depends crucially on the innovative capacity of the economy, and that SMEs can play an important part in building the innovative capacity of the economy, the SME Ministers, on September 1-2, 2005, approved and endorsed the "Daegu Initiative on SME Innovation Action Plan" as a part of the overall SME-related work in APEC. The Daegu Initiative recognized the importance of innovation for SMEs, and aims to be a constructive part of the work by the SME Working Group on fostering innovation in SMEs. <Box I-1> reports the Daegu Initiative on SME Innovation Action Plan as it was reported in the attachment to 2005 SME Ministers' Declaration.

<Box I-1> Daegu Initiative on SME Innovation Action Plan (2005)

APEC SMALL AND MEDIUM ENTERPRISE MINISTERIAL MEETING
DAEGU, KOREA
1-2 SEPTEMBER 2005
DAEGU INITIATIVE ON SME INNOVATION ACTION PLAN

1. INNOVATION AND SMEs

Innovation is the main driving force of economic development for developing as well as developed economies. With their flexibility and responsiveness, Small and Medium Enterprises (SMEs) play a vital role in innovation. SMEs have to innovate to fill the opportunities created by the changing and globalizing marketplace.

However, in order to facilitate the innovative activities of SMEs, appropriate economic and policy environments are necessary. The Daegu Initiative on SME Innovation Action Plan is an opportunity for each economy to establish appropriate economic and policy environments, so that innovative SMEs can realize their potential, and increase the innovative capacity of the individual and regional economy.

2. INNOVATION AND THE ROLE OF APEC

While SME innovation drives economic growth, SME innovation depends on the economic and policy environments. Depending on the individual economy, there may be areas for improvements, to facilitate innovation. APEC can play a crucial role in helping economies identify the areas and elements which could be addressed, and thus make positive contributions to improving the environment for innovation. APEC is in a unique position in that APEC includes a diverse group of member economies with different strengths and weaknesses. Thus, APEC can recognize the diversity of difficulties that economies face, and share the wide-ranging experiences and abilities of its members in suggesting possible approaches and alternatives.

3. THE OBJECTIVE AND STRATEGY OF THE DAEGU INITIATIVE

The Daegu Initiative seeks to improve the economic and policy environments of all member economies, to make them more conducive to SME innovation. The objective of the Daegu Initiative is to help each APEC member economy identify those factors which can be improved to accelerate innovation. The Daegu Initiative is based on the spirit of voluntarism, consensus-building, combination of individual and collective actions, flexibility, comprehensiveness and open regionalism. The Daegu Initiative also complements "The APEC Integrated Action Plan for SME Development (SPAN)" by encouraging the member economies to take a more active and focused role in making their economies more friendly to innovative SMEs. The member economies will, through the Daegu Initiative, identify cooperative and efficient measures to facilitate SME innovation through preparing voluntary reviews, information sharing, and robust discussion among peers.

The Daegu Initiative will ask all members to consider submitting an Innovation Action Plan, based on a common Template. The Innovation Action Plan will be a set of activities which lists how the members will improve their environments for SME innovation by 2020.

Member economies will maintain discussions on specific areas of importance for innovation and on each member's progress, and in 2010, the members will carry out self-assessment on their progress. In 2010, the members may decide to proceed with the second five-year cycle of the Daegu Initiative, which would last until 2015. The members may then decide to proceed with the third cycle, where the final self assessments would take place in 2020.

4. THE MODALITY OF THE DAEGU INITIATIVE

The Daegu Initiative is intended as a long-term measure which will run in five year cycles. For each cycle, the SME Working Group will develop a common Template for "SME Innovation Action Plan" which each member economy will utilize. The Innovation Action Plan will ask each member to review its domestic economy and policies to examine specific elements deemed important for fostering SME innovation.

For the first cycle of the Daegu Initiative, the SME Working Group will determine, based on previous APEC-related research and discussions, what elements in the following areas are crucial for establishing an innovation-friendly economic environment, and list those elements in a common Template. These areas were identified as important for innovation by the SME Working Group and member economies:

a. Developing Human resources and technology through linkage between industry and educational and research institutions

   Human resources and technology development are the raw material for innovation. Since educational institutions are responsible for human resource development, and research institutions are responsible for research and development of science and technology, it is important to facilitate cooperation between industry and educational and research institutions.

b. Accessing to specialist assistance and advice

   SMEs face barriers in fully exploiting innovative opportunities due to size and capability constraints. Allowing them to gain easy and

inexpensive access to specialist technical and managerial expertise should help them in getting their innovative products and services to market more quickly.

c. Enhancing availability of capital to innovative SMEs

Capital is the fuel for SMEs engaged in innovation. Thus, healthy SME innovation requires adequate availability of capital, both debt and equity, for credit-worthy enterprises.

d. Networking and clustering for innovative SMEs

Networking and clustering have been shown to have positive externalities. Further, networking and clustering accelerate innovation by gathering resources, for example, specialists and experts, and allowing them to share knowledge.

e. Establishing appropriate legal and regulatory structures

Robust legal and regulatory structures designed to establish and enforce intellectual property rights, competition policy, and facilitate the quick and inexpensive establishment of firms are vital to all SMEs and especially important in encouraging innovation among SMEs. The absence of such structures can stifle innovation while undermining the ability of SMEs to compete.

f. Establishing a market consistent economic environment

Under a market consistent economic environment, innovative, efficient SMEs will have the greatest opportunities to access the resources they merit and require while facilitating firms to freely enter and exit the market.

g. Developing methodologies for effectively measuring progress in the implementation of innovation programs for SMEs

The development of statistics and other methodologies for measuring progress concerning SMEs and innovation is required if further and more in-depth analyses of SMEs and innovation are to be made on a factual and scientific basis. In order to establish such statistics and measurements, APEC member economies may choose to develop mutually compatible definitions, so that data can be compared across members.

Members agree to implement a process for reporting progress, sharing best practices and knowledge of measures to enhance the environment for innovative SMEs that incorporate the following principles.

(1) A common template for designing Innovation Action Plan will be drafted; agreed and distributed to all member economies.

(2) Economies that wish to participate in this initiative will prepare, before the 2006 Ministerial meeting, an Innovation Action Plan setting out past achievements, short term plans and long term plans, for addressing each of the areas set out above. Long term plans should list plans to up to 2020, the target date for all members to achieve the Bogor Goal.

(3) Each year, for the first five years, at least one of the seven areas, in turn, will be a theme for reporting and in-depth discussion at the Working Group meetings.

(4) The areas should be used as a means for prioritizing SME Working Group

projects.

(5) In 2010, member economies may submit a self-assessment report on the progress of the Innovation Action Plan. The self-assessment reports will examine whether and how much the member economies implemented the measures which they had reported in their SME Innovation Action Plan, and how successful those measures have been in dealing with those elements.

(6) Based on the self-assessments and the discussions in the SME Working Group, the Working Group may submit a report to the SME Ministers. This report will include the following:

- Guidelines for facilitating SME innovation in APEC member economies
- The best practices of member economies
- The possible collective actions that the members can take

(7) In 2010, the members will decide whether to proceed with the second round of the Daegu Initiative, and how that will be put into effect. Reviews based on the revised Innovation Action Plans will take place in 2015. If the members agree to proceed with the third cycle, the process will be repeated again with the final review to take place in 2020.

5. THE TIMEFRAME FOR THE FIRST CYCLE

SMEWG I – 2006

A Task Force of member economies will prepare a detailed Implementation Plan to give effect to these principles. The Term of Reference of the Task Force is attached as Attachment A. That Plan will be submitted for approval at the SMEWG I meeting in March 2006.

SME Ministerial Meeting 2006

Member economies, which decide to participate, will publish their Innovation Action Plan based on the agreed template for distribution at the meeting.

2007-2010

Each of the seven areas of the Initiative will be, in turn, a theme of discussion in SMEWG meetings.

SME Ministerial Meeting 2010

Participating member economies may choose to submit self-assessment on the status of their Innovation Action Plan.

<Source> Attachment to APEC SME Ministerial Declaration 2005.

As seen in <Box 1-1>, the Daegu Initiative has been in operation since 2005. The APEC SME Innovation Center has been acting as the secretariat and clearinghouse for matters related to the Daegu Initiative and its Innovation Action Plan (IAP)[4]. As of this

[4] : APEC's Committee on Trade and Investment (CTI) maintains "Individual Action Plan," which keeps track of trade and investment liberalization measures implemented or planned by APEC member economies. In some ways, the format of the Individual Action Plan is very similar to the Innovation

writing in November 2008, the Daegu Initiative is approaching the end of its first cycle, when member economies may submit a self-assessment report, and the SMEWG may submit a report to the SME ministers. There has been a growing recognition by the member economies and by the APEC SME Innovation Center that there needs to be a clearer guideline and suggestions on how the member economies should submit their self-assessment reports, and what type of information should be included in the SMEWG report to the SME Minsiters.

This report is intended to provide such suggestions and guidelines to the member economies. Part II of this report briefly reviews the intentions behind the Daegu Initiative, and what the Daegu Initiative requires from its members. During the five years of the first cycle, member economies, if they so choose, could submit innovation action plans (IAPs) in seven areas to the APEC SME Innovation Center. The IAP is divided into seven areas, and the SMEWG has provided various sub-categories within each area that the member economies could report their progress and best measures on. (These sub-categories will be referred to as "elements."). However, in many cases, these elements are vague, and require further clarification. Also, it was not clear how these elements should be reported in the self-assessment reports of 2010, and how they will be processed in the SMEWG report to the Ministers. Part III contains seven chapters, one for each area. For each area, in order to provide guidelines on how member economies should submit their self-assessment reports, each of the elements in each area is reviewed. For each element, the report suggests "checklist items" that each member economy can check and grade themselves based on a guideline listed under each checklist item. Also, these checklist items can be used as a guide to submit the remaining IAPs or to revise those IAPs already submitted. Each chapter in Part III also suggests how the elements may be changed for the next cycle of the Daegu Initiative due to take place between 2010 and 2015. Part IV is a short conclusion. Part V provides a short guide on how to write the assessment report, as well as a handy list of all the checklist items for each area.

It is hoped that this report will help the APEC member economies organize and submit the self-assessment reports in 2010, and provide guidance to writing or revising the IAPs. Also, it is hoped that this report will assist the SMEWG in drafting the report to the SME Ministers due in 2010.

The research team, listed at the beginning of this report is responsible for the contents of this report. The team wishes to thank the APEC SME Innovation Center for their assistance and guidance. The team also wishes to thank Dr. Joon-Ho Lee of Korea Small Business Institute (KOSBI) who played an important part in the research for this report in the beginning of the project.

Action Plan. In fact, the Innovation Action Plan was modeled in many ways after the Individual Action Plan. These two "IAPs" should not be confused. In this report, "IAP" refers to the Innovation Action Plan. When the report needs to refer to the Individual Action Plan (for trade and investment liberalization), the report will refer to them as "TILF-IAPs."

Part II: Background on the Daegu Initiative and Development of an Assessment Framework for the Daegu Initiative on SME IAP

In this part of the report, we examine how the Daegu Initiative is supposed to work, overall. Chapter 2 examines the objectives and implementation strategy of the Daegu Initiative. It also describes the Innovation Action Plan (IAPs) that APEC member economies may submit. Chapter 3 examines the self-assessment reports that member economies may submit in 2010, and the SMEWG report to the SME Ministers that the SMEWG may submit in 2010 based on the submitted IAPs and members' self-assessment reports.

Chapter 2: The Objectives and Implementation Strategy of the Daegu Initiative

Objectives of the Daegu Initiative

As stated in the plan announced by the SME Working Group during the SME Ministerial Meeting in 2005, the Daegu Initiative aims to create economic and policy environment conducive to SME innovation in the APEC region and to identify cooperative measures based on voluntary reviews, and the sharing of policy experiences among member economies.

Implementation Strategy of the Daegu Initiative:

The Daegu Initiative is intended as a long-term measure which will run in three five-year cycles from 2006 to 2020. Each economy will prepare Innovation Action Plans (IAPs) which contain achievements, current status and short and long-term plans on pre-specified areas regarding innovation policies for SMEs[5]. Member economies are expected to submit their IAPs and implement them. Member economies may submit a self-assessment report on the progress of Innovation Action Plans for SME innovation at the end of the five year cycle (the first of which ends in 2010). Then, the Working Group may submit a report to the SME Ministers in 2010 on guidelines for facilitating SME innovation, the best practices on SME innovation in member economies and possible collective actions that the members can take, based on these IAPs and self assessment reports.

Afterwards, this cycle will repeat every five years.(if the members agree to proceed with the second cycle in 2010 and with the third cycle in 2015.) The Working Group may conduct the final review on implementation results of SME innovation policies by member economies in 2020. The Working Group may choose to modify its list of areas and elements at the beginning of each five-year cycle to better reflect the changes in the economic environment.

Seven Areas of the Daegu Initiative on SME IAP (First Cycle)

For the first cycle of the Daegu Initiative, the following seven areas were selected.

1. Developing human resources and technology through linkage between industry and educational and research institutions
2. Access to specialist assistance and advice
3. Enhancing availability of capital to innovative SMEs
4. Networking and clustering for innovative SMEs
5. Establishing appropriate legal and regulatory structures
6. Establishing a market consistent economic environment
7. Developing methodologies for effectively measuring progress in the

[5] : IAPs here stand for Innovation Action Plan, and should be distinguished from the Individual Action Plans for Trade and Investment Liberalization.

implementation of innovative programs for SMEs

Progress on the Daegu Initiative (First Cycle)

In 2006, the seven areas and the subordinate elements for each area of the IAP were selected. Between 2006 and 2008, under the direction of the APEC SME Innovation Center, each member economy was requested to submit IAP reports in one or two selected areas each year. As of August 8, 2008, 15 member economies have participated in the Daegu Initiative, and submitted at least one IAP area report to the SME Innovation Center. Additional submissions, as well as revisions and additions to the submitted IAP reports are expected from 2008 to 2010.

<Appendix 2> reports the current format of the IAP, including the elements for each area. As can be seen, for each area, there are four to six individual elements. For example, in Area A (Developing Human resources and technology through linkage between industry and educational and research institutions), there are six policy elements (Joint research and development among university-industry-institutes; Patent or technology transfer; Utilization of human resources and research facilities in universities and institutes; Incentives to attract young talents to SMEs; Supply of human resources that meet the needs of SMEs; and Others) which describe what types of policies that can be included in this area. There are spaces to report past achievements, short term plans, and long term plans in each policy element. Member economies, if they choose to submit the IAP and if they have relevant information to report, should fill out the space with relevant information. If additional space is needed, they can submit an explanatory note which can be attached to the IAP, or preferably, submit an Internet address (URL) which has additional details.

If the member economy believes that they have a policy in a particular element which can be considered 'APEC best practice,' they can fill out the IAP and submit an additional explanatory note or an Internet address, which contains relevant information on the best practice.

On Writing Best Practice Examples:

When preparing a 'best practice report,' the writer should remember that these examples serve two purposes: 1) To show that your economy has done exemplary work – to publicize your policies and the results of your policies; and 2) Let other member economies know exactly what your economy has done so that they can consider similar policies and initiatives. For both purposes, it is very important that the writer gets his ideas across accurately.

The best practice example should include the following:

1. A short introduction on what the policy is;
2. An explanation on why the policy was needed, and what its goals were;
3. What were the actual details of the policy (in terms of how they affected people and firms)?

4. What were the results of the policy, and how did the policy fulfill the stated goals?

The writer should try to give as many concrete details as possible, but avoid merely listing the names of the laws and regulations that changed. Instead, the writer should try to explain how the changes in law and regulations lead to making SME innovation easier. The writer should also keep the reader in mind, and try to include details which will interest the reader, rather than just trying to list every detail, which may or may not be important. The best practice example should be at least one page long, and can be longer if the details warrant it.

A member economy can submit more than one best practice for each area or even each element or checklist item. However, the member economies should submit each best practice separately, so that they can be more easily linked from the IAP report tables, and can be more easily incorporated into the self-assessment reports..

Ideally, a best practice report should have three sections: 1) Introduction and Background (which tries to explain the need for the policy in question); 2) Section which describes the actual policies and their implementation; and 3) What their results were (including details on why this policy could be considered 'best practice.'). The report should also include as many concrete details as possible, without getting too technical; and what the policy could mean for those who are affected by the policy. The best practice report should be directly related to one of the seven areas in the Daegu Initiative.

The Meaning and the Importance of the Daegu Initiative

While the importance of innovation to economic growth, national income and national competitiveness has long been recognized, there are relatively few studies which attempt to examine infrastructure and incentives for innovation periodically over a period of time.

National economic competitiveness surveys, such as those gathered by IMD and World Economic Forum (WEF) contain sections on innovation, which examines the institutions and infrastructure for innovation. However, in these surveys, factors concerning innovation form only a small part of the overall survey. Further, because these surveys involve dozens of statistics and survey questions, there are only a few elements which deal with innovation, and none which deal with innovation in the SMEs.

There are some surveys which examine how countries and economies can foster innovative environment for their firms. The most well known innovation survey may be the European Innovation Scoreboard. The scoreboard looks at about twenty-five statistical indicators related to innovation for EU countries. <Table 2-1> lists the statistics covered by the European Innovation Scoreboard in 2007.

<Table 2-1> Statistics Covered by the European Innovation Scoreboard (2007)

Major Heading	Statistics Considered

1. Innovation Drivers (Input Dimension)	1.1 Science & engineering graduates per 1000 population aged 20-29
	1.2 Population with tertiary education per 100 population aged 25-64
	1.3 Broadband penetration rate (number of broadband lines per 100 population)
	1.4 Participation in life-long learning per 100 population aged 25-64
	1.5 Youth education attainment level (% of population aged 20-24 having completed at least upper secondary education)
2. Knowledge Creation (input dimension)	2.1 Public R&D expenditures (% of GDP)
	2.2 Business R&D expenditures (% of GDP)
	2.3 Share of medium-high-tech and high-tech R&D (% of manufacturing R&D expenditures)
	2.4 Share of enterprises receiving public funding for innovation
3. Innovation and Entrepreneurship (Input Dimension)	3.1 SMEs innovating in-house (% of all SMEs)
	3.2 Innovative SMEs co-operating with others (% of all SMEs)
	3.3 Innovation expenditures (% of total turnover)
	3.4 Early-stage venture capital (% of GDP)
	3.5 ICT expenditures (% of GDP)
	3.6 SMEs using organisational innovation (% of all SMEs)
4. Applications (Output Dimension)	4.1 Employment in high-tech services (% of total workforce)
	4.2 Exports of high technology products as a share of total exports
	4.3 Sales of new-to-market products (% of total turnover)
	4.4 Sales of new-to-firm products (% of total turnover)
	4.5 Employment in medium-high and high-tech manufacturing (% of total workforce)
5. Intellectual Property (Output Dimension)	5.1 EPO patents per million population
	5.2 US Patent Office patents per million population
	5.3 Triad patents per million population
	5.4 New community trademarks per million population
	5.5 New community designs per million population

<Source> European Commission (2008)

Most of the statistics in <Table 2-1> are collected by the EU, and available through Eurostat. However, because these statistics only give a general picture through numbers, they do not necessarily give qualitative information on innovation policies. Further, because these are national statistics, and not all of them deal exclusively with SMEs, the scoreboard cannot give a regional picture, or an accurate picture on state of

innovative SMEs because the statistics do not give such specific information. Finally, the scoreboard is not ideally suited to APEC member economies because such data is not always available in APEC member economies.

To overcome the limited 'quantitative' nature of the innovation scoreboard, EU also sponsors an annual survey of randomly selected firms dealing with innovation. EU selects one area each year, and surveys randomly selected innovative firms to get their opinions. This report is published as 'Innobarometer' each year.

Another example may be the Oregon Innovation Index. Oregon State in the United States examines nine areas relating to innovation each year, to see whether the Oregon state maintains an environment conducive to innovation. <Table 2-2> lists the items examined in the Oregon Innovation Index.

<Table 2-2> Elements Used in the Oregon Innovation Index

Major classification	Elements
1. Invention	1-1 Invention disclosures
	1-2 Patents
	1-3 Patent citations
2. Translations	2-1 R&D investments
	2-2 SBIR/STTR awards
	2-3 University licenses / options
	2-4 University licensing income
3. Commercialization	3-1 Venture capital investments
	3-2 Kaufmann index of entrepreneurship
	3-3 New company creation
	3-4 University startups
4. Economic Prosperity	4-1 Average wage
	4-2 Technology sector employment
	4-3 Foreign exports
5. Innovative Environment	5-1 Educational attainment
	5-2 Science & engineers in the workforce
	5-3 High speed Internet lines
	5-4 Renewable energy usage
	5-5 Greenhouse gas emissions
	5-6 Energy intensity

<Source> Oregon Economic and Community Development Department (2007)

The Oregon Economic and Community Development Department is responsible for calculating the Innovation Index each year. The Department examines the ranking of Oregon by comparing Oregon's rank compared to other US states in each of the elements above, and then calculates a weighted average ranking of Oregon compared to other US states.

While these indicators are helpful, they may not be directly applicable to APEC member economies, because of the wide differences in developmental status of APEC

member economies, as well as the lack of information, both statistical and policy-related. Thus, in the Part III of the report, we develop a list of checklist items that APEC members can use to assess the innovative environment in their economies.

<References>

European Commission (2008) “European Innovation Scoreboard 2007,” PRO INNO Europe Working Paper No.6, European Commission.

Oregon Economic and Community Development Department (2007) “Innovation Index Oregon 2007” Oregon Economic and Community Development Department,

<Appendix 2-1> Template for Innovation Action Plan – First Cycle of the Daegu Initiative

Area A: Developing Human resources and technology through linkage between industry and educational and research institutions

	Past achievement	Short-term plans	Long-term plans
Joint research and development among university-industry-institutes			
Patent or technology transfer			
Utilization of human resources and research facilities in universities and institutes			
Incentives to attract young talents to SMEs			
Supply of human resources that meet the needs of SMEs			
Others			

Area B : Accessing to specialist assistance and advice

	Past achievement	Short-term plans	Long-term plans
Assessing technological challenges facing SMEs			
Consulting SMEs' digitalization			
Research equipment and human resources search system			
Expanding public service benefits			
Innovation education for SME employees			
Others			

Area C: Enhancing availability of capital to innovative SMEs

	Past achievement	Short-term plans	Long-term plans
Providing financial incentives for innovative SMEs			
Providing SMEs with Policy loans based on technological competence or feasibility evaluation			
Establishing an institution dedicated to providing SMEs			

with guaranteed loans			
Strengthening support for guarantee			
Streamlining SME financing procedures			
Considering SMEs outside policy support			
Others			

Area D: Networking and clustering for innovative SMEs

	Past achievement	Short-term plans	Long-term plans
Policy for clustering SMEs by region			
Policy for clustering SMEs by industry			
Policy for promoting clustering SMEs			
Strengthening network among clusters			
Others			

Area E: Establishing appropriate legal and regulatory structure

	Past achievement	Short-term plans	Long-term plans
Providing legal support for innovative SMEs			
Promoting public institutions' purchases of SME products			
Enhancing support for technically competent SMEs			
Enhancing support for the R&D area			
Others			

Area F: Establishing a market consistent economic environment

	Past achievement	Short-term plans	Long-term plans
Strengthening cooperation between large companies and SMEs			
Facilitating digitalization of SMEs			
Supporting SMEs to make inroads into overseas markets			

Facilitating SME restructuring			
Others			

Area G: Developing methodologies for effectively measuring progress in the implementation of innovation programs for SMEs

	Past achievement	Short-term plans	Long-term plans
Customer-oriented evaluation system			
SME policy disclosure and evaluation system			
SME policy comparing system			
SME policy proposal system			
Others			

Chapter 3: 2010 Self-Assessment Reports and SMEWG Report to the SME Ministers

Background

According to the timetable laid down in the Daegu Initiative, in 2010, member economies may submit a self-assessment of their policies and best policy practices related to innovative SMEs, especially concerning the seven areas of the IAPs. Based on these self-assessment reports and the previously submitted IAPs, the SME Working Group is expected to draft the first best practice report.

However, the Daegu Initiative includes no descriptions on what these self-assessment reports should look like. The Initiative gives no guidance on how the self-assessment should be done, what information should be reported, and in what form. There has been presumption that the self-assessment report should be based on the seven areas and elements of the Daegu Initiative on SME IAP, but beyond that presumption, there are no guidelines or requirements.

Development of an Assessment Framework for the Daegu Initiative on SME IAP

As the end of the first cycle of the Daegu Initiative approaches, there has been growing recognition that more detailed guidelines for drafting the self-assessment report were required. It was not always clear what many of the elements of the IAP meant, and what the member economy was expected to report under each element. Further, since the SME IAP, like other 'progress indicators' such as the EU Innovation Index, World Bank Doing Business Indicators, and WEF and IMD Competitive Indicators, act as both 'policy advice' to policymakers and 'evaluation criterion' to measure progress on selected policy issues, the criteria for each area and element of the Daegu Initiative IAP were needed to be more concrete and detailed; and a clearer idea on how progress on the elements of the IAP would be measured.

Once the guidelines for the self-assessment reports are drafted, these guidelines could be used for the IAP reports as well, so that the member economies have a clearer idea on what is expected when they submit the IAP, and the self-assessment reports in 2010.

Thus, in March 2008, the APEC SME Innovation Center launched a project to provide a clearer guideline for SME IAPs. This project, titled "Assessment Framework Development of the Daegu Initiative on SME IAP," had two main objectives:

- Provide a clearer idea on what each element in the Daegu Initiative (first cycle) means, and what is expected of member economies when submitting their IAP reports and self-assessment reports;
- Give an idea on what the working group report in 2010 may look like.

For the first objective, for each of the seven areas and their subordinate elements in the first cycle of the Daegu Initiative, the project research team would provide concrete

'checklist items' which the member economies should use in the self-assessment report, and which can be used to measure progress on IAPs. A member economy, when submitting their first self-assessment report in 2010, may use the assessment framework to indicate the current state of its SME innovation policies.

After the project research team settles on the appropriate checklist items, a report would be written on why these 'checklist items' were selected, as well as recommendations for modifications of the Daegu Initiative for the upcoming second cycle (if needed). This report would be published around the end of 2008, and will be publicly and widely distributed. The APEC SME Innovation Center hopes that this report would be used by the member economies to draft future IAP reports.

For the second objective, the research team would draft a 'trial' version of the working group final report which is due in 2010. This report would be based on the areas of the Daegu Initiative, the current elements, and the checklist items developed by the research team, using (mostly) the data contained in the IAP reports submitted so far by the member economies. This report is intended only as a 'trial run', and a template for the 2010 report. Thus, this report would be distributed only on a restricted basis.

From March, 2008, the members of the research team have tried to draft relevant checklist items for each element in each of the areas of the Daegu Initiative. Part III examines the checklist items for each area of the Daegu Initiative. The checklist items, as well as a short suggestion on how to write the self-assessment report using the checklist items, are provided in Part V. While the ideas for each checklist item originated with the research team, the team tried to base the checklist items on current discussions in APEC SMEWG and other APEC fora, as well as current academic and policy research on the relevant area.

The research team has sought outside advice and guidance as well. On 10-11 July 2008, nineteen participants from six member economies participated in a 'Seminar on Policy Assessment and Best Practices for SME Innovation' hosted by the APEC SME Innovation Center. In that seminar, a preliminary version of the assessment framework was distributed, and comments were received. Based on the comments and further discussion within the research team, some aspects of the assessment framework were modified. The list of modified checklist items were included in the documents for the SMEWG meeting in Chiclayo, Peru, held during 23-25 August 2008. The finalized checklist items in various chapters of Part III reflect the comments received between August and October of 2008.

During the course of research and discussion on choosing relevant checklist items, the research team found that some current elements of the Daegu Initiative were repeated in different areas, and sometimes there were undesirable overlapping coverage of elements in different areas. The team noted that the Daegu Initiative allows changes in areas, elements and checklist items at the end of each five year cycle. Thus, in the chapters of Part III, as well as in Part IV, the research team made recommendations on how areas, elements and checklist items may be re-organized so that redundancies may be reduced, and concepts of each element can be made clearer. These

recommendations are purely suggestive, but we hope that the SMEWG will consider them when deciding how the areas and elements of the Daegu Initiative may be modified for the second five-year cycle.

What is an Innovative SME?

The original Daegu Initiative document, as well as the elements and the checklist items, refer to 'innovative SMEs.' We should clarify what we mean by 'innovative SMEs.' Obviously, innovative SME means SME which has good capacity for innovation. Some APEC member economies have a formal legal definition of innovative SMEs, and use that definition to target various policies specifically to those innovative SMEs. Other APEC member economies do not have a formal definition of innovative SMEs, but rather formulate its policies so that SMEs with innovative capacities can take advantage of those polices and programs; in effect allowing innovative SMEs to self-select themselves. There does not seem to be any *a priori* reasons why one method is superior, or why one method should be preferred over the other. Thus, the Daegu Initiative is open to both approaches.

Further, member economies often differ on their definition of 'innovation.' For some economies, innovation implies technical innovation, which pushes beyond the currently available global technology – to discover and develop new technology. For some economies, managerial, operational and logistic innovations may be as important as technological innovation. For other economies, innovation may imply catching up to global standards in technology, management, operation, logistics and so on. Because of the differing definitions and approaches, the Daegu Initiative and the self-assessment report framework tries to be open to the differing definitions and approaches.

In Area E, we ask specifically whether the member economy has a formal legal definition of an 'innovative SME' or whether the economy has an informal definition of 'innovative SME' which it uses to formulate and target policies. For the economies, which have a definition, when responding to questions about innovative SMEs in various areas, elements and checklist items, they should limit the responses to those dealing directly with 'innovative SMEs' as defined. Please note that some questions deal only with innovative SMEs and some questions deal with SMEs generally.

If a member economy does not have a legal or informal definition of innovative SMEs, then when a question asks a response about innovative SMEs, these economies should report their policies which are effectively aimed at SMEs with large capacity for innovation. In other words, when the question asks a response about 'innovative SMEs,' these economies should not report policies and measures aimed at all SMEs but rather designed to assist a sub-set of SMEs which has large potential for innovation.

Part III: Areas of the Daegu Initiative

The next seven chapters look at each of the areas and elements of the first cycle of the Daegu Initiative. Each chapter examines one area of the Daegu Initiative. Chapter 4 examines area A: Developing Human Resources and Technology through Linkage between Industry and Educational and Research Institutions; Chapter 5 examines area B: Access to Specialist Assistance and Advice; Chapter 6 examines area C: Enhancing Availability of Capital to Innovative SMEs; Chapter 7 examines area D: Networking and Clustering for Innovative SMEs; Chapter 8 examines area E: Establishing Appropriate Legal and Regulatory Structure; Chapter 9 examines area F: Establishing a Market Consistent Economic Environment; and Chapter 10 examines area G: Developing Methodologies for Effectively Measuring Progress in the Implementation of Innovation Programs for SMEs.

In each chapter, the research team examined some of the current theoretical arguments and policy discussions dealing with each area. Then, element by element, the research team suggested checklist items that APEC member economies can use to create the self-assessment reports in 2010. The member economies can also use these checklist items when submitting or revising their IAPs.

It should be remembered that these checklist items are suggested guidelines. SMEWG, as well as individual member economies may choose to use other items when submitting their self-assessment reports. However, the research team believes that these checklist items are a comprehensive and balanced self-assessment tools that can be used to measure the state and the progress of individual APEC member economies' SME innovation policies.

Chapter 4: Area A: Developing Human Resources and Technology through Linkage between Industry and Educational and Research Institutions

1. Introduction: Education and Research: The Two Faces of Development Engine

Background

The importance of manpower in enhancing SME competitiveness has been addressed innumerous times, for entrepreneurial spirit and skilled personnel constitute the backbone of innovative SMEs. As governments recognize its importance, various versions of promoting plans for SMEs include detailed action plans for supplying high quality craftsmen and technicians. In addition to the skill component of manpower, new technology based firms (NTBFs) demand highly educated researchers to cope with the challenging task of science-based innovation. As the barrier between science and technology becomes obscure, and the fast changing technological environment causes research-intensive start-up companies to ally themselves with cutting-edge research organizations. On the one hand, emerging technologies like information and communication technology (ICT) and biotechnology (BT) create vast technological opportunities for SMEs, but on the other hand, they increase the demands for degree holders from higher education as well as the demands for research collaboration. The relationship between universities and industry extends to non-educational fields such as contract research, testing, consulting, and venturing. This is especially relevant to countries with university based national innovation system (e.g. USA)[6]. Along with the evolution of the universities, technology transfer from public research institutes to industrial firms has been also reinforced.

In Daegu Initiative report, the rationale for cooperation between industry, educational and research institutions is clearly stated - that the cooperation is imperative for the development of human resources and technology.

> "Human resources and technology development are the raw material for innovation. Since educational institutions are responsible for human resource development, and research institutions are responsible for research and development of science and technology, it is important to facilitate cooperation between industry and educational and research institutions**."**

The emphasis on constructing the linkages to achieve sustainable technology development can be also found in APEC Science and Technology Ministerial statements presented in <Box 4-1>.

<Box 4-1> APEC Ministerial Statement on Promoting Linkages

[6] To compare different systems, see Neson, R. (1993).

In a parallel section to APEC SPAN, at the third APEC Ministers' Conference on Regional Science and Technology Cooperation (1998), Ministers call upon APEC fora following the draft APEC Agenda for Science and Technology Industry Cooperation into the 21 st Century to conduct analyses to implement additional action on human resources issues and to identify key skills necessary skills for innovation and finally to promote the linkages among universities, public science agencies and industries to enhance the development of technologies

<Source> Source: Ministerial statements, http://www.apec.org/apec/ministerial_statements/sectoral_ministerial/science___technology/1998_science.html

Daegu Initiative emphasizes the linkages between three functions: education, research and commercial activities. In retrospect, the most prominent content of the linkage has been education and training, but recently the weight is swinging toward research collaboration. Daegu Initiative recognizes the trends, and the basic elements of Daegu Initiative contain R&D programs and patent-related technology transfers from public institutes and universities.

Academic View on the Criteria

The university-industry linkage has been intensively explored and explained in innovation studies (Aldo 1999), and the majority of case studies focuses on the US research universities. Although Daegu Initiative statement does not specify the recent rise of research universities, the performance of American universities in terms of taking advantage of their research results prompted the wide spread establishment of technology liaison offices (TLOs) over the world. The Bayh-Dole Act in 1980, which gave US universities, small businesses and non-profit organizations intellectual property control of their inventions arising from federal government-funded research, is now benchmarked by many advanced countries of the world. However, the burgeoning TLOs do not guarantee the successful commercialization of public research, and the Act itself cannot fully be accountable for the virtuous circle from linkage (Mowery, 2004). The role of government may not so simple if the effectiveness under the diverse innovation system to be taken into consideration. Taiwan successfully exploited its public research institutes, ITRI, to stimulate creation of high-technology venture firms, which demonstrates that there are diverse ways to stimulate entrepreneurship.

The government role in facilitating the university-industry collaboration is critical (Etzkowitz and Leydesdorff 1997). As academics lean towards theoretical and “blue ocean” research, governments have to provide incentives to professors to promote more practical research. Hence, the public institution may play catalytic role in building university-industry relationship (Fritsch and Schwirten 1999). However, in certain areas, university can be directly linked with industries without any intermediaries. Recent performance of university spin-off firms in the new technology fields highlights much more direct knowledge transfer from university to industry. It is also worthwhile to note

that the characteristics of knowledge may affect the required level of government efforts. Science-based firms tend to differ from engineering based firms (Autio 1997), and the government role to stimulate academic-entrepreneurs in science-intensive technology area could be much more critical for creating science-based firms.

The cooperation between different types of innovative organizations may work as the major instrument to facilitate knowledge diffusion. There is no universal process for whole technological field. Many studies aimed to find technology specific factor that determines the diffusion rate of knowledge. The implication from those studies is such that different patterns of collaboration can be justified as there are different technological fields (Faulkner and Senker 1994).

The incentive to cooperate through R&D collaboration can also be explained with game theory (Vonortas 1997). Vonortas argues that technology and market conditions must be considered in designing productive collaboration. Empirical studies further reveal that the content of university-industry research collaboration in SMEs differs from that of large firms (Santoro and Chakrabarti 2002). In sum, the small firm size, technology and market must be taken into consideration for R&D collaboration and the effective implementation of the Daegu Initiative.

Policy Documents

Stimulating entrepreneurship is endorsed in APEC documents and OECD policy research publications. The leading role of entrepreneurs has been highlighted through the Schumpeterian perspective. Recognizing Schumpeter's sage perspective, APEC SPAN proclaims specific intention to foster young entrepreneurs and the ministers of member economies proposed the creation of young entrepreneur award which is now under implementation in several member economies.

<Box 4-2> Promoting Entrepreneurship

In the previous action plan - APEC SPAN 1998 - strongly endorses the promotion of young entrepreneurs.

Ministers emphasized that SPAN, besides focusing on enterprise development, should also promote the development of new entrepreneurs including *technopreneurs*. In this regard, there is a need to demarcate between enterprise and entrepreneurial development.

Ministers took note of the report of the Young Entrepreneurs' Organisation (YEO) and their proposal to create the Young Entrepreneur Business Award and the formation of the Young Entrepreneurs' Advisory Council (YEAC).

OECD (2005) published 'OECD SME Outlook.' The report pays attention to OECD countries' efforts to stimulate entrepreneurship and quotes recent studies revealing the importance of life-long learning to entrepreneurship. The OECD (2005) recommendations reflect the urgent needs to reshuffle the formal education to stimulate

entrepreneurship. The suggested guideline includes 1) formal education system that embraces entrepreneurship courses; 2) dedicated funding for teaching entrepreneurship; 3) utilizing different government bodies for supporting teaching and training entrepreneurship; and 4) developing indicator to measure the activities. The diverse situations of member economies must be fully considered seriously. The OECD report explicitly acknowledge no-panacea situation for educating entrepreneurship.

The traditional science and engineering education on theories has withered and the mixed education that puts greater weights on the field research is prospering. The cooperative efforts between SMEs and formal educational institutes may foster the supply of high-skilled personnel who can be allocated to the industrial field without too much re-education. Some post-graduate students involved in university-industry link R&D programs later find jobs in related firms. Thus, human resource development of higher education usually coincides with research activities. In this vein, UK has restructured its government structure to integrate higher education and research.

APEC ECOTECH Action Plan (EAP) implemented on-line education program in association with private ICT firms. APEC EAP explores common policy concepts of Osaka Action Agenda (OAA). OAA delineates human resources development (HRD) and industrial science and technology as two critical areas of SME development. APEC has identified three overarching themes in Human Resource Development (HRD), and eight priority action areas.

<Box 4-3> Human Resources Development: Common Policy Concepts, OAA

4. HUMAN RESOURCES DEVELOPMENT COMMON POLICY CONCEPTS

The people of the Asia-Pacific region are its most important asset. The human resources needs of the region are both expanding and diversifying in tandem with its growth and dynamism. In responding to the human resources challenges in the region, APEC has defined three overarching themes underlying work in the HRD Working Group:

- Education;
- Labor and Social Protection; and
- Capacity Building.

Uniting these themes are eight priority action areas:

i) providing a quality basic education;
ii) analyzing the regional labor market to allow sound forecasting of trends and needs in HRD;
iii) increasing the supply and enhancing the quality of managers, entrepreneurs, scientists and educators/trainers;
iv) reducing skills deficiencies and unemployment by designing training programs for applications at all stages of a person's working life;
v) improving the quality of curricula, teaching methods and instructional materials for managers and other workers;
vi) increasing opportunities for people seeking to gain skills; and
vii) preparing organizations and individuals to remain productive in the face of rapid economic and technological changes; as stated in the *Declaration on a*

viii)	*Human Resources Development Framework*, and further engage in: promoting HRD toward the liberalization and facilitation of trade and investment

<Source> OAA (Osaka Action Agenda)

OAA clearly states that facilitating joint research project is a key principle to improve human resource capability. In addition, exchanging researchers and improving technical information flow are suggested for effective collaboration. It also states detailed activities, which can be carried out concurrently and jointly with activities of industrial science and technology policies. The bold characters in <Box 4-5> clearly indicate these points.

<Box 4-5> Industrial Science and Technology: Common Policy Concepts, OAA

5. INDUSTRIAL SCIENCE AND TECHNOLOGY

COMMON POLICY CONCEPTS

Improved levels of industrial science and technology will enhance economic growth, quality of life, environmental protection and development of a well-balanced industrial structure. APEC economies will improve the IS&T capabilities of each economy by recognizing eight non-binding principles for effective collaboration and by setting priority on the following:

a. improving researcher exchange and human resources development;
b. improving the flows of technological information and technology;
c. facilitating **joint research projects**;
d. improving the transparency of regulatory frameworks; and
e. contributing to sustainable development.

JOINT ACTIVITIES / DIALOGUE

APEC economies will, inter-alia:

a. strengthen APEC cooperation in key technologies through collaborative R&D initiatives, technology road mapping, technology foresight, improvements in the transparency of 27 regulatory frameworks, and other joint activities. Key technologies would include advanced materials, nanotechnologies, industrial biotechnology, environmental technologies, information and communication technologies;
b. **connect research and innovation in APEC economies through strengthening collaboration between government, industry (especially SMEs)** and the research community; technology diffusion initiatives especially the transition of emerging technologies to new industries; and enhancing information flows on science and technology among member economies, including through ASTWeb;
c. build human capacity for S&T for the New Economy through S&T awareness in secondary schools; training/skills development initiatives in critical areas of industrial S&T, environment, and health; researcher exchanges/cooperation; fostering partnerships between educational institutions and industry; and adoption of distance learning technologies;
d. help ensure the prevention and control of infectious ….(abbreviated)
e. meet environmental challenges through science, technology and innovation within a framework of sustainable industrial development. …(abbreviated)
f. undertake dialogue on Industrial Science and Technology policies across APEC economies

related to S&T policy, technology development and diffusion, networking and collaboration, gender and the scientific underpinnings of regulations and standards.

<Source> OAA (Osaka Action Agenda)

APEC has highlighted HRD issues in relation to strengthening competitiveness of SMEs, and major obstacles were identified. SMEs' innovation efforts have been frequently discouraged by their inabilities to recruit talented scientists. Employees at SMEs are exposed to unstable work environment, and it is plausible that SMEs may face difficulty to attract those talented scientists. For this purpose, government policy encourages entrepreneurial sprits among graduate students. In fact, financial incentives are given to the students who start own business during the course in some member economies, and indirect subsidies to the researchers of SMEs are considered in certain cases. However, Human Resources Development (HRD) for SMEs needs a comprehensive approach. The incentive scheme in the society, entrepreneurial atmosphere, and proper educational institutions are major factors that enable SME's recruitment of high caliber talents.

At the same time, the APEC Science and Technology (S&T) Ministers at the third conference also recognized the importance of private sector.[7] The APEC Industrial Science and Technology Working Group has been central in disseminating policy agenda of building public and private partnerships. A group of academic researchers emphasized the intertwined cooperation between university-industry-government – the 'Triple-Helix.' The public private partnership (PPP) issue is closely linked with Triple Helix and well documented in OECD reports[8].

Checklist for the Elements of Area A:

Based on previous literature reviews and theoretical backgrounds of the Daegu Initiatives, Following sections tackle the essence of Daegu Initiative elements. Elements of promoting policy that facilitate technological collaboration and fostering innovative human resources in SMEs are presented in the Daegu Initiative. They are 1) joint research and development among university-industry-institutes; 2) Patent or technology transfer; 3) Utilization of human resources and research facilities in universities and institutes; 4) Incentives to attract young talents to SMEs; and 5) Supply of human resources that meet the needs of SMEs. In the next sections, for use in the self-evaluation report, we provide checklist items for each element.

2. Joint Research and Development among University-Industry-Institutes

The importance of joint R&D has been highlighted in various research programs studying emerging technology. Pre-competition stage research collaboration could

[7] The Ministerial Statement contains following paragraph. "Ministers encourage APEC fora, particularly the ISTWG, to continue to work with, and systematically engage, the private sector to participate in the policy dialogue"

[8] OECD, STI - Science, Technology Industry Review, Volume 1998, Number 2, February 1999 , pp. 1-258(258)

entice more active participation from industrial stakeholders, but the risk embedded in the early stage research and lack of credible institutions may obstruct its initiation (Sakakibara 1997; Sakakibara 2001). As member economies realized this 'market failure,' they have set up R&D programs that contribute to creation and diffusion of technology.

Collaborative R&D programs, where a firm participates as a prime contractor or adjunct, exhibit the characteristics of public-private partnership (OECD 1997). The increasing pressure to make public research more effective to support industrial research created diffusion-oriented national collaborative research programs. From planning to evaluation, the active participation from the industrial sector is visible. For example, LINK, a flagship UK R&D program that links public and private research, has been restructured under the close consultation with industrial committee members of the Technology Strategy Board. Therefore, regardless whether they are initiated by industry or government, the collaborative R&D program tends to be more 'demand oriented.'

APEC experts emphasize the importance of the linkages and the facilitating role of the government. The workshop on 'intermediary mechanism' proposes that the non-profit organizations facilitated on government initiatives may act enzyme for triple-helix.[9] Thus, the first checklist item is:

A-1 *Are there any targeted research collaboration programs that involve SMEs as designated participants of research project?*

The R&D research program that aimed to increase the interaction between SMEs and universities / pubic research institutes is strongly recommended in OECD publication (2005). The German econometric analysis on research program revealed that 1 euro of public R&D investment may induce 1.5-2.0 euro of private R&D, and the inducing effect can be stronger in the case of SMEs (Fier, 2002; cited in OECD 2005).

As the small size of firm may restrict internal research (due to shortage of financial resources) and hamper the participation of SMEs in national R&D programs, a group of specialists from various SMEs or a trade association of SMEs should be allowed in SME oriented R&D programs. Korean KOSBIR program is a targeted research program for SMEs, but it does not specify 'collaborative research'. Industry-university-government research institutes (GRI) are triad of research organizations and government policy aims to increase collaborative research between them. Within KOSBIR framework, Korean government implement the industry-university-GRI research program that specify SMEs as the industry partners. The overall scheme of these programs are explained in <Box 4-6>.

<Box 4-6> Korean KOSBIR Program and Korean Industry-University Collaborative Research Program

KOSBIR Program involves SME quotas set by major ministries that operate R&D

[9] 2004/SOMI/028

program and Collaborative R&D Programs

Benchmarking the US SBIR program, Korea has mandated that 15 R&D related government departments and agencies allocate a portion of their R&D projects toward SMEs. Some of them have internal regulation that the applicants must seek SMEs as collaborative research partners. These requirements increase the probability for project managers of government research institutes/ universities to seek SME partners.

In addition, Small and Medium Business Administration (SMBA) of Korea also devised a dedicated R&D program that facilitates R&D cooperation between SMEs and universities. Special laboratories that have linkage to SMEs are set up inside universities with the subsidies from SMBA.

Research network of SMEs can be established as a legal entity that can pursue profit. This organization consists of mainly SMEs who can apply to SME specific R&D programs.

Korean Industry-University-GRI Collaborative Research Program: A targeted collaborative research programs for SMEs

The Korean SMBA implements SME targeted collaborative research programs. 53 billion Korean won has been invested in such programs in 2007. In addition to this program, there exists a separate research program that facilitates SMEs establishing a research department. The latter program had a budget of 20 billion Korean won in 2007.

For answering most of the questions in the checklist items, we suggest a 5 point system. When a checklist item asks whether a member economy has a certain program, measure, or legislation, the member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the provisions are to be introduced. If the economy submits 3, it should explain why the economy feels that no such provisions are necessary. If the economy submits 4, it should explain why the economy considers the provisions to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a 'best practice report' which includes details on why the processes were needed, what the goals were, how the process works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

Some questions ask for more specific response, such as statistics. For those questions, member economies should follow the instructions specified in the checklist

item. However, if no other specific criteria are given, the member economy should answer the questions in the checklist items using the 5 point system.

For the checklist item A-1, the member economy should answer the question in the checklist item, using the 5 point system.

The next checklist item asks for some basic statistics on R&D investment flows.

A-2. *Basic statistics on R&D investment flows:*

Each member economy should report the following statistics if they are available. It would be desirable if industry statistics can be divided into two categories: large firms and SMEs.

1) The level of R&D investment performed by university that is financed by industry;
2) The level of R&D investment performed by university that is financed by government;
3) The level of R&D investment performed by government research institutes that is financed by industry;
4) The level of R&D investment performed by industry that is financed by government.

Member economies can reference the OECD database to obtain these statistics. Non-OECD members may need to collect and build R&D statistics database to improve the understanding on innovation system. Member economies are advised to refer to the 'Frascati Manual of OECD'.

3. Patent or Technology Transfer

Technology transfer can only be efficient when the transferred medium is clearly defined. Patent is considered an explicit form of technological knowledge. Therefore, patent and technology transfer issues are interrelated. Unlike tacit knowledge, patent enables the creation and operation of a technology market, and the loyalty fee is frequently quoted as proxy for the price of a technology from an active technology market. However, ublic research may endow patents with or without loyalties. In addition, prototypes and know-how can be transferred without involving patents. The effective technology transfer needs both explicit and implicit form of knowledge sharing. Therefore, technology transfer to SMEs that takes place without involving patents should also be promoted as a SME innovation policy.

The Daegu Initiative has a separate criterion on 'Establishing appropriate legal and regulatory structures', where legal process is tackled in detail. As for the current element, the major concern will be placed mainly on the intermediating knowledge flow. However, it should be noted that the technology transfer policies must give due consideration to keeping consistency with legal structure, especially dealing with the

intellectual property rights laws.

Given the importance of patents in technology markets, the first checklist item in this sub-chapter looks at the proportion of patents owned by SMEs.

A-3. *What proportion of issued patents is owned by SMEs?*

In recent development of new technology based firms (NTBFs), Intellectual Property Rights (IPR) helps to secure funding, to clarify knowledge goods (licensing out), and to provide incentives and encouragements of entrepreneurship. The sheer number of patents and their worth may reflect the strength of SMEs' intellectual assets. This statistics needs to be compared with SME's share of value-added in national economy to measure SME activity correctly.

Given the importance of patents, the next checklist item asks if government provides incentives to SMEs for patent applications.

A-4 *Does government provide special incentives or institutional support to SMEs for patent application?*

Some member economies may have implemented a specific program to subsidize the cost of SME patent application. SMEs may not realize the importance of protecting intellectual property and may lose control of the technology they have developed. Due to increased licensing activities globally, it is increasingly common to provide information and other public services on patenting activities. Member economies should report whether they provide such support according to the 5 point system described above.

A-5 *Are there mechanisms to promote technology transfer from public research organizations to SMEs?Is there any incentive given to public organizations for licensing publicly own patents? - What proportion of public / university patents are licensed to SMEs?*

The loyalties created by technology transfer (universities and public research institutes) may measure the overall level of technology transfer. An example of institutional framework for technology transfer is technology licensing office (TLO). The checklist item A-5 asks, in effect, whether there is an intermediate organization to handle technology transfers, such as an agency to help SMEs participate in the technology market. Does government intentionally encourage setting up technology licensing office in universities or government research institutes; or does government agency mediate technology transfer to help SME exploit public patents? Member economies should report their answer according to the 5 point system.

Auxiliary quantitative information needs to be provided. If available, member economies should, report the following relevant statistics: the percentage of SME associated technology transfer (against overall technology transfer from public sector) or the portion of SME patents co-assigned with public research institutes or universities.

Other sub-element candidates

Technology transfer from innovative SMEs to large companies may involve excessive legal costs, and the SMEs' lack of financial resources could entail legal difficulties, and reduce the number and effectiveness of technology transfers. In certain member economies, publicly supported legal service may help SMEs to close fair deals in licensing agreements.

4. Utilization of Human Resources and Research Facilities in Universities and Institutes

The element 3, 'Patent or technology transfer' notes the technology transfer through formal carriers[10]. However, informal consulting service by university professors also constitutes invisible but important element of technology transfer. The utilization of human resources can be maximized when professors and researchers may have temporal leave to consult SMEs or create their own firms. Post-graduate researchers also can study and participate in R&D program for SMEs. In the next checklist item, government supports for these activities are to be reported.

It is also possible to design special training programs within universities to upgrade the skills of engineers. In general, industry provides scholarship or contributes funds, a type of subsidy, to universities. Vocational colleges and universities may modify their curriculum so that it caters to the donor firms. However, these customized training programs are mainly devised for large firms, since donors are most likely to be large firms. In order to support specialized curriculum suited for SMEs, the government may subsidize or create education programs for SME employees. OECD (2005) compiled the statistics on participation rate of employee-sponsored vocational training program according to different firm size, the result from each country unanimously indicates that SME employees participate less in the training programs. The lack of sponsorship from SMEs, due to weak financial resources, is probably responsible for the lower participation rate. Any government action to compensate such weaknesses of SMEs in training employees should be reported in the next checklist item as well.

A-6 *Are there policies that enable SMEs to consult scientists and engineers in public institutes?*

SMEs depend on external resources for technological innovation, but it also needs management wisdom to develop technological strength into commercial achievement. For this purpose, some governments devise policy programs to help SMEs to receive consulting in both technology and management fields. An example is IRAP-ITA program of Canada which is explained in <Box 4-9>.

[10] Some member economies lack legal and organizational support to enable university's ownership of IPR. In the case, the statistics on patents may not present proper level of technology transfer.

<Box 4-9> Canadian IRAP – Industrial Technology Advisor (ITA) Program

SMEs may suffer from lack of both technological knowledge and business sage. Canada provides matching funds for SMEs to hire certified consultants. Many of them reside in public institutes. The program can cover 50% of cost and up to 20,000 Canadian dollars per individual consulting project. The program is evaluated as successful due to the construction of hybrid team (of engineers and management consultants) and using demand oriented approach in deciding whether and what to tackle through consulting

The next checklist item asks whether government policies run programs which allow SMEs to get access to research equipment and facilities in public research institutes and universities.

A-7 Are there policies that stimulate public research institutes (including universities) that open research facilities to the private sector? Does government provide additional incentives if the users are SMEs?

Expensive scientific instruments and equipments can be accessed through government sponsored programs, which utilize equipment in public research institutes. Due to maintenance concerns, the facilities may not openly accessible, so the government may need to issue a regulation to open the facility to SMEs and public subsidy may need to be given to cover increased maintenance costs.

5. Incentives to Attract Young Talents to SMEs

Schumpeter envisaged entrepreneurship as the most critical pillar that supports dynamic capitalism. However, the brain drain of developing countries creates a vicious circle in developing countries as the most talented entrepreneurs, scientists and technicians leave the country and retards innovation, which further encourages the brain drain. However, if these expatriates return, and if there are sufficient number of talented young graduates, they may change the situation. The current element has two checklist items.

A-8 Are there policies to promote and teach students entrepreneurial spirits, and awards young entrepreneurs?

In 1998, at the fifth APEC Small and Medium Enterprise Ministerial Meeting (SME-MM), the Ministers proposed an international award “Young Entrepreneur Business Award” and the formation of the Young Entrepreneurs' Advisory Council (YEAC). Such activities fall into this checklist item. Member economies can report such activities and policies using the 5 point system.

OECD (2001) found a positive relationship between firm productivity and

entrepreneurial activities in the study of seven member countries. This is particularly true when the new start-ups engage in high-technology industry and exhibit high productivity.

A-9 Are there policies that stimulate SMEs to hire postgraduate science / engineering degree holders to increase the technological competence of SMEs?

As discussed above, SMEs face difficulty in hiring postgraduates. Some member economies started policies that subsidize the postgraduates who work for SMEs directly. Member economies that have specific policies aimed for subsidizing researchers in SMEs should report the relevant programs.

6. Supply of Human Resources that Meet the Needs of SMEs

At the inauguration of SME-MM, Ministers discussed a range of initiatives, including human resource development (e.g. APEC Center for Technology Exchange and Training for SMEs). <Box 4-10> is an excerpt from the SME-MM, which indicates that government needs to implement human resource development programs for both start-ups and existing SMEs.

<Box 4-10> SME Ministerial Statement on Human Capacity Building

> In 2002, at the ninth SME Ministerial Meeting (SME-MM), when discussing human capacity building issue, the Ministers called for "the promotion of programs to create competitive human resources for start-up businesses that foster the creation of new SMEs and consolidate the permanence of existing ones".

This statement indicates the importance of dedicated training centers to help SMEs absorb frontier knowledge. The supply of manpower can be achieved either by fresh graduates or by re-educating the current employees of SMEs.

A-10 Are there dedicated education programs that are customized to SME requests? Are the programs operated at the level of a separate department or at the level of additional courses? Does government play roles in the modification of curriculum?

Government may get involved directly in the education market to complement the existing demands from SMEs. As the manpower quality is critical in the success of SME innovation, multi-faceted talent is required for graduates. The education curriculum can be specially designed to foster such multi-faceted talent. The reshuffling of educational courses can lead to a creation of separate administrative units in higher education. Such dedicated higher education program in the case of Japan is presented in <Box 4-11>.

<Box 4-11> Japan's SME University

Japan established a dedicated university that caters for SME demand. There are many member economies that promote tailored courses for SMEs, but establishing a new institution is rarely found. Japanese government has installed a publicly funded university because specifically aims for providing entrepreneurs and employees for SME.

OECD (2005) identifies that life-long learning must get priority in HRD policy for SMEs. The continuous education scheme cannot be easily achieved without government subsidy. The policy can be implemented either by subsidizing the education institutes or the sponsoring SME employees. The next checklist item asks whether the member economy has such training courses.

A-11 Are there government sponsored intern programs or training programs that train employees to upgrade skills? (If so, are they targeted for SMEs?)

The checklist item should be answered according to the 5 point system, and member economies should specify whether SMEs are major target of the programs.

7. Others

Contract research, R&D grant (subsidy) and R&D tax benefit are major government tools to stimulate the development of technology. Except for the tax benefit, the other two entail interaction between the government and the recipients through national R&D programs. National R&D programs should be strategically directed and R&D tax benefit should not be controlled for specific objectives. The tax benefit will be dealt in area C in Chapter 6, and will not be seriously discussed here. However, if there are any hybrid programs, which include tax benefits as well as R&D grants, and is not reported in Area C, we recommended that those programs be noted under this element of self-assessment of the report.

8. Summary

From the discussion on the elements in this area, we can extract a checklist for the diagnoses of policy integrity. The element encompasses R&D programs, infrastructure for technology transfer, increasing the public supply of knowledge through the sharing of assets, entrepreneurship, and education / training programs. However, the fourth element on attracting young talent may be too specific as an element, so in the second cycle, the contents of that element should be extended to include 'creating SMEs and supporting start-ups.' There is also a concern that Area B 'Access to Specialist Assistance and Advice' has overlapping elements with the elements of this area, specifically the element 'Utilization of human resources and research facilities in universities and institutes.' Because human resources (e.g. professors and researchers)

in universities can provide special advice to SMEs, especially about technology related issues, in the second round, policy programs on technology related advices (from public institutions) should be reported in this area; and non-technical advice should be dealt in Area B.

It is important to include R&D tax benefit in assessing the actual benefits from government policies for innovative SMEs. The existence of R&D tax benefits is currently included in area C. It would be profitable if diverse government supports (both R&D programs and R&D tax benefits) for SMEs research can be compared in the same area.

In addition, the current coverage of elements may not be sufficient enough to cover all of government efforts on promotion of SME R&D. Although cooperative research program do play an increasingly important role for innovative SMEs, the non-cooperative research programs also contribute greatly to the innovative capacity of SMEs. The non-cooperative aspect of R&D is currently not well represented is Daegu Initiative and must be augmented in the future cycles of the Daegu Initiative. In addition, the element "research equipment and human resources search system" in area B overlaps with "utilization of human resources and research facilities in universities and institutes" in area A. It would be better if these two elements were integrated into one. The suggested changes for elements and checklist items for the second cycle of the Daegu Initiative are presented in <Table 4-1>.

<Table 4-1> Suggestions for the Second Round of the Daegu Initiative: Area A: Developing Human Resources and Technology through Linkage between Industry and Educational and Research Institutions

Element	Definition	Sub-element
1. R&D programs dedicated for SMEs and joint research and development among university-industry-institutes	- the triangular research partnership that involves SMEs - how much public financial resources are invested in collaborative research projects with SME involvement - special R&D program for SMEs	*1. Are there any targeted research collaboration programs that involve SMEs as designated participants of research projects?*
		2. The amount and percentage of government R&D programs that involves SMEs as primary recipients?
		3. Does your government have research programs specifically aimed at building innovative capability of SMEs?
2. Technology transfer	- Whether government provide special measures for transferring publicly owned intellectual properties? - What is the government role for supporting SMEs' acquisition of	*4. What kind of technology transfer organizations have been set up by the government (TLO etc)?*
		5. Is there any incentive given to public organizations for licensing their patents?
		6. What proportion of patents are licensed to SMEs?

	technological assets	
3. Utilization of human resources and research facilities in universities and institutes	- Do SMEs access research facilities and experts in public organization easily?	*7. Are there policies that encourage SME to consult scientists and engineers in public institutes (including universities)?*
		8. Does your government maintain an information system for SMEs' which helps them find the right partners in universities and public institutes?
		9. Are there policies that stimulate public research institutes (including universities) that open research facilities to the private sector? - Is additional incentive provided if the users are SMEs?
4. Incentives to attract young talents to SMEs	- Do young graduates consider SMEs as attractive option for future career? If not government provides additional incentives for the recruitment?	*10. Are there policies to promote entrepreneurial spirit (e.g. teaching students how to start businesses and / or awards young entrepreneurs)?*
		11. Are there policies that stimulate SMEs to hire science / engineering postgraduate degree holders to increase the technological competences of SMEs?
5. Supply of human resources that meet the needs of SMEs	- Some SMEs question the effectiveness of formal education system. Government stepped up the efforts to reform education to meet industry needs.	*12. Are there dedicated education programs that are customized to SME requests? Is the program operated at the level of a separate department or at the level of additional courses? Does government play roles in the modification of curriculum?*
		13. Are there government sponsored training programs that train employees to upgrade their skills? (if so, are they targeted for SMEs?)

Note: For the checklist items which ask for statistics, if the specified statistics are not available, the member economy should report statistics, which are as close to the defined terms as possible. For the development of comparable format, a special meeting on APEC statistical issue may be required.

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Chapter 5: Area B: Access to Specialist Assistance and Advice

1. Background

SMEs face barriers in fully exploiting innovative opportunities due to size and capability constraints. One of the most notable constraints is the lack of sufficiently knowledgeable manpower. Large firms can have fully staffed R&D departments, and also have an extensive network of consultants and experts that they can access. However, SMEs often do not have the resources to establish a full R&D department, and may lack access to consultants and experts because they lack extensive knowledge in this area, or lack financial resources to pay for consultancy services. Allowing SMEs to gain easy and inexpensive access to specialist technical and managerial expertise should help them in get their innovative products and services to market more quickly.

Area B of the Daegu Initiative is 'Access to specialist assistance and advice.' The Daegu Initiative emphasizes the area as follows:

> SMEs face barriers in fully exploiting innovative opportunities due to size and capability constraints. Allowing them to gain easy and inexpensive access to specialist technical and managerial expertise should help them in getting their innovative products and services to market more easily.

Thus, the original intent of this area seems to be to establish various policies and mechanisms so that innovative SMEs can gain access to technical and managerial expertise dealing with their innovative products and services. Knowledge required by innovative SMEs need not be limited to technical knowledge. Some of the most useful knowledge can be managerial knowledge.

APEC SMEWG (2006) points out that, in order to analyze problems in business activities and come up with solutions, professional counseling (advisory services) on management techniques, business planning and operation is necessary. However, SMEs cannot afford consulting to address these problems on their own, so government assistance is required.[11] Even though SMEs may have commercially viable ideas, it may have difficulties developing them into fully developed marketable products and services, because they lack capital or human resources. Government can help alleviate some of these difficulties by facilitating and mediating relationships between innovative SMEs and specialists who can help SMEs develop their ideas. Governments may also maintain databases of experts or specialist knowledge and maintain help lines so that innovative SMEs can get access to the database or specialized knowledge.

[11] : APEC SMEWG (2006) p.65

Advising Innovative SMEs

Innovative SMEs need advice at every step of their development. As emphasized by Sheu (2007), SMEs often face many kinds of difficulties when they conduct technology activities, and each activity consumes the limited, inefficient resources owned by SMEs. Therefore it is critical that SMEs leverage outside resources efficiently and turn that activity into business value[12]. Needless to say, one of the most important outside resource is specialist advice. One of the very reasons that collaborations among SMEs, academia and public research institutes are emphasized in literature dealing with SME innovations is that such collaborations facilitate discussions between SMEs and various specialists. Professional infrastructure, which includes professional network, a collection of experts from a business incubator's region, such as CPAs, attorneys, venture capitalists, university professors, technology specialists, and market specialists, who are willing to provide services to incubatees at no cost or at reduced rates, play a crucial part in the success of business incubators. Entrepreneurs with experience can serve as mentors to new entrepreneurs, and advisory boards can act as a 'shadow' board of directors during the early stage of development for innovative SMEs.[13] The existence and quality of such professional infrastructure can greatly influence the success of innovative SMEs. Successful business incubators or clusters will have high quality professional infrastructure nearby to offer advice to newly established innovative SMEs.

The need for specialist advice is most obvious in the area of R&D and technology evaluation. For innovative SMEs, it is not enough that a new technology is novel and groundbreaking. It must also be profitable. Thus, business counseling can play a crucial part in the survival of innovative SMEs. Rhisart, Roberts and Thomas (1999) describe "technology clinics" in use in some EC countries, which are designed to assist the development of innovation and technology in SMEs. The basic idea of the technology clinic is to pre-select a technology issue which is strategically important for a firm, sector or for a region in general, and support SMEs in understanding the issue and implementing responses within their firms[14]. The aim of the clinic is equip SMEs with the appropriate know-how and support from technology experts to allow it to successfully implement new technologies without the need to establish expensive in-house consultancy teams[15]. The clinic links experts from universities and colleges, technology centers and private consultancies with SMEs. Rhisart, Roberts and Thomas (1999) described a technology clinic program which encompasses six objective-based clinics: technology-based clinics which focus on specific technology with the objective of diffusing the specific technology into the SME sector; theme-based clinics which promote awareness of and provide solutions to a specific theme or regulatory change; cutting-edge clinics which are intended to keep SMEs at the forefront of technological development on an international scale; catch-up clinics which assist SMEs reach best international standards; methodology clinics which disseminate good management practices and methodologies into the SME sector; and demonstration clinics which offer

[12] : Sheu (2007) p.43
[13] : Sheu (2007) p.112
[14] : Rhisart, Roberts and Thomas (1999) p.3
[15] : Rhisart, Roberts and Thomas (1999) p.2

demonstrations of new technologies and processes to a selected group of SMEs in a particular sector[16]. The aim of the technology clinic is not necessarily helping individual SMEs solve its particular problems, but rather helping SMEs increase their technological and managerial capacities overall.

However, there may also be need for individualized counseling. Han (2007) points out that micro and small businesses have not kept pace with the human resource capability and the development of new technologies such as Knowledge Systems and Information Communication Technologies in implementing their businesses. Thus, SMEs ay require comprehensive business counseling rather than simple consulting[17].

Such counseling can provide one-on-one management counseling services to new and existing small businesses. Areas of counseling can include business plan development, pre-venture feasibility, marketing, financial planning, cash flow management, loan packaging, record keeping, personnel and training issues, production, and general management for the small business entrepreneur[18]. Han (2007) uses the example of US Small Business Administration (SBA)'s Small Business Development Center Program, and the SCORE Association (Service Corps of Retired Executives) as good examples of programs which provide business counseling to small businesses. However, Han (2007) also warns that the quality of advice offered is important. Low-quality advice, even if it is offered at subsidized cost or at no cost, can do more harm than good.

Access to Specialist Assistance and Advice in the Daegu Initiative

For the Daegu Initiative, in the area of access to specialist assistance and advice, there are six elements: 'Assessing technical challenges facing SMEs,' 'Consulting SMEs' digitalization,' 'Research equipment and human resources search system,' 'Expanding public service benefits,' 'Innovation education for SME employees,' and 'Others.'

In order to more assist innovative SMEs more efficiently, the government should maintain active conversations with innovative SMEs so that it has clear understanding of what the innovative SMEs need. Then the government can act as matchmakers to find the appropriate experts and knowledge that these innovative SMEs need, as well as build more efficient channels of discussion between these specialists and innovative SMEs.

To increase the amount of specialist knowledge available to the innovative SMEs, the government should also improve the education system, and allow more SME employees to get better education – both before they are hired, and afterwards. Governments can also help innovative SMEs by doing their jobs well – that is, to provide good public service. The government may choose to initiate programs that will help SME digitalization so that the innovative SMEs can get better access to available

[16] : Rhisart, Roberts and Thomas (1999) p.3
[17] : Han (2007) p.339
[18] : Han (2007) p.340

knowledge, and give access to research equipment at reasonable cost so that the innovative SMEs can better develop their knowledge.

However, while there may be justification for including these elements in the overall Daegu Initiative, whether some of these elements truly belong in this particular area is questionable. 'Assessing technical challenges facing SMEs' is certainly necessary if a government is to introduce measures to help innovative SMEs or establish programs for innovative SMEs. However, it seems to have little to do with 'access to specialist assistance and advice.' 'Expanding public service benefits' seems to imply measures more comprehensive than providing assistance and advice to innovative SMEs; for example, having the government providing government services (such as implementation of law and regulations) more efficiently.

Further, there seems to be much overlap between these elements and elements in other areas of the Daegu Initiative. For example, the element 'Innovation education for SME employees' seems to overlap much with area A 'Developing Human Resources and Technology through Linkage between Industry and Education and Research Institutions.' Also, while 'Consulting SMEs digitalization' does belong in this area, there are several other areas which contain elements dealing with digitalization, and SME digitalization may be served better if digitalization is established as a separate area in the Daegu Initiative. Thus, the working group may want to consider extensive reconsideration of this area in the second round of the Daegu Initiative.

2. Assessing Technical Challenges Facing SMEs.

When formulating a plan to help SMEs – innovative or not - it is always important to listen to the SMEs so that the policymakers and government agencies know exactly what SMEs require. Listening to the voice of businesses is even more important for plans concerning innovative SMEs. Innovation, by its very nature, is something that is ahead of the norm. Thus, relatively few people are likely to be familiar with innovation that the innovation policy is trying to enhance and encourage. The most up-to-date experts are likely to be people who are actually dealing directly with the innovation in question, namely the SMEs themselves. Thus, the government must pay attention to what the SMEs say. The first checklist item examines whether the economy has regular channels of communication with innovative SMEs. Meetings between innovative SMEs and the government should be held regularly and open to wide variety of topics so that innovative SMEs can offer their opinions and express their needs in a wide range of areas. The meetings should not be held irregularly, since meetings held at the convenience of government agencies are usually limited to the topics the government finds fashionable at the moment.

B-1. *Does your government regularly meet with representatives from innovative SMEs, and discuss their needs?*

Member economies should report 1 if there is no such regular meeting; 2 if there are such regular meetings but it has not been effective, or if such a meeting is to be

introduced in the near future (within 2-3 years); 3 if there is no such regular meetings, but the economy does not believe there is a need for such meetings; 4 if there is such meetings and they are effective; and 5 if there is such meetings and they have been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the meetings are to be introduced. If the economy submits 3, it should explain why the economy feels that no such meetings are necessary. If the economy submits 4, it should explain why the economy considers the meetings to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the meetings were needed, what the goals were, how the meeting works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

3. Consulting SMEs' Digitalization

Throughout this first cycle of the Daegu Initiative, the Initiative has recognized the importance of digitalization for innovative SMEs. While innovative SMEs need not be directly involved with IT industries, digitalization can facilitate diverse range of innovations, including management innovation. Thus, this next checklist item asks the current state of digitalization for the economy. Before the government offers advice on how to digitalize, it should get a picture on what the state of digitalization in its economy. While digitalization does not yet have a clear definition, digitalization does imply that firms have incorporated computers and high-speed Internet in their businesses. Thus, the checklist item asks the state of the economy's broadband connection.

B-2. *Does your economy have broadband connections widely available to your businesses? If not, is there a plan on introducing more broadband connections to businesses?*

Under this checklist item, member economies should report the latest UNCTAD ICT statistics in the following categories:

- Proportion of enterprises using computers
- Proportion of enterprises using the Internet
- Proportion of enterprises with a website
- Proportion of enterprises receiving orders over the Internet
- Proportion of enterprises placing orders over Internet
- Proportion of enterprises accessing the Internet by ISDN, fixed line connection under 2Mbps and over 2Mbps.

For many (but not all) APEC member economies, these figures are available from the UNCTAD website (http://www.unctad.org , click "statistics" on the first page, then click

"statistical databases on line" and then "ICT statistics.") For those economies whose statistics are not available through the UNCTAD website, but does maintain comparable statistics, they may report those statistics instead. For those economies which have statistics for years later than what is available from the UNCTAD website, those economies may report the latest statistics available.

Given that many SMEs lack technical knowledge to digitalize their businesses, advice from experts, government or private, may be useful. The next checklist item asks whether the government of a member economy has programs to offer advice from government or private experts to SMEs on digitalizing their businesses.

B-3 *Does your economy's government offer advice to your SMEs on how best to digitalize their businesses*

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible). Members should also report whether advice is offered at no cost, at subsidized prices, at cost, or for-profit basis.

Digitalization can be an expensive process. Thus, financial assistance and/or tax breaks can be useful for digitalizing SMEs. Thus, the next checklist item asks whether the member economy has a program which offers financial and/or tax assistance for SME digitalization.

B-4. *Does your economy also offer financial and/or tax assistance for SME digitalization?*

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

It should be noted that there may not be a firm theoretical basis for subsidizing SME digitalization, especially if the returns and benefits from SME digitalization are entirely private in nature; that is, there is no benefit to the society at large. A better alternative may be to enhance the availability of capital to those SMEs which believe that they must digitalize, so that if the SME finds it in its interest to digitalize, it can digitalize with private capital without public subsidies. Thus, for the second round, the working group should consider whether this checklist item should be maintained, and whether it may be better to eliminate this checklist item from this area, or add a checklist item on enhancing availability of capital for digitalization in area C instead.

Alternatively, there are several elements in the first round of the Daegu Initiative which deal with digitalization. However, these elements are spread throughout several areas of the Daegu Initiative. For the second round, the working group may consider establishing 'Digitalization of SMEs' as an independent area, and concentrating all elements and checklist items dealing with digitalization in that area.

4. Research Equipment and Human Resources Search System

Technologically innovative SMEs need to stay at the cutting edge of technology. In turn, technical innovation requires continual research and development, as well as constant upgrading of human resources. However, the SMEs may not have the necessary equipment to carry out relevant R&D, and SMEs may lack resources and access to expert consultants who can help SMEs innovate. Thus, this element tries to evaluate how the member economies make R&D equipment as well as information about potential expert consultants available to innovative SMEs.

The first checklist item in this element asks whether the member economy has a program to make R&D equipment available to innovative SMEs. Because SMEs often do not have enough capital to establish a full-scale R&D facility, equipment and lab rental effectively allows several SMEs to share a R&D facility, and spread the cost among several firms. The access to R&D facility and equipment will facilitate innovative SMEs' R&D activities, which may be useful not only for the firms themselves, but for the economy as a whole. <Box 5-1> describes one such program to make R&D equipment available to innovative SMEs.

<Box 5-1> R&D Equipment Rental for Innovative SMEs in Geonggi TechnoPark (Korea)

In Korea, the Ministry of Knowledge Economy (formerly the Ministry of Commerce and Industry), the Small and Medium Business Administration along with provincial governments, with the cooperation of regional universities, have established various programs to allow innovative SMEs to use research equipment and facilities at low cost. One such example is the Geonggi TechnoPark.

Geonggi TechnoPark is an industrial park located in the Geonggi Province. It was established in 1998 under the 'Special Law to Support Industrial Technology Complex.' According to its website (http://ktp.or.kr), "Gyeonggi Technopark(GTP) is home to more than 80 knowledge based high tech enterprises and research institutes. GTP is aimed to assist regional economic growth based on the innovation of high tech industries and revitalize local industries and markets. For doing so, GTP provides an excellent business environment to the technology intensive, knowledge based companies and helps them grow their businesses through the essential infrastructures and the professional know-how which GTP has prepared for them." Also, "As professional high tech business incubator, GTP brings early stage high tech venture enterprises to commercialize their high technologies. Many of them have outstanding technologies but they don't have business know-how and/or capitals with which they could change their technologies into a product to sell. GTP is standing for these small early stage companies to initiate commercializing their abilities."

GTP rents high-cost R&D equipment to small and medium sized venture enterprises, universities and research organizations through its 'sharable equipment' program. According to a Chosun Ilbo article[19], GTP offers 45 types of equipment, worth nearly 5 billion won (worth around 4.5 million US dollars) for rental. For example, equipment for rental include transmission electron microscope which cost US$163,000, and autoclave for sterilization, which cost more than 1 million yen – beyond affordability for many SMEs. Eligible firms or organizations can use many of these equipment for 10,000 won (about US$8 – however, the cost for using the electron microscope is 100,000 won, about US$80).

As noted, Geonggi TechnoPark is not the only organization in Korea which offers such low-cost rental of equipment to SMEs. Some universities have received government funding to obtain expensive equipment, on the condition that they make the equipment available to qualified innovative SMEs at low cost.

B-5. *Does your economy maintain programs for making required equipment available to innovative SMEs?*

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not

[19] Chosun Ilbo, Sept. 17, 2007. Downloadable from: http://www.chosun.com/site/data/html_dir/2007/09/17/2007091701443.html

believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible). Member economies should also report, if possible, whether the equipment rental is offered at no cost, at subsidized prices, at cost, or offered at for-profit basis.

Access to experts' advice and services can be crucial for R&D and innovative breakthroughs. Large firms may be able to hire experts as full-time staff members or full-time consultants, but SMEs may not have that option. To reduce costs, SMEs may need to consult experts on a limited time basis. Thus, SMEs require information on a wide variety of expert consultants who are willing to work with SMEs on a part-time or limited-time basis. However, because SMEs do not have enough manpower or resources, they may not know a wide variety of experts. The government can play a role in solving this potential informational deficiency by maintaining a database of expert consultants who SMEs may consult. The government can make this database available to SMEs at no cost, or at very low cost. The next checklist item asks whether the member economy maintains such a database.

B-6 *Does your economy's government maintain a database of expert consultants who would be useful for innovative SMEs, and can innovative SMEs access that database to find experts that they need?*

Member economies should report 1 if there is no such database; 2 if there is such a database but it has not been effective, or if such a database is to be introduced in the near future (within 2-3 years); 3 if there is no such database, but the economy does not believe there is a need for such a database; 4 if there is such a database and it is effective; and 5 if there is such a database and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the database is to be introduced. If the economy submits 3, it should explain why the economy feels that no such database is necessary. If the economy submits 4, it should explain why the economy considers the database to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the database was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using

objective criteria, if possible).

5. Expanding Public Service Benefits

Governments require all firms, including SMEs, to obey laws and regulations, as well as pay taxes on SMEs. However, it is often surprising how little responsibility the government takes in explaining the law and regulations, and reducing burdens associated with them. Often, even if firms want to obey the laws and regulations, and pay the proper amount of taxes, they can not, because they do not have correct information. Thus, burdens from these laws, regulations and tax codes are often heavier than they need to be, and firms must incur additional costs such as costs for lawyers, consultants, and accountants, as well as additional man-hours to research and fill out paperwork. If governments provide better information and explanation about what they require, much of this burden would disappear; and further, one can argue that it is the responsibility of the government to explain what it requires from the public. It is much easier for the government to inform firms what it requires, rather than the firms trying to guess what the government wants. This burden is especially acute for SMEs since they do not have as much manpower and financial resources available to them as large firms, and just a few misinterpretations of laws and regulations can put their businesses in jeopardy. Thus, there is considerable justification for government to reduce the burdens for SMEs by providing consulting services for SMEs concerning legal or tax issues.

The government can also provide consulting services for SMEs concerning technical and entrepreneurial advice. While much of this role can be fulfilled by the academic and private sector, there can be a role for government as well. For example, because government examines and registers patents, it is the largest clearinghouse for new technology. Thus, government may be in a position to offer not only advice about IPR laws and regulations, but advice about technology itself, as long as it does not conflict with its obligations on protecting IPR. The government also maintains the most complete set of national statistics on entrepreneurship and business management, since most governments are obligated to gather and report various economic statistics to the public and international organizations. Further, many governments maintain research institutions or research divisions to interpret these statistics and offer guide to policy. Thus, it may not be much of a burden to governments to establish a consulting service for SMEs on selected issues dealing with technology and entrepreneurship. Such consulting services may be of great help to SMEs.

Therefore, the next checklist item asks whether the government of the member economy provides consulting services for SMEs dealing with such traditional government topics such as legal and tax issues; and also whether the government provides consulting services on technical and entrepreneurial issues, which are crucial for increasing vitality of SMEs.

B-7 *Does your economy provides consulting services for SMEs concerning technical, entrepreneurial, legal or tax issues*?

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

6. Innovation Education for SME Employees

Innovative SMEs require employees with high levels of human capital. Also, because innovation, by its very nature, leads to continual changes, employees in the innovative SMEs must continually adapt themselves to new changes. Such adaptation requires highly educated employees who continually update their education. This element is intended to examine how the governments of member economies provide high quality human capital to workers who are about to enter the job market; and how the governments assist current SME workers who are seeking to keep up with changes in their working environment - in other words, improving their potential and usefulness to innovative SMEs through further training and education. The first checklist item is intended to examine whether new workers who are about to enter the job market have training to work in, or run innovative SMEs.

B-8. *Does your economy encourage high school and college educational programs dealing with running innovative businesses?*

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the

economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

The second checklist item in this element is intended to examine whether the member economy encourages further education of employees in innovative SMEs. As stated above, further education allows workers to adapt to the changing environment, brought in part through innovation, and make themselves more valuable to the innovative SMEs where they are employed, as well as make themselves more valuable to the general society as a whole.

B-9 *Does your economy have programs to encourage SME employees to get further education?*

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

We note that this element, including the two checklist items, overlap substantially with area A of the Daegu Initiative, which deals with developing human resources and technology through linkage between industry, educational and research institutions. Thus, for the second round of the Daegu Initiative, the working group may consider reducing the overlap by shifting this element to area A, or set the development of human resources as a separate area, and consolidate all human resource development elements in that area.

7. Others

Finally, the last checklist item asks for any other measures that member economies have instituted to facilitate specialist assistance and advice to innovative SMEs. Member economies should report any measures which they believe is relevant, but does

not belong in any of the checklist items listed above. A member economy may also submit a "best practice" report concerning such measure if it feels that the measure warrants being a "best practice."

B-10. *Does your economy have any other programs to facilitate specialist assistance and advice to innovative SMEs?*

8. Summary

In the discussion above, we have presented a checklist for the currently selected elements in the area of access to specialist assistance and advice. However, the current elements do not seem to reflect the original intent as outlined in the 2005 Daegu Initiative report, and some of the elements may not truly belong in this area. Thus, we suggest that this area be overhauled extensively. In <Table 5-1>, we present one such option. In this option, we retain most of the elements in area B of the current cycle of the Daegu Initiative: 1) Assessing technical challenges facing SMEs; 2) Consulting SMEs' digitalization; 3) Research equipment and resources search system; 4) Expanding public service benefits; and 5) Others.

Alternatively, this area may be eliminated altogether, and the elements in this area can be assigned to other existing or newly established areas. A new area on digitalization of SMEs can be established, and elements from this and other areas of the Daegu Initiative dealing with digitalization can be consolidated into this new area. Also, an area on government efficiency may be drawn up, and "assessing technical challenges facing SMEs," and "expanding public services" as well as many of the legal and regulatory elements in areas E and F, and newly developed checklist items dealing with quality of government services can be consolidated in that area. If this option is chosen, items dealing with elements in "research equipment and human resources search system" may be absorbed into area A, which deals with developing human resources and technology.

However, the final decision on which areas and elements to retain, and what new areas and elements should be established and should remain in the SME Working Group.

<Table 5-1> Recommendation for Elements and Checklist Items in the Second Daegu Initiative for 'Access to specialist assistance and advice'

Element	Definitions	Checklist Item
1. Assessing technical challenges facing SMEs	− How does the government assess what innovative SMEs require from the government?	1. *Does your government regularly meet with representatives from innovative SMEs, and discuss their needs?*
2. Consulting SMEs digitalization	- What is the extent of SME digitalization? - What specialist assistance is	2. *Does your economy have broadband connections widely available to your*

	available for SMEs which need to digitalize?	*businesses? If not, is there a plan on introducing more broadband connections to businesses?*
		3. *Does your economy's government offer advice to your SMEs on how best to digitalize their businesses*
3. Research equipment and human resources search system	- Do innovative SMEs have good access to R&D facilities? - Do innovative SMEs have good access to expert specialists and consultants?	4. *What type of programs does your economy maintain for making required equipment available to innovative SMEs?*
		5. *Does your economy's government maintain a database of expert consultants who would be useful for innovative SMEs, and can innovative SMEs access that database to find experts that they need?*
4. Expanding public service benefits	- Do governments provide good advice and services on government-related issues dealing with innovative SMEs?	6. *Does your economy provide consulting services for SMEs concerning technical, entrepreneurial, legal or tax issues*?
5. Others		7. *Does your economy have any other programs to facilitate specialist assistance and advice to innovative SMEs?*

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Chapter 6: Area C: Enhancing Availability of Capital to Innovative SMEs

1. Background

Innovative SMEs and the Financing Gap Problem

Financing has been identified as one of the most important factors determining the survival and growth of SMEs. Access to finance allows SMEs to invest in innovative activities; such as acquiring latest technologies and expanding their R&D investment, thus ensuring their competitiveness. SMEs encounter various financial requirements in the process of stepping up each stage of life cycle. One of the most commonly cited problems by SMEs as well as authorities in both developing and developed economies is the difficulty of gaining access to financing for SMEs. This problem can be termed as "financing gap." While there is no common definition for this term, this term is usually used to mean that a number of SMEs in both developing and developed countries experience difficulties in obtaining financing from banks, capital markets and other sources of finance.

Traditionally, banks and investors have been more reluctant to finance SMEs, especially innovative SMEs, than for larger enterprises. There are number of reasons why.[20] First, SMEs are regarded by creditors and investors as high-risk borrowers, due to insufficient assets and low capitalization, vulnerability to market fluctuations and high mortality rates. Second, information asymmetry arising from SMEs' lack of accounting records, inadequate financial statements or business plans makes it difficult for creditors and investors to assess the creditworthiness of potential SME proposals. Third, high administrative/transaction costs of lending or investing small amounts do not make SME financing a profitable business for commercial lenders.

The difficulties that SMEs face in obtaining financing are more critical when it is for technology investment. Since the result of technology investment, especially in cases of technology start-ups, is highly uncertain, it is harder for 'innovative SMEs (ISMEs)' to access to financing than traditional SMEs. The key characteristics of the so called new-technology-based firms, which can be considered as sharing similar characteristics of ISMEs, are identified as follows:[21] First, their success is linked to hard-to-value growth potential derived from scientific knowledge and intellectual property. Second, in the early stages of their life cycle, they lack tangible assets that may be used as collateral. Third, their products have little or no track record, are largely untested in markets, and usually have high obsolescence rates.

These characteristics imply that ISMEs are more vulnerable than other SMEs to asymmetric information and default probabilities. This again means that it is almost impossible for financiers to calculate potential outcomes of the investments. Due to these reasons, there exists "the financing gap."

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[20] : UNCTAD (2001)
[21] : UNCTAD (2002a)

While it is generally accepted that all SMEs can contribute to the development of economy, SME-related literature give special emphasis to SMEs with strategic significance for economic performance. Those are the ones in high technology sector, and we designate them as ISMEs. ISMEs have a high growth potential and play a crucial role in raising productivity and maintaining competitiveness of the economy. However, without access to finance, ISMEs will not be able to make the necessary technology investment to innovate so that they could contribute to the growth of economy.

Many questions and pessimistic views have been raised on the development contributions of ISMEs and the provision of financial support for them. However, there is fairly clear evidence that ISMEs face a higher cost of capital than their larger competitors and firms in other industries. This problem points to the existence of market failure, which can justify government intervention in technology financing for ISMEs.

OECD' Policy Recommendations for Innovative SMEs' Financing Gap Problems

According to OECD (2006)[22], many governments realize that ISMEs generate sizeable gains in income, employment, export and productivity; and the availability of finance is a precondition for the foundation of such firms. However, traditional means of finance, such as bank lending, government guaranteed loans, and listing on traditional stock exchanges are only of limited relevance to ISMEs, which usually have negative cash flows, untried business models and uncertain prospects for success. High growth firms are ill suited for debt finance, at least until the middle or later stages of their life cycle. Such firms rarely generate sufficient cash flow to service debt and their risk is too high to be suitable candidates for bank credit and other forms of debt financing. The paper concludes that the most successful means of providing finance to ISMEs has been through equity and quasi-equity products under which the investor can assume a large amount of risk, but can also reap very large rewards.

Issues in financing for ISME were discussed as one of tools for SME innovation at the second OECD Conference of Ministers responsible for SMEs which held on June 3-5, 2004, Istanbul. Some of key policy recommendations were 1) concentrating on "policies for promoting availability of risk capital to innovative SMEs mainly on early stages of the financing of the firm", 2) recognizing "the need for proximity between suppliers of funds and those who require finance, particularly for small-scale investment", 3) increasing "the managerial and technical expertise of intermediaries whose role is to evaluate and monitor companies", 4) facilitating "international transfer of institutional infrastructure and expertise", 5) subjecting "new regulations which could adversely affect the provision of risk finance to cost-benefit tests of their likely effect before implementation and monitor their subsequent impact", and 6) encouraging, "in conjunction with business and accounting bodies, small business to recognize, measure, and report intangible assets"[23].

[22] : OECD (2006)
[23] : OECD (2004)

APEC's Discussions on Access to Capital by Innovative SMEs

The APEC 6th SME Ministerial Meeting (SME-MM) was held on April 26-28, 1999 in Christchurch, New Zealand. The lack of venture capital was identified by the SME Ministers as one of the four difficulties for SMEs in raising capital. The Ministers Statement set forth that the "Ministers agreed to raise with APEC Finance Ministers the urgency of removing barriers to the competitive provision of financial services to SMEs, especially with respect to the marshalling of capital and the creation of venture capital funds."

In light of the above, Chinese Taipei has organized the APEC Seminar on *"Securing Initial Equity Funding for Start-up Companies – The Birth and Growth of SMEs in a Knowledge-based Economy"* on May 16-18, 2000. The discussions have covered the areas of securing initial equity funding (i.e., venture capital), subsequent equity funding (i.e., investment banking) and creating healthy IPO markets such as the flexible listing boards available in certain APEC member economies for high-growth companies. In addition to these arrangements, the role of government funding was also discussed as an important catalyst for the development of the venture capital industry. The seminar confirmed that the government has an important role to play in terms of creating a conducive legal and institutional environment to secure various stages of equity funding for start-up companies and SMEs.

The Ministers at the 7th SME-MM acknowledged that issues concerning SME financing are crucial for sustaining SME growth. It was recognized that in some economies, SMEs' access to capital is limited by a number of factors including the lack of market resources, insufficient collateral and guarantees, high costs of financing, and underdeveloped financial institutions. The lack of finance remained a major constraint for SMEs in some member economies, mainly because SMEs lack managerial skills. There was a convergence of views that APEC member economies should enhance the managerial skills and capacity building of SMEs to enable them to gain better access to financial and capital markets.

The Ministers also recognized that SMEs needed access to information about sources of funds. The APEC Start-up Companies and Venture Capital Survey conducted by Chinese Taipei indicated that there was interest in establishing an APEC database to disseminate and exchange information on start-up companies and venture capital. It is recognized that venture capital is important for financing start-up companies and ICT industries, and the private sector is the leading source of capital. The Ministers acknowledged that venture capital funds will complement the financial sector in providing initial capital to new businesses and recognized that governments had a role in creating a better environment for SMEs and start-up companies to help them access capital markets. In this respect, the Ministers concurred that SMEs that have growth potential could be assisted in accessing financial and capital markets.

At the 8th APEC SME-MM, the Ministers pointed out that venture capital is essential to the development of SMEs, especially in the ICT sector. Ministers decided that it is necessary to improve the policy and personnel exchange relating to the venture capital

system and regulatory models, and that actions should be taken to set up an APEC-wide mechanism for sharing information on start-up companies, venture capital and capital markets with a view to facilitating the sharing of resources. To further the cooperation in the region on facilitation of finance for SMEs, the Ministers instructed SMEWG to continue to enhance the policy dialogue and exchange of experience among APEC members concerning building a favorable financing environment, especially in the development of capital markets, for the start-up and development of SMEs. It is of particular importance for the developed economies to share their lessons learned with the developing members.

At the 9th SME-MM, the Ministers acknowledged that seed and venture capital investment firms, together with the fast growing portfolio firms in which they invest, and the professional services firms that support them, are powerful sources of job creation, as well as innovation and globalization in economies around the world. Even though they and their portfolio firms comprise a tiny percentage of total SMEs, venture capitalists and private equity investors can play a vital role in accelerating the development of economies. The Ministers give recognition to the facts that seed and venture capital businesses have the potential to alleviate asymmetric information facing start-ups and integrate them into industrial networks, especially high-tech start-ups. The Ministers recommended that venture capital policies established by SME administrations within economies can supplement existing sources of funds and reduce administrative obstacles to the set-up and operation of venture capital firms. Ministers also recognized the need to have a legal and regulatory landscape which will promote capital formation, such as the formation of angel networks, venture capital enterprises, and investment banks with open financial markets.

On this account, the Ministers agreed to consider the following policy recommendations: 1) Undertaking a review of their legal and regulatory structure to determine the constraints for the formation of individual and enterprise capital, including investing in and exiting from enterprises; 2) Revising those laws and regulations that form barriers to the formation, growth and dissolution of SMEs and capital; 3) Explicitly authorizing and encouraging its private sector banks, institutions, pension funds, investors and corporations to allocate a prudent percentage of their investment portfolios to limited partnerships in successful venture capital enterprises, with the goal of developing their own economy's capital capabilities; and 4) Reviewing annually the growth of its capital and SME communities and providing APEC with this report.

Enhancing the Availability of Capital to Innovative SMEs in Daegu Initiative

For the Daegu Initiative, in the area of 'Enhancing availability of capital to innovative SMEs', there are six elements: 'Providing financial incentives for innovative SMEs', 'Providing SMEs with policy loans based on technological competence or feasibility evaluation', 'Establishing an institution dedicated to providing SMEs with guaranteed loans', 'Strengthening support for guarantee', 'Streamlining SME financing procedures', and 'Considering SMEs outside policy support'. For the first cycle of the Daegu Initiative, these elements should be used as the relevant criteria for examining

the legal and regulatory structure of each APEC economy, since these elements have already been chosen by consensus of the APEC economies, and since they represent outcomes of good planning.

2. Providing Financial Incentives for Innovative SMEs

Categories of government incentives to promote technology investment can be classified as follows:[24] First, financial incentives such as grants, subsidized credits and insurance at preferential rates; Second, fiscal incentives including tax holidays, tax reductions or exemptions on profits, imports and exports; Thirdly, other incentives such as public procurement, subsidized infrastructure, various kinds of regulatory incentives linked to ownership and other preferential treatment. These incentives have been used by government to promote technology investments and most of them combine all three categories in practice. It is difficult to conclude which one is the most effective way of organizing support for technology investment. However, government should consider a wide range of criteria when providing financial assistance for ISMEs, and keep in mind that these incentives should operate in an open and transparent way, with regular reporting of and accounting of costs.

The most typical of financial incentives for ISMEs could be grants or awards. Matching grants are usually preferable since they can improve the efficiency of the government intervention. However, in some cases the firm might be required to repay the grant if the firm reaches a commercially viable stage. The R&D grants, which are provided through national R&D programs, are the traditional tools of government's supply-side technology intervention policy. Through the rationality of "market failures" in private market's R&D provisions and theory of "science-push" for innovation, government implements public R&D programs which provide R&D grants to public and private R&D institutions. Even though direct provision of R&D grants are mostly concentrated in public R&D institutions and basic scientific researches, governments provided substantial portions of R&D grants to private firms. Direct R&D grants to large firms tend to be rather limited, while innovative SMEs are emphasized as beneficiaries for R&D grants because of the roles and characteristics of innovative SMEs in national innovation systems[25]. <Box 6-1> describes some R&D grand or award programs of the EU and the US.

<Box 6-1> EU SME CORDIS Program and the US SBIR Program

In the European Union, Innovative SMEs can apply for research funding through the SME Specific Measures scheme, the Community Research and Development Information Service (CORDIS). In the first stage, SMEs receive an Exploratory Award, which covers part of the cost of conceiving and preparing a complete project proposal to one of the Research Technology Development (RTD) programs. In the second stage, there are five different types of project proposals that may be prepared

[24] UNCTAD (2002b).
[25] Cohen (2001)

using an Exploratory Award: *1) Cooperative research projects (CRAFT):* These enable groups of at least two SMEs with similar technical problems and without adequate in-house R&D capabilities to engage third parties ("RTD performers") to carry out most of the research on their behalf. *2) RTD projects or collaborative research projects:* These are open to enterprises possessing the internal capacity to undertake their own research; at least two enterprises must pool their efforts. 3) *Demonstration projects:* These are designed to prove the viability of new technologies on completion of the research phase, where the technologies concerned still face technical and technological uncertainties and are thus not yet ready for marketing. 4) *Projects that combine research and demonstration activities in respect of new technologies. 5) Innovation projects:* These are pilot projects resulting from research where transnational transfer of a technology is involved.

Another example is the *United States Small Business Innovation Research (SBIR)* program. The purpose of this program is to stimulate technology innovation in the small-business sector; to meet the R&D needs of the Government; to increase the use of minority and disadvantaged individuals in this process; and to commercialize the results of federally funded R&D. In Phase I, SBIR awards up to US$100,000 towards the expense of evaluating a concept's scientific or technical merit and feasibility. If the project is deemed promising, it can receive up to US$750 000 in Phase II. To promote the commercialization of R&D, the Small Business Administration (SBA) operates a computer database to link SBIR awardees with venture capital firms. Further, a pilot programme, the Small Business Technology Transfer (STTR) programme, provides funding for research proposals that are developed jointly by a small firm and a scientist in a research organization.

Thus, the first item in the checklist will be the R&D grant programs for innovative SMEs.

C-1 *Are there R&D grant programs for innovative SMEs, and if such programs exist, what are their amounts and effectiveness?*

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice

report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

The most typical examples of fiscal and tax incentives to encourage R&D and investments in ISMEs are tax holidays, credit rebates and various accounting procedures such as accelerated depreciation. The fiscal tax incentives are the traditional demand-side policy tools for promoting private firms' technology innovation. Among OECD member economies, 21 member economies have implemented tax incentive systems for private R&D investments[26]. The R&D tax incentive forms in OECD member economies consist of tax referral, tax allowances and tax credit. There exist several OECD countries which provide special tax incentive treatments for SMEs' R&D investments, such as Canada, Italy, Japan, Korea, Netherlands and U.K. Moreover, some OECD countries - Belgium, Canada, Italy, Japan, Korea, Netherlands, Norway and U.K. - consider SMEs' innovation as the foremost target of their R&D tax incentive policies[27]. Japan began tax incentive programs for technological development in the early 1950s. In Korea, efforts to encourage R&D were not launched until the late 1960s. However, Korean firms are allowed to retain funds (up to 20 per cent of total income before taxes) for technology development, and these profits are not taxed.[28] This is said to be a very powerful benefit since it encourages firms to reinvest 20 per cent of their profits in R&D. <Box 6-2> describes Malaysia's Pioneer Status and Investment Tax Allowance program, which grants R&D incentives to innovative firms.

<Box 6-2> Malaysia Pioneer Status and Investment Tax Allowance

In Malaysia, Pioneer Status and Investment Tax Allowance (ITA) incentives are given to companies engaged in manufacturing and in some other sectors such as agriculture and forestry. "Pioneer Status" exempts the companies, which are engaged in high-technology activities, from the payment of income tax up to 100 per cent of statutory income.

The second item in the checklist will be the R&D tax incentive programs for innovative SMEs.

C-2 *Are there tax incentive programs for innovative SMEs, and if such programs exist, what are their amounts and effectiveness?*

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

[26] Warda (2006)
[27] Warda (2002)
[28] Pawan (1998)

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

A more indirect form of government incentive is the procurement program; such as a government agency purchase technology-related products from local SMEs at subsidized prices. From the perspective of innovation policies, public procurement can serve as a demand-sided innovation-promoting policy instrument[29] instead of support for weak and incompetent SMEs, for social purposes. Innovation-oriented public procurement can be specifically divided into general procurement for innovation and strategic procurement for innovation[30]. While general procurement for innovation means that government imposes higher priority upon innovative capacity or innovative activities of a firm in the procedure of procuring, contracting and evaluating commodities or services; strategic procurement for innovation means that government strategically targets to develop specific new technologies or new products, which are currently non-existent in markets. Extensive literature[31] provides empirical results that public procurement for innovation and technology development can be more effective than supply-oriented innovation policies such as R&D subsidization.

Public procurement policies were traditionally not recognized as innovation-promoting instruments in systematic ways until the early 1990s with the exceptions of the US and Sweden. While, from the perspective of the US, public procurement for defense-related technology developments are strategically utilized as innovation-oriented instruments, Swedish government led high-technology industrial development through public and private partnerships of technology development in 1980s and 1990s. Only since the early 1990s, public procurement is recognized as strategic innovation promotion policy. EU-led research[32] was the first to systematically analyze public procurement as innovation-oriented demand policies. The Lisbon strategy of EU acknowledged the critical role of demand-oriented innovation policies for promoting private R&D and innovation investments, and this recognition is manifest in the RIAP (Research Investment Action Plan). Thus, the third item in the checklist will be procurement programs for innovative SMEs.

C-3 *Are there public procurement programs for innovative SMEs, and if such programs exist, what are their amounts and effectiveness?*

[29] Edquist (1996) provided a typology of innovation policies into two dimensions. Innovation policies, according to Edquist (1996), can be divided into demand-oriented and supply-oriented innovation policies, and in another dimension, divided into technology development policies and technology diffusion policies.
[30] Edler (2006)
[31] Edler (2006), Rothwell and Zegveld (2004), Dalpe et al.(1992)
[32] Edquist et al. (1998)

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

3. Providing SMEs with Policy Loans Based on Technological Competence or Feasibility Evaluation

Most countries provide policy loans to ISMEs with relatively favorable interest rates and low commission rates to support innovation activities of ISMEs. These programs are mostly operated by government-established special institutions, and sometimes in cooperation with private financial institutions. These public loans can be provided to the enterprise directly by a government agency or through a financial intermediary. In the latter case, the government could provide the funds to the intermediary as a loan, or in the form of interest rate subsidy to compensate for the difference between the market rate and the subsidized rate.

Direct loan programs are traditional tools of providing funds for SMEs, which lack collateral and enough credit, thus unable to receive finance from the banking system. Thus, mostly developing member economies and banking-system-based member economies often utilize direct loans programs with credit guarantee schemes. According to APEC (2006), while Japan and Korea have the most extensive direct loan programs for SMEs, most of Asian member economies such as Malaysia, Philippines and China, and Mexico operate diverse direct loan programs.

Most Korean financial support programs for private sector's technological innovation employ the instrument of loan financing combined with loan guarantee programs. Financial supports for private sectors' technological development started from the late 1970s with government special purpose banks and funds. As the demands for indigenous technological development increased since 1980s, the financing supports for R&D investment and commercialization developed. Korean Development Bank (KDB) started the loan program for technology development in 1976, and Korean SMBA has provided the loan program for SMEs' technology development since 1977. Besides

banks' loan programs, diverse special-purposed funds are established to provide adequate loans to promote technology development. Funds for Industrial Developments since 1980 have, in part, been utilized as technology loan financing to lend industrial technology development. In 1990s, the funds for science and technology development and the funds for ICT promotion were newly established for technology loan programs.

The items of checklist in this element will be whether there are policy-loan programs for promoting SMEs' innovations.

C-4. *Are there policy-loan programs for innovative SMEs, and if such program exist, what are their amounts and effectiveness?*

C-5 *Are there evaluation procedures of technological competence and feasibility in policy loan programs?*

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

4. Establishing an Institution Dedicated to Providing SMEs with Guaranteed Loans

While most countries provide policy loans to ISMEs, there exist several countries which establish public institutions dedicated to providing public loans to SMEs with relatively favorable interest rates and low commission rates. The primary purpose of these SME support financial institutions has been revitalizing weak and incompetent SME sector, which are the major source of national job creations. However, recently, these institutions has been redirecting support toward innovative SMEs, stimulating technological innovation activities among SMEs.

Japan has three public and private financial institutions which are dedicated to providing direct public loans to SMEs: 1) the Japan Finance Corporation for Small Business (JASME) established in 1953 for long-term capital, 2) National Life Finance

Corporation (NLFC) established in 1949 for small loans to very small business, and 3) the Shoko Chukin bank established in 1936 for member companies' loans. These three governmental financial institutions have 26.8 trillion yen's worth of total outstanding loans to SMEs, which is 10.3% of total financial loans to SMEs. In Korea, during 1980s, the SME Bank (which is known in English as the Industrial Bank of Korea (IBK)) has started loan programs for private sector technology developments. The Philippines established Small Business Corporation (SB Corp) in 1991, which provide credit financing and guarantees to Philippines SMEs. SB Corp provide wholesale funds with low interest rates to bankable SMEs, credit guarantees for near bankable SMEs and direct loans to non-bankable but promising SMEs.

Thus, the next checklist item in this element will be the existence and extensiveness of SME banks for promoting SMEs' innovations.

C-6 *Are there special SME banks or financial institutions which are established for providing policy-loans for SMEs, and if such banks or institutions exist, what are their amounts and effectiveness?*

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

5. Strengthening Support for Guarantee

Various technology guarantee schemes can be provided with the purpose of covering the losses incurred when borrowers default on loans. The purpose of such schemes is also to encourage financial institutions to lend to SMEs which have viable projects and good prospects of success but which are unable to provide adequate collateral or which do not have a suitable record of financial transactions to prove that they are creditworthy. Governmental loan guarantee programs provide guarantee to SMEs either by collecting guarantee insurance fees from SMEs or by executing technology evaluations. With these governmental guarantees, private commercial banks provide loans for innovative SMEs and venture firms. In case of ISMEs, technology can be the

most important asset of a business concern, and determines the future of the company. However, until recently, it has hardly been accepted as collateral in financial institutions, as it is hard to quantify the monetary value of such intangible assets and is not easily traded like commodities. Moreover, there were no reliable and specialized institutions in charge of appraising technology.

The funding gap problems, which are faced by innovative SMEs, are due to market failures, such as substantial asymmetric information problems and uncertainties. Therefore, government can intervene in market not only by providing direct financing to innovative SMEs in their early stages, but also by solving information asymmetry problems by providing better information to the market, through technology evaluations, venture certification, technology loan guarantee programs, or by technology transfer intermediaries.

However, general assessment on loan guarantee schemes is not particularly encouraging. According to Gudger (1998), most of guarantee schemes may not be sustainable without subsidy and they appear to have low volumes of operations and high operating costs. Loan guarantee schemes may not be particularly appropriate in dealing with risky projects since there is no possibility for financiers to share in the potential high upside return. However, they may be an appropriate instrument to deal with the specific problem of the lack of collateral for an otherwise commercially fundable project of equivalent risk.

Since governments assume the downside risks of venture firms and SMEs through government direct loan programs, proper guarantee insurance fees and authentic technology evaluations are indispensable for efficient operations of government loan guarantee programs. Technology evaluations are especially important because these evaluations reduce the problems of information asymmetries about the possibilities of venture firms' technology success. Technology evaluations include the evaluations of net present values of technology with the analysis of technology development, possibility of commercialization and market demands. These technology evaluations can be utilized for venture capital investments, debt financing, M&A and technology transfers. <Box 6-3> gives the example of Korea's Technology Appraisal Center (KIBO).

<Box 6-3> Korea's Technology Appraisal Center (KIBO)

Korean government established KIBO, a specialized institution for appraising technology-innovative enterprises and funding, in 1989. KIBO initiated the technology appraisal service by launching Technology Appraisal Center (TAC) in 1997 in order to introduce credit guarantee facilities which are provided based on the technological capabilities of business enterprises. In an attempt to expand its technology appraisal power, KIBO also reorganized its infrastructure of the technology appraisal manpower. The Technology Appraisal Bureau was launched to carry out its mission independently in 2004. In connection with the effort to enhance the technology appraisal capability and respond to growing demand, more than 30 technology appraisal experts are currently working at its headquarters and 14 TACs, with 854 experts of various fields

across the nation, commissioned as outside advisors.

The general process of how technology guarantee schemes work is as follows. A potential borrower who cannot meet a bank's lending criteria, usually because the borrower cannot provide satisfactory collateral, is referred by banks to KIBO. Staff in KIBO branches carry out an independent appraisal of loan guarantee application to investigate the borrowers' creditworthiness, the use to which the loan is to be put, his prospective ability to service the debt, and above all, the superiority of technology. In most cases, the banks rely on investigation and approval by KIBO for their decision of the loan. If it is found that the case is suitable for a guarantee, the borrower returns to the bank with a letter of guarantee issued by KIBO and take out the loan. Usually, the guarantee involves the payment of a guarantee fee, whose amount depends on the size of the amount being guaranteed.

KIBO's technology appraisal provides important benefit for the public by helping the government select right beneficiaries. It insures the efficient distribution of the limited financial resources, and thus enhance the quality and efficiency of government policies and financial system for supporting promising SMEs and venture enterprises.

Loan guarantee programs and technology evaluation programs are interrelated and indispensable for proper operations of policy loans programs for innovative SMEs. Thus the first and second checklist items in this element will be the existence and extensiveness of loan guarantee programs and technology evaluation intermediaries for promoting SMEs' innovations.

C-7 *Are there loan guarantee programs for innovative SMEs, and if such program exist, what are their amounts and effectiveness?*

C-8 *Are there government loan guarantee institutions which are established for providing guarantees for SME loans, and if such institutions exist, what are their amounts and effectiveness?*

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

6. Streamlining SME Financing Procedures

Timely financing is an important factor for SMEs. Important business opportunities or an opportunity to innovate can be lost without a timely financial support. However, it has been pointed out by most SMEs that multiple administrative procedures and lengthy credit evaluation process are the factors that make SMEs hesitate to apply for bank credit. These difficulties will push SMEs to change to another bank or look for loans in the informal sector at high interest rates which can result in bigger burdens for SMEs. For these reasons, SMEs consider the speed of getting financing as a determining factor in achieving success.

On this account, it is important for banks to make an effort to restructure their organization and simplify the credit evaluation process to become more customer-oriented. Such efforts can, in turn, reduce the administrative costs for the bank, allowing them to lend at lower rates of interest, as well as reduce opportunity costs for SMEs.

In fact, the most profitable banks have introduced streamlined underwriting process with simple and limited paperwork and a rapid response to loan applications. Some of the actions taken by banks for streamlining and simplifying the credit process are:[33] 1) eliminating bureaucracy by increasing staff responsibility and their power to make decisions as well as reducing the number of layers in the loan transaction process; 2) concentrating the administrative activities in specialized and automated centers and leaving sales activities to local offices; 3) applying latest information technologies during the whole lending process: analysis, decision, pricing and monitoring; and 4) designing systems to identify and resolve bottlenecks and unnecessary long procedures. Among these actions, use of information technology can successfully reduce the cost of both loan applicants and provider.[34]

According to the American Advisory Board Company, banks that effectively adopt these strategies can double their profitability compared to competitors who do not apply them (EC, 1997)[35]. Some examples are provided in <Box 6-4>.

<Box 6-4> Streamlining Credit and Loan Requests of SMEs

German Bank “Stadtstparkasse Hannover” reduced the handling time of loan requests from 11 days to less than four days. The bank gave people more responsibilities in order to reduce time-consuming administrative work. The bank managed to reduce the nineteen sequential administrative measures to a few simultaneous actions by educating front office employees with the necessary skills to

[33]: UNCTAD (2001) p.16

[34] Technology can greatly extend a bank’s reach with simple, standardized products such as a small, unsecured loan or perhaps an office equipment lease. The advantage of standard products is a significant cost reduction. Besides, standardized products can be reasonably priced and are easy to access since they are suitable for virtual banking and only require automated processing assessment (UNCTAD, 2001).

[35] “The Second Round Table of Bankers and SMEs” DG XXIII-Enterprise Policy, Brussels, 1997.

advise the customer and, even to some extent, were authorised to give loan commitments on the spot.

CERA Bank of Belgium can be another example. In order to eliminate bureaucracy and streamline processes, the bank carried out an analysis of the whole organization from head office to local branches to detect bottlenecks, unnecessary long procedures and lack of cooperation. On the basis of this analysis, a plan which included the reorganization of the credit approval committee was implemented. The account officers were given more signing authority and credit committees were staffed with more professional personnel. These changes allowed the bank to answer credit requests within 72 hours and attend to complaints in 48 hours.

Thus, in order to streamline financial procedures for innovative SMEs' loans, it is very important to 1) standardize product menus, loan application and lending standards, 2) establish an automated application processing system, and 3) develop virtual banking system as a new distribution channel.

In this light, the checklist item for this element should include the existence and extensiveness of banks' specialized procedural programs for innovative SMEs' loans.

C-9 *Do banks have special programs for streamlining SMEs' financing procedures, and if such programs exist, what are their amounts and effectiveness?*

C-10 *Are there governmental promotion programs for streamlining banks' SME financing procedures?*

When providing review for this checklist items, the following criteria can be considered: whether there exist 1) specialized SME branches with the objective of providing SMEs with more profession and rapid solution for credit evaluation, and 2) standardized on-line loan application system and automated application processing system.

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the program was needed, what the goals were,

how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

7. Considering SMEs Outside Policy Support

Enhancing availability of capital to innovative SMEs through outside policy support means that the support for private venture capital market provides early-stage venture funds for technology-intensive and innovative SMEs. Government can participate in direct equity investment through establishing direct funds for innovative SMEs with technological capabilities. Some APEC member economies have established governmental venture capital investment organizations with the purpose of direct investment in venture firms or participating as a limited partner. However, the effectiveness of governments' direct equity programs were relatively negative in promoting innovative SMEs due to a lack of proper monitoring and professional expertise of fund management. Thus, hybrid-funds, which are venture capital firms with injections of public equity investments, are established in order to allocate public financial supports for venture firms, using professional fund managers to act upon equity investment.

With the aim of improving the role of venture capitalists in Korean national innovation system on the area of high-risk, high-return and high technology, the Korean government developed a series of venture funding mechanisms to provide financial support for technological innovation. With the aims of promoting and securing necessary funds for high technology start-ups and venture firms, government revised financial-market-related laws and provided direct funds to be injected to venture capital investment funds. The four venture capital corporations - Korean Technology Advancement Corporate (KTAC), Korea Technology Development Corporate (KTDC), Korea Development Investment Corpoate (KDIC) and Korea Technology Financing Corporate (KTFC) - established during the 1970s and 1980s, were the beginnings of governmental technology financing. In 1986, the law for financing corporations to commercialize new technology was enacted. A fund of funds was created by government in 2005 to promote the establishment of investment funds for SMEs and venture businesses. 'Korea Venture Investment Corp' was designated as the institution for operating this fund of funds. Until 2009, a total of 1 trillion won will be provided for this fund, including 170 billion won in 2005 and 215 billion won in 2006.

The checklist item for this sub-section should be the existence and extensiveness of venture capital programs for innovative SMEs.

C-11 *Are there government venture capital programs for innovative SMEs, which can be either direct equity financing programs or hybrid-funds with private venture capital? If such programs exist, what are their amounts and effectiveness?*

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not

believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

Business Angel Networks (BANs) are highlighted among policy makers as an alternative to direct equity financing for innovative SMEs. BANs bring together business angels, venture capitalists, investors and entrepreneurs, who, being equipped with highly innovative technology, look for financial sources. BANs provide communication channels among potential demanders and suppliers of capital for technology development and commercialization. These policy initiatives are cost effective without substantial deadweight sunk cost on the part of government, and are estimated to have been successful in promoting venture capital market, compared to any other government financial schemes. However, under this policy, the government cannot reap the fruits of venture firms' success. The government only participates in BANs as a sponsor for maintaining the overall business angel networking. Moreover, international BANs can be further to in-sourcing international venture capital and to sharing advanced knowledge and expertise.

The second checklist item for this sub-section should be the existence and extensiveness of venture capital programs, such as BANs, for innovative SMEs.

C-12 *Are there policy programs for promoting networks of venture capitalists, which are often called as business angel networks (BANs)?*

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice

report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

8. Summary

This chapter has discussed checklist items for the currently selected elements in 'Enhancing availability of capital to innovative SMEs.' However, the current elements do not seem to properly reflect financial policy instruments for innovative SMEs, which are currently available in most advanced economies' policy arena. To this end, we suggest that in the second round of the Daegu Initiative, the current elements be replaced by the following: 1) Venture capital; 2) SME banks; and 3) Guaranteed loans for innovative SMEs. The checklist items should be rearranged or eliminated as appropriate.

<Table 6-1> Elements and Checklist Items for 'Enhancing Availability of Capital to Innovative SMEs' in the Second Round of the Daegu Initiative

Element	Definition	Checklist Item
1. Venture Capital	Does the government provide public venture capital fund programs and/or promote for private financial markets to involve in providing venture capital investments for innovative SMEs?	1. *Are there government venture capital programs for innovative SMEs, which can be either direct equity financing programs or hybrid-funds with private venture capitals, and if exists, their amounts and effectiveness?*
		2. *Are there policy programs for promoting networks of venture capitalists, which are often called as business agel networks (BANs)?*
		3. *Are there any other policy measures to facilitate private venture capital markets for innovative SMEs?*
2. SME Banks	Does the government establish a financial institution solely dedicated for providing policy loans for innovative SMEs with guarantee schemes?	4. *Are there special SME banks or financial institutions which are established for providing policy-loans for SMEs, and if exists, their amounts and effectiveness?*
3. Guaranteed Loans for Innovative SMEs	Does the government provide policy loan programs and/or loan guarantee programs for innovative SMEs	5. *Are there policy-loan programs for innovative SMEs, and if exists, their amounts and effectiveness?*
		6. *Are there evaluation procedures of technological competence and feasibility in policy loan programs?*

		7. *Are there loan guarantee programs for innovative SMEs, and if exists, their amounts and effectiveness?*
		8. *Are there government's loan guarantee institutions which are established for providing guarantees for SME loans, and if exists, their amounts and effectiveness?*

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Chapter 7: Area D: Networking and Clustering for Innovative SMEs

1. Background

The Emergence of Industrial Clusters

Highly competitive industrial regions attract both academic and business interests. Academics have done research on such regions, and they started to use the term "cluster." It is now accepted as a key concept in innovation, and policy makers view "industrial cluster" as an effective way to enhance the competitiveness of region and firms. Frequently termed as "the Third Italy," the northern provinces of Italy highlight the emergence of industrial clusters, which comprise mainly of SMEs. For the last decades, it is believed that network externality underpins the prosperity of SME clusters. Exploiting geographical proximity, firms tend to interact more efficiently in burgeoning industrial cluster. As firms co-locate in a region, the diffusion and sharing of knowledge occur more easily and efficiently. The lowering of cost by sharing research facilities is one of most fundamental (and traditional) virtue of collective activities. As SMEs generally lack necessary capabilities, thus pooling resources is recommended as a natural solution.

It is not only physical resource that merits cluster of firms. For SME innovation, the shortage of resources creates imperatives to collaborate in order to complement the deficiency of resources. Mutual cooperation between SMEs can enlarge the SMEs' capacities to innovate. As innovative activities in cluster intensify, firms in the clusters innovate more (Baptista and Swann 1998). Scattered experts in the area may interact casually and get intellectual stimulation from each other (either by formal meeting or by informal contact). Furthermore, infrastructures for the SME clusters matter for the performance of cluster. SMEs may share the cost to hire legal experts and set up a special center (for monitoring technological trends). Governments can subsidize the collective activities of SMEs in various ways, including the establishment of SME associations for export, procurement, and the establishment of training centers.

These days, recognizing the importance of networking and clustering, governments artificially promote clustering policies. Although there are certain debates on the effectiveness of cluster policy and the concentrated investment on specified regions, purpose-built clusters, such as Daeduk area of Korea and Tsukuba city of Japan, have proven to perform well and continuously.

Academic Perspective on Clustering and Networks

More than a century ago, Alfred Marshall envisioned the cluster of firms and labors in economic development and named it an 'industrial district.' Following this line of thought, Dahmen suggested another term, 'development block,' for a spill-over effect , which results in an advantage for a particular region. This classic explanation for the concentration of SMEs can be summarized as the easy pooling of resources (such as skilled labor), specialized inputs and services, and relevant technical information. These three factors account for Victorian industrial districts, and are still relevant in explaining

modern industrial clusters. Hence, from the various theories on the advantage of agglomeration, it is possible to extract some essential factors to consider for making cluster policy.

The regional advantage of Italian tile industry is described in Sassuolo (Porter 1990). For high-technology firms, the example of Silicon Valley (Saxenian 1994; Hall and Markusen 1985) clearly demonstrates the positive effect of industrial cluster. The concentration of SMEs has enhanced the competitiveness of SMEs. Recent study on measuring performance in terms of productivity also exhibits the virtue of cluster. The firms in larger clusters present productivity gain than those in small clusters (Rosental and Strange 2004). Piore and Sabel (1984), witnessing the fading regime of Fordism and increasingly prosperous regional network of SMEs, argued that the "specialized but flexible" regions perform superior to old industrial regions. This flexible specialization brought about "the second industrial divide." SMEs baptized with flexible technology can be building blocks of new prosperous regions.

The knowledge spillover effect received greater attention due to its relevance to knowledge economy. Unlike pooling physical resources, knowledge sharing and technical information flows cannot be easily imitated by simple government investment policy. The culture of highly educated engineers and technicians in Silicon Valley is too unique to be captured at a glance. Nations try to copy its success, but building innovative clusters for high technology industry seems to be more complex than building industrial towns. Even within the same country, a region faces difficulty in trying to emulate successes of other regions. Silicon Valley outperformed Route 128 (Saxenian 1994), and Route 128 could not copy Silicon Valley culture completely. Silicon Valley has knowledge sharing culture at both formal and informal spheres.

Creating knowledge sharing culture is critical for highly creative cutting edge industries. As multi-media tools emerge to communicate over long distance efficiently, there is discussion on whether geographical proximity is still important in information sharing. In general, the geographical proximity still matters for knowledge production. Face-to-face communication enhances mutual trust and increase efficiency of communication. Economist identified the propensity to concentrate by mapping patent citation in a region. For example, using the case of Netherland Eindhoven area, Philips examined patents assigned to regional innovators (Verspagen 1992). One may postulates that geographical proximity reduces the cost of transaction, and facilitateds competition.

Cluster and Networks

Porter (1990) defined the term 'cluster' as "geographically proximate group of companies and associated institutions in a particular field, linked by commonalties and complementarities." According to Rosenfeld (1997), bi-lateral relationship between two firms is the basic building block of networks. "Cluster" appears to be a more spatial concept with embedded culture. Thus clusters need to be understood as a whole entity. A single, individual member cannot fully represent the cluster.

Therefore, clusters are conceptually different from networks. The differences are summarized in <Table 7-1>.

<Table 7-1>. Conceptual Differences between Cluster and Network

Clusters	Networks
Clusters attract needed specialized services	Networks allow firms access to specialized services at lower cost to a region
Clusters have open "membership"	Networks tend to have restricted membership
Clusters are based on social values that foster trust and encourage reciprocity	Networks are based on contractual agreements
Clusters generate demand for more firms with similar and related capabilities	Networks make it easier for firms to engage in complex business
Clusters take both cooperation and competition	Networks are based on cooperation
Clusters have collective visions	Networks have common business goals

<Source> Rosenfeld (1997)

Vertical and Horizontal Clusters

Porter (1990) suggested two different types of cluster based on the basic principle of input-output table. The firms that have user (customer)-supplier relationships can be classified as vertical clusters, and those which do not have such relationships can be classified as horizontal clusters. Summarizing:

- *vertical clusters*: consist of industrial firms that are linked through supply chain relationships;
- *horizontal clusters*: include firms of various industries which operate in a common market for the products, share similar technologies, skilled labor and similar resources.

The vertical relationship between producer and user is identified as one of the major innovation corridors (von Hippel 1988). Sophisticated large multi-national corporations demand high quality capital goods and components, and SMEs who provide these components are under constant pressure to innovate. A main industry and auxiliary industries that have trade relationship evolve together and increase overall competitiveness of the main industry. Vertical clusters usually evolve with large corporations playing central roles. Constructive relationship between SMEs and large firm becomes critical for the vertical cluster.

As for horizontal clusters, SMEs in a common market may constitute minimum market size for suppliers. This pooling effect is the first level advantage. The second level advantage may arise from complementary technological knowledge. As same processes and techniques can be used for different products, heterogeneous industries may cooperate easily without serious concern about possible competition in the same

market.

Network Externalities for Knowledge Based Economy

Marshall called external economies of scale to depict resource pooling mechanism. However, knowledge aspect of external economy is wider than just pooling. It extends further to include knowledge spill-over and network effects. In a spill-over effect, networking can spread benefits to unspecified and unexpected economic agents. Krugman (1991) emphasized a specialized labor pool and network externality as the advantage of agglomeration. Network externality is frequently explained as an unintended contribution to other parties, and it is likely that larger size clusters have more such externality, and get the advantage. Economists point at the development of information and communication technology (ICT) as a major reason for the increasing return in knowledge economy. ICT may enlarge the community size to share information, and the positive network effect of expanding knowledge community can be seen, for example, in the case of "open-source software."

Complementary Linkages and SMEs

The reasons why SMEs need to participate in industrial clusters can be explained by 1) listing the potential benefits accrued to SMEs in cluster; and 2) quoting comparative studies that emphasize the superior performances of SMEs within industrial clusters. The latter method is used by Baptista and Swann (1998), which compares general firms within and outside of cluster[36] (Baptista and Swann 1998). There are numerous studies using the former method as well.

From the management point of view, SMEs are considered active in building external linkages (Rothwell and Zegveld 1982; Rothwell and Dodgson 1991). SMEs are encouraged to learn through alliances, as its customers – large corporations – have strong research capability. Public organizations, such as universities and public research institutes, can help SMEs to explore new science-based emerging technologies. The composition of assets in SMEs is relatively less diverse than large firms. Due to the shortage of assets, SMEs need to tap into other firms' complementary assets. The clustering of SMEs may alleviate the shortage of asset by mobilizing and sharing those complementary resources. In addition, outsourcing networks can reduce the entry barriers for firm creation. Incubating early stage firms may vitalize regional economy and provides learning opportunities for those SMEs.

Complementary relationship between SMEs can serve as a major method for acquiring new knowledge (Cegarra-Navarro 2005), and cooperation between SMEs and large corporation also enhances the performance of SMEs if trust between them is established (Alvarez and Barney 2001). Simmie (2003) views multi-national corporations as a messenger that brings and diffuses new knowledge to SMEs to

[36] The study aims to show the difference between firms inside clusters and those not. It does not show SMEs superior performance within cluster against large firms.

clusters. So, the trickle-down effect of large multi-national firm can strengthen overall benefit of SME cluster.

Role of Government and Establishment of Key Institutes

To exploit network externality in clusters, a key organization with high-quality research manpower can play crucial role as an amplifying hub for positive network externalities. It could be a large firm, university and government/ non-profit institute. Policymakers may be able to capture the importance of this key institute and facilitate this "artificial catalyst." Cluster policy is usually centered around these hub institutes.[37]

In particular, governments can encourage government laboratory facilities to be accessed by SMEs and high-technology firms. Entrepreneurs often establish high technology firms in the vicinity of government research institutions and research universities. Some of them are ex-employees of those organizations, and they naturally form linkages between spin-off firms and mother institutions. This linkage become the most efficient communication channel for collaboration. One of most frequently associated policy measure is establishing government sponsored business incubators.

Business Incubators

To lift young entrepreneurs, governments may set up special courses to foster entrepreneurs. In addition, government sponsored business incubators (either inside campus or on independent locations) were established in past decades. In general, business incubating within universities is active and gaining strength. This phenomena can be witnessed in Taiwan's case..

<Box 7-1> Taiwan's Business Incubators

Taiwan boasts active business incubators in university campuses:
Taiwan government implemented policy for Business Incubators (BIs), trying to emulate the success of the US venture creations. There are four types of BIs. The first type BIs are founded by federal government, the second by local governments, and the third type by universities, and the fourth type by public research institutes. The most popular type is the third. Taiwan government has effectively implemented the sponsorship of university-based BIs and established incentives to entice and stimulate academics. In 2006, the number of BIs reached 93, and amongst them university based BIs counts for 80.

[37] In Korea, TechnoPark is created in every administrative region. Similar efforts are found in APEC member economies as well.

Organized Efforts and Policy Directives

APEC's Efforts on Network and Clustering of SMEs

After the APEC Ministerial Meeting (APEC MM) in 1998, APEC Business Advisory Council was held in 2002, and the participants recommend that the member economies "promote business-to-business solutions by facilitating SME clusters". Following the event, APEC MM once again recognized the importance of relevant infrastructure for entrepreneurial growth, such as business incubator. According to 2004 Joint Ministerial Statement,

> "the enabling business environment that encourages the formation and growth of enterprises"… "In enabling the creation of an entrepreneurial society, Ministers emphasized the need for promotion of technology-based incubators"

In fact, APEC SPAN adopted the "technology sharing" principle, which is one of five priorities in Osaka Action Agenda (OAA). In 2002, APEC SME Working Group submitted "Proposal to Enhancing the Integrated Plan of Action for SME's Development", and it clearly identifies that the infrastructure for SME innovation hinges on building clusters and industrial districts. OAA states that the original plan aimed to increase cooperation between SMEs.

> "improving the economic environment so that SMEs may fully exploit their creativity and mobility, by helping SMEs address priority fields – human resources, information access, *technology and technology sharing*, financing and market access" …" recognizing that SME policies should focus not only on individual enterprises, but also on group enterprises and cooperatives"

Efforts of Other International Agencies

The United Nations Industrial Development Organization (UNIDO) prepared a special program, 'Development of Clusters and Networks of SMEs,' that targets less developed countries. The UNIDO program aimed to achieve a better and more effective business environment.

A sister organization, United Nations Conference on Trade and Development (UNCTAD), published an issues paper during its board commission meeting in 1998 in Geneva. The paper bears the title, "Promoting and Sustaining SMEs Clusters and Networks for Development." In the paper**,** building formal and informal network is acknowledged as critical tasks for enhancing world competitiveness of SMEs. In addition, the simultaneous effort from federal and regional government to develop clusters is recommended.

In addition, OECD Bologna Chapter emphasizes the importance of overall innovative environment to enhance competitiveness of SMEs; "an environment that supports the development and diffusion of new technologies for and by SMEs to take advantage of the knowledge-based economy." The details are presented in <Box 7-2>.

<Box 7-2> OECD Bologna chapter on SME cluster

RECOGNISING that, in a number of countries, clusters (2) and networking can stimulate innovative and competitive SMEs, RECOMMENDED that in developing SME policies, the following be considered:

- Partnerships involving private actors, NGOs and different levels and sectors of public administration in local cluster and networking development strategies be facilitated.

- The private sector lead cluster initiatives, with the public sector playing a catalytic role according to national and local priorities (e.g., *interalia*, facilitating private investment with public incentives, facilitating seed funding and monitoring the results of network initiatives).

- Public and private sector bodies foster the growth of clusters (existing and embryonic) by: improving their access to accommodation and efficient communications and transport infrastructures; facilitating local specialisation in university/industry linkages; disseminating targeted information, including on locational advantages and investment attractiveness; promoting suppliers' networks, technical support services, learning circles and other collaborative undertakings.

Policy Measures to Promote Clustering and Networking of SMEs

Following sub-chapters describe the checklist items for evaluating Daegu Initiative elements in this area, based on previous literature reviews and international government activities. To evaluate deliberate efforts of the member economies, we ask the following checklist items, which were determined according to the elements of Daegu Initiative. There are four elements for area D: 1) Policy for clustering SMEs by region; 2) Policy for clustering SMEs by industry; 3) Policy for promoting clustering SMEs; 4) Strengthening networks among clusters.

2. Policy for Clustering SMEs by Region

The first checklist item asks whether there are policies which provide incentives for regional clustering.

D-1. What kinds of policies exist that provide incentives for the regional clustering of firms? Are there policies specifically designed for facilitating regional networks between public research institutes and SMEs?

As previously stated, the public institutes could serve as a catalyst to foster regional networks. The spatial agglomeration may be accelerated due to facilitating policies, just as SME exporter development policy provides tax incentives to those located within export promotion area. In general, governments provide incentives to the firms indirectly by providing low cost services or taking special measures to establish public research institutes. In Korea, Daeduk cluster declared as special region where previously non-for-profit organizations can set up profit-seeking subsidiary firms.

<Box 7-3> Daedeok Innopolis

Daedeok Science Park evolves to Daedeok Innopolis:
Established in 1973, Daedeok Science Park is now recognized as "Daedeok Innopolis", as more than 700 firms are now active in the region. Manpower to carry out research has also risen to 18,796 in 2007, 6,800 of whom are Ph.D degree holders. Daedeok Innopolis was declared by a special law. The special law allows government research institutes to create spin-off firms under holding company. The government policy created a business friendly environment with an intention to develop the cluster of government research institutes into a more vibrant research-to-business cluster.

Member economies are requested to report the existence and effectiveness of relevant policy programs. As in the previous chapters, for answering most of the questions in the checklist items, we suggest a 5 point system. When a checklist item asks whether a member economy has a certain program, measure, or legislation, the member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the provisions are to be introduced. If the economy submits 3, it should explain why the economy feels that no such provisions are necessary. If the economy submits 4, it should explain why the economy considers the provisions to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a 'best practice report' which includes details on why the processes were needed, what the goals were, how the process works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

The second checklist item asks whether there are special subsidies or policies for SMEs and clustering by the regional government.

D-2. Are there special subsidies / policies for SMEs prepared by regional governments?

Simultaneous efforts from both federal and regional government increases probability for a successful development of SME cluster. Therefore it is appropriate to check the support level of regional governments. Local government may provide matching funds to regional innovation center for SMEs, either in the form of annual subsidy or lump-sum funding (including the donation of real estates. Member economies should report according to the above mentioned "5 point system."

3. Policy for Clustering SMEs by Industry

For this element, we suggest two checklist items. The first is about setting up the fourth pillar agency (non-profit private organization), and the second is about direct subsidy for SMEs.

D-3. Does government pay special attention to industrial associations comprised mainly of SMEs?

Networking of SMEs can occur at various levels. It can be regional association of SMEs and of the same profession. This question addresses firms that share a product market with similar use of technology. Although industrial association differs from spatial clusters, the branches of industrial association tend to be organized according to geographic distribution of member firms. However, for the next cycle of the Daegu Initiative, we recommend this element be changed to 'SME networking by industry.'

Certain industries present higher share of SMEs. Industrial associations of light industries, such as craft work and textile industries, may function as networking centers for SMEs. The associations can be representative body to apply for various government research projects in place of otherwise ineligible member SMEs. The association can be effective channel to deliver SMEs' opinions about government policy.

The member economies are requested to report their response for this item according to the 5 point system.

D-4. Does government provide benefits for SMEs when they participate in industrial districts?

In order to emulate the success of industrial districts in Northern Italy, governments provide various incentives to embryonic clusters. Federal government may subsidize regional governments when the development plan of regional government fit its industrial specialization, and then the subsidies may flow to SMEs in the region. The subsidies are usually in the form of special funds for SMEs in the industrial cluster. For example, SMEs within the industrial cluster can access to government guaranteed low interest loans when they restructure manufacturing facilities. The member economies are requested to report their response for this item according to the 5 point system.

4. Policy for Promoting Clustering SMEs

This element includes policy measures that are not discussed elsewhere. Although it can extend to marketing promotion for local SMEs, such content will be discussed in a separate Area of Daegu Initiative – "Establishing a Market Consistent Economic Environment". Therefore, the main focus of this element lies in fostering SMEs and establishment of business incubating centers. Independent incubating centers may be located in vicinity of campus or on-campus, and for some countries, they can be located in government establishments with strong government research institutes, business incubating centers

D-5. How many public incubating centers are operated and how much resources are invested for its operation? - Please provide financial support level of government in terms of the absolute amount and relative share of funding (public/ private).

Policymakers acknowledge business incubators as the most effective artificial way to prop up industrial clusters. Almost every APEC member economy operates business incubators but the patterns of government involvement differ. This question simply asks the quantitative level of support. Detailed numbers on the number and amount of financial investment are preferable. Qualitative comments about the effectiveness of setting up incubating centers would also be helpful.

D-6. Are incubating centers mainly located at university campuses, private sector buildings, or government research institutes?

Each APEC economy has different national innovation system, and the system affects the central organization to host incubating centers. The location of business incubators can be university-based or be independent public centers.

Member economies are required to provide the answer the number of business incubating centers (BIs) in following manner (number of BIs in university, public research institution, government subsidized private BIs, independent private BIs). It should be accompanied by short comments on the interim-evaluation on effectiveness of these diverse BIs.

5. Strengthening Networks among Clusters

D-7. Are there policies to promote knowledge sharing between different clusters or between industrial associations (which are mainly comprised of SMEs)

Benchmarking the success of other regional clusters is encouraged for diffusing the virtue of industrial clusters. Some governments pick up industries that share common technologies without competing in a same market. In such cases, government agencies provide a small amount of funds for professional meetings (engineer forums) from heterogeneous industries. Member economies are requested to report self-evaluations according to the previously suggested five- level guideline.

D-8. Are there policies to link clusters internationally? Does government sponsor international SME centers to encourage global operation of SMEs?

SMEs are under pressure to compete in the global market. However, the limited information monitoring capacity of individual SMEs demands a launch of an SME agency to collect information on foreign markets. Advanced activities include international business centers for SMEs to collaborate with venture capitalists / technological gurus of advanced countries. Following <Box 7-4> is an example of such activities.

<Box 7-4> Mexico's International Center for SMEs: TechBA

Mexico Builds Business Accelerator for SMEs in Foreign Industrial Clusters: Mexico implements special centers that help growing SMEs to realize their potentials. TechBA is a package program that provides international business acceleration centers for SMEs. The Mexico government selects high-growth, high technology SMEs in general, and allows them to access foreign resources easily through specially designed international centers. Mexico has potential to exploit its double positioning as a member of Latin America and North America. SMEs that have strong competence in emerging technologies appreciate the TechBA program as one of most impressive and practical assistance from its government.

6. Others: State of Cluster Development Index

The World Economic Forum publishes "Global Competitiveness Report", where "State of Cluster Development" index indicates the competitiveness of national environments. It can be an appropriate measurement for evaluating the overall cluster environments. Although the index may not demarcate the policy effectiveness from natural improvement, it may serve as a relatively consistent index for comparing member economies' efforts on building innovative cluster of SMEs.

7. Summary

In the literature review on SME clusters, we extracted essential factors for cluster developments. Building complementary linkages through establishing catalyst institutes and organizations is identified as the critical factor for policy implementation. However, for the second cycle of the Daegu Initiative, financial incentives to organize industrial, professional, regional SME associations need to be on the checklist items.

The elements of area D should be restructured for the second round. Networking in a supply chain may extend to marketing promotion and procurement policies. The distinction between industry-based clustering and geographical clustering could be of

less impact in policy evaluation, and business incubating can be added as an element since the topic is dealt seriously in many member economies. Therefore, the first element should be modified to include the administrative effort to link federal and regional governments to develop regional clusters. The second element, industrial clustering is the most important element in this area, and should remain in the second round. The third element (cluster elsewhere not specified) should be modified to include policies to develop clusters based on incubating start-ups. The fourth element should include not only relationships between clusters but also between firms, particularly relationships between large firms and SMEs.

<Table 7-2> Suggestions for the Second Round of the Daegu Initiative for Area D: Network/ Cluster

Element	Definition	Sub-element
1. Policies for clustering SMEs in association with regional governments	Some regional areas stand out in development of clusters. SMEs in the region may benefit from specially devised policy measures.	*1. What kinds of policies exist that provide incentives to the regional clustering of firms?*
		2. Does government establish regional innovation centers? Are there policies designed for facilitating regional networks between public research institutes and SMEs?
		3. Are there special subsidies / policies for SMEs from regional government?
2. Policies for clustering SMEs by industry	- Industrial cluster can be strengthened by government's effort to build efficient supply chain in a specific region.	*4. Does government pay special attention to industrial associations comprised mainly of SMEs?*
		5. Does government provide benefits for local supplier (SMEs) by setting up industrial districts?
3. Policies for promoting incubation of SMEs	- Promoting SME cluster can be best realized by creating innovative small firms. - Establishing business incubating center is identified as the most effective policy measure.	*6. How many public incubating centers are operated and how much resources are invested for its operation? - Please provide financial support level of government in terms of the absolute amount and relative share of funding.*
		7. Are the incubating centers mainly located at university campus, private sector building, government research institutes?

4. Strengthening networks among clusters and firms	- Networking beyond geographical proximity can also help SMEs to enhance competitiveness.	*8. Are there policies to promote knowledge sharing between different clusters or between industrial associations (mainly comprised of SMEs) ?*
		9. Are there policies to link the clusters internationally?
		10. Does government sponsor international SME centers to encourage global operation of SMEs?
		11. Does government implement policies aimed for building better relationship between suppliers and large manufactures?

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Chapter 8: Area E: Establishing Appropriate Legal and Regulatory Structure

1. Background

In the original SPAN 1998, the importance of establishing appropriate legal and regulatory structure for encouraging innovation was recognized, but not properly emphasized. "Effective regulatory environment" was placed within the broader category of "policy environment." In recent years, there has been wide recognition that legal and regulatory structure plays important part in encouraging innovation, as well as facilitating the activities of SMEs. As a result, effective legal and regulatory environment has been given more emphasis. Appropriate legal and regulatory structure is also closely related to establishing a market consistent economic environment.

In the Daegu Initiative, even though these two areas are closely related, they are considered separately. In the 2005 Daegu Initiative report to the SME ministers, "appropriate legal and regulatory structure" is described as follows:

> Robust legal and regulatory structures designed to establish and enforce intellectual property rights, competition policy, and facilitate the quick and inexpensive establishment of firms are vital to all SMEs and especially important in encouraging innovation among SMEs. The absence of such structures can stifle innovation while undermining the ability of SMEs to compete.

Thus, according to the text of the Daegu Initiative, this area should examine an economy's IPR system, competition policy, and laws and regulations dealing with firms' entries and exits. However, as it currently stands, there is some overlap between "the importance of establishing an appropriate legal and regulatory structure," and "establishing a market consistent economic environment."

Academic Research on Regulation, SMEs and Innovation

In the 1980s and 1990s, there have been numerous studies on innovation and their effect on economic development and growth, as well as the need for an appropriate legal and regulatory structure for economic development and growth. While these two strands of research originally began as separate branches of research, in the late 1990s and early 2000s, researchers began to realize that these two branches were related, as effective legal and regulatory structure also encouraged and facilitated innovation in the economy. Further, studies in regulatory reform had shown that the burdens of regulations fell disproportionately on SMEs. Thus, efforts to vitalize SMEs, including innovative SMEs, must include regulatory reform.

The importance of innovation on economic growth has been recognized since Schumpeter (1942), and probably even before. However, innovation and technological growth was re-emphasized in the endogenous growth literature in economics during the

late 1980s and 1990s[38]. In those papers, it was recognized that R&D and stock of knowledge had significant external spillover effects. Countries which were able to build a larger stock of knowledge could grow faster. Thus, researchers began to examine what factors made the stock of knowledge of some countries grow faster than others, and these researchers began to emphasize the link between growth and institutions including legal and regulatory structure[39].

Perhaps the laws most important to innovation are the intellectual property right laws. It has been widely recognized that appropriate intellectual property protection is necessary to promote innovation. Unless the innovator can appropriate a substantial proportion of the value of his innovation, the innovator will not have the appropriate incentive to innovate. We should note that appropriate intellectual property protection does not always mean that protection should be absolutely powerful, since it may block positive spillover effects from an innovation[40].

However, intellectual property protection is not the only relevant law when discussing innovation. Baumol (2004) points out that one of the most effective ways of disseminating new technology is through market transactions, which not only results in productive allocation of new technology, but also the acceleration of positive spillover effects[41]. Such transactions require proper legal and regulatory environment. Helpman (2004) states that, without the protection of property rights,[42] capital formation, land development and investment cannot take place. For this reason, institutions that promote the rule of law, enforce contracts, and limit the powers of rulers are important for economic development[43]. Baumol (2004) points out that if the rule of law is not established and there is rampant corruption, entrepreneurial talent which would be used for productive innovation would be diverted into illegal and unproductive activities[44]. Further, one of the results of the endogenous growth literature was that, in order to innovate, it is important that capital be allocated to their most efficient uses (which includes R&D), and the institutional features, which includes legal and regulatory structure, can affect the returns to R&D[45].

Policy Research on Regulation, SMEs and Innovation

Most of the literature cited above was academic, concentrating on theory and aggregate data. However, around the same time as the above studies were taking place, various international and regional agencies, most prominently the OECD, were engaged in a more practical, policy-oriented study about regulations. According to OECD (1997a), regulations have numerous dynamic effects on innovation, both positive and negative. Proper regulations can maintain a certain level of openness and competition in

[38] : Most notably, Romer (1986)
[39] : Helpman (2004) Chapters 4 and 7.
[40] : See Baumol (2002) Chapter 4 and Lessig (2002)
[41] : Baumol (2004) Chapters 6 and 13
[42] : including intellectual property rights,
[43] : Helpman (2004) p.112
[44] : Baumol (2004) Chapter 5.
[45] : Helpman (2004), p.44

product markets which provides the necessary conditions for research and innovation. Regulations can place technical demands on industries and act as focusing devices for their research efforts, sometimes even creating new industries and products. Environmental regulations have contributed to creating the "environment industry." Good administrative regulation ensures that there are fair "ground rules" for the operation of the public and private sectors, which can affect the innovation as in the case of small business start-ups[46].

OECD (1997a) goes on to state that inappropriate or burdensome regulations can erect barriers to the development of new, improved products and production processes, and they can encourage or discourage research efforts by firms. Further, they can distort the choice of technologies that are explored and adopted; and they can create barriers to innovation by increasing the uncertainties and costs of the development process[47].

OECD (1997a) makes several recommendations, which includes suggestions for streamlining regulations, and making sure that SMEs receive proper assistance. The report states that smaller firms, and particularly new firms, have a distinct role in economic growth and development of innovation. However, regulatory burden falls most heavily on small firms which have fewer managerial and financial resources to invest in paperwork and compliance. Suggestions include regulatory information and assistance centers for SMEs, supplemented by appropriate SME financing and other programs[48].

Recently, OECD has also placed great importance on SME innovation. For its 2nd OECD Ministerial Conference on SMEs, held on June 2004 in Istanbul, Turkey, OECD chose "Promoting Entrepreneurship and Innovative SMEs in a Global Economy" as its topic. In the conference, it was noted that regulatory and administrative burdens can impinge adversely on entrepreneurial activity, and legal entry barriers should be avoided unless their benefits are very clear since barriers appear to be associated with less private investment, higher consumer process and greater corruption. The conference also suggested that the best approach to minimizing regulatory and administrative burdens is to make the goal of minimizing regulatory and administrative burdens a part of a broader regulatory quality agenda in which administrative simplification is an ongoing process, and where all regulations are continuously revised and simplified. Measures such as regulatory impact assessments (RIA) and administrative simplification procedures can also help to address some of these problems[49]. Among the key policy recommendations from that conference, was the recommendation to "ensure the reduction and simplification of administrative regulations costs which fall disproportionately on SMEs.[50]"

After the conference, the OECD ministers issued a declaration on fostering the

[46] : OECD (1997a) pp.284-285
[47] : OECD (1997a) p.285
[48] : OECD (1997a) p.295
[49] : OECD (2004) p.10
[50] : OECD (2004) p.12

growth of innovative and internationally competitive SMEs, which in part, stated that the ministers reaffirm the need to support the development of the best set of public policies that will foster the creation and rapid growth of innovative SMEs. Among such policies are:

- Enabling regulatory frameworks, which are developed taking into account the needs of SMEs and facilitating their integration into the formal sector; tax systems that entail low compliance costs; the transparent and equitable application of rules and legislation; simple and transparent license and permit systems; efficient bankruptcy laws and procedures; understandable and coherent product standards in world markets; clearly defined property rights; fair and reasonably priced dispute settlement procedures; and light, predictable administrative procedures; and
- Laws and systems of governance that support the development and diffusion of new technologies in ways that enable and encourage SMEs to take full advantage of them, notably by strengthening the science-innovation interface; ensuring that intellectual property rights systems are coherent, easy to understand and used effectively; and promoting access to and use of quality information and communication infrastructure and promoting enhanced security and trust in the digital economy.

APEC's Efforts on Economic Legal Structure, Regulation and SME Innovation

APEC has long been interested in helping its member establish an effective economic legal structure and an effective regulatory system. The work on strengthening economic legal structure is carried out by the Strengthening Economic Legal Infrastructure (SELI) Coordinating Group, which began as a part of the Committee on Trade and Investment (CTI), but was transferred to the Economic Committee. SELI Coordinating Group encourages continuing regulatory and institutional reform, particularly by building the capacity and skills of individuals in the area of economic legal infrastructure, including regulatory and institutional reforms, and corporate governance. It also works to improve the capacity of legal institutions and government agencies in applying and enforcing rules on corporations and competition[51].

Work on deregulation and regulatory reform is carried out by the Competition Policy and Deregulation Group within the Economic Committee. Deregulation and regulatory reform has been a crucial component in the Osaka Action Agenda (OAA), and they are featured prominently in the Trade and Investment Liberalization Individual Action Plan (TILF-IAP) and Collective Action Plan (TILF-CAP). <Box 3.5-1> states the objective of deregulation and regulatory reform as outlined in the OAA and TILF-IAP and CAP.

<Box 8-1> Osaka Action Agenda "Deregulation and Regulatory Review"

Objective
APEC economies will facilitate free and open trade and investment in the Asia-Pacific Region by, inter alia:
a. enhancing the transparency of regulatory regimes (including through the use of new technologies);

[51] : http://www.apec.org/apec/apec_groups/economic_committee/strengthening_economic.html

b. eliminating domestic regulations that may distort or restrict trade, investment or competition and are not necessary to achieve a legitimate objective; and *c.* speeding up reforms which encourage efficient and well functioning product, labour and capital markets and supportive of institutional framework.
Guidelines Each APEC economy will: *a. explore economy wide processes for the transparent and accountable identification and review of domestic regulations that may distort or restrict trade, investment or competition;* *b. implement and maintain standards consistent with the APEC Leaders' Transparency Standards;* c. consider the adoption of regulatory reform to reduce those distortions and their resulting costs, whilst maintaining the achievement of legitimate objectives; and d. promote the consideration of competition policy in regulatory reform.
Collective Actions APEC economies, taking into account work done in other areas of APEC activity will: a. publish annual reports detailing actions taken by APEC economies to deregulate their domestic regulatory regimes; and b. develop further actions taking into account the above reports, including; i. policy dialogue on APEC economies' experiences in regard to best practices in deregulation, including the use of individual case studies to assist in the design and implementation of deregulatory measures, and consideration of further options for a work program which may include: - identification of common priority areas and sectors for deregulation; - provision of technical assistance in designing and implementing deregulation measures; - dialogue on implementation of APEC Leaders' Transparency Standards on Regulatory Reform; - examination of the possibility of establishing APEC guidelines on domestic deregulation; and ii. regular dialogue with the business community, including a possible symposium.

In 1999, APEC Ministers endorsed the APEC Principles to Enhance Competition and Regulatory Reform and approved a "road map" which established the basis for subsequent work on strengthening markets in the region. In 2001, APEC economic leaders agreed that the OAA should be broadened to "reflect fundamental changes in the global economy," including strengthening the functioning of markets. The implementation of competition policy and deregulation provides markets with a framework that encourages market discipline, eliminates distortions and promotes economic efficiency. Therefore, the area of competition policy/deregulation is one of the key elements contributing to both the "road map" and the broadening of the OAA[52].

In 2002, following the instructions of the economic leaders, APEC established transparency standards, which included transparency standards on competition law and policy and regulatory reform.

Since 2001, APEC and OECD have formed a cooperative relationship to explore regulatory reform and help formulate effective regulatory policies for APEC member economies. The most important result of this cooperative initiative may be the APEC-OECD Checklist on Regulatory Reform. The Checklist contains measures to facilitate regulatory reform and raise the quality of regulations.

APEC has also emphasized the importance of intellectual property rights. Work on IPR in APEC is carried out by the Intellectual Property Rights Experts' Group (IPEG),

[52] : http://www.apec.org/apec/apec_groups/economic_committee/competition_policy.html

which is a part of the CTI. IPEG implements a work program which aims to: 1) deepen the dialogue on intellectual property policy; 2) survey and exchange information on the current status of Intellectual Property Rights (IPR) protection and administrative systems; 3) study measures for the effective enforcement of IPR; 4) fully implement the Agreement on Trade-related Aspects of Intellectual Property Rights (TRIPS); and 5) facilitate technical cooperation to implement TRIPS..

IPR is also a component of the OAA and TILF IAP and CAP. The OAA objectives for IPR are listed in <Box 8-2>.

<Box 8-2> Osaka Action Agenda "Intellectual Property Rights"

Objective

APEC economies will:

a. in conformance with the principles of the TRIPS Agreement:
   - ensure adequate and effective protection, including legislation, administration and enforcement of intellectual property rights,
   - foster harmonization of intellectual property rights systems in the APEC region, promote transparency strengthen public awareness activities,
   - strengthen public awareness activities, and
   - promote dialogue on emerging intellectual property policy issues, with a view to further improve intellectual property rights protection and use of the intellectual property rights systems for the social and economic benefit of members.

b. address the challenges for intellectual property rights arising from the rapid growth and developments of the New Economy by:
   - establishing legal frameworks to promote creative endeavor and encourage on-line activity;
   - ensuring a balance between the different rights and interests of copyright owners, users and distributors;
   - establishing an appropriate balance among all stakeholders, including content providers and ISPs in terms of the liabilities for infringing intellectual property on-line; and
   - providing incentives for innovation without sacrificing the community's interest in reasonable access to information.

Guidelines

Each APEC economy will:

a. ensure that intellectual property rights are granted through expeditious, simple, and cost-effective procedures;

b. ensure that adequate and effective civil and administrative procedures and remedies are available against infringement of intellectual property rights;

c. implement and maintain standards consistent with the APEC Leaders' Transparency Standards; and

d. provide and expand bilateral technical cooperation in relation to areas such as patent search and examination, computerization and human resources development in order to ensure adequate intellectual property right protection in compliance with the TRIPS Agreement.

Collective Actions

APEC economies will take the following collective actions:

a. Deepening the Dialogue on Intellectual Property Policy;
b. Support for Easy and Prompt Acquisition of Rights:
   (i) Participation in International IP-related Systems
   (ii) Establishing Internationally Harmonized IPR Systems
   (iii) Cooperation on Searches and Examinations;
c. Electronic Processing of IPR-related Procedures:
   (i) Electronic Filing Systems
   (ii) Dissemination of Information by Electronic Means;
d. Appropriate Protection of IPR in New Fields:
   (i) Protection for Biotechnology and Computer-related Inventions
   (ii) Protection for Geographical Indications
   (iii) Electronic commerce;
e. Cooperation for Improvements to the Operation of IP System;
f. Establishing Effective Systems for IPR Enforcement:
   (i) Establishment of Enforcement Guidelines
   (ii) Exchange of Information Concerning IPR Infringement
   (iii) Cooperation with other fora/authorities
g. Promoting IP Asset Management in APEC Economies;

h.	Raising Public Awareness;
i.	Facilitation of Technology Transfer through Ensuring IP Protection.

Finally, technical standards and conformance can also affect innovative SMEs. Technical standards can strongly influence the development of a technology, since they can limit developments in certain directions and aspects of a technology, while encouraging some other directions. Governments must balance various interests when establishing technical standards. If the standards are too tight, it can limit modifications of the technology, and create excessive monopoly profits for a small number of firms, and hurt consumers by limiting their choices. On the other hand, if the standards are too loose and there is a wide variety of technical standards available, it may create problems in interchangeability of technology, and there may be losses due to 'orphan technology', where some consumers and producers backed a 'losing' technology.

SMEs face particular problems in technical standards and conformance. Because SMEs often does not have sufficient resources, innovative SME products have a harder time being approved by national and international technical standards and conformance authorities, and thus innovative SME products may not be accepted in the marketplace.

APEC's Sub-Committee on Standards and Conformance (SCSC) within the Committee on Trade and Investment works on the standards and conformance related components of APEC's trade and investment liberalization and facilitation agenda. This agenda includes the reduction of negative effects on trade and investment flows caused by differing standards and conformance arrangements in the region. The agenda also involves further developing open regionalism and market-driven economic interdependence through a number of activities including encouraging greater alignment of APEC Member Economies' standards with international standards[53].

Standards and conformance is another important part of OAA, TILF IAP and CAP. <Box 8-3> lists OAA objectives for standards and conformance.

<Box 8-3> Osaka Action Agenda "Standards and Conformance"

Objective

APEC economies will, in accordance with the Declaration on APEC Standards and Conformance Framework and with the Agreement on Technical Barriers to Trade (TBT Agreement) and the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) attached to the WTO Agreement:

a. align their domestic standards with international standards;
b. endeavour to actively participate in international standardisation activities;
c. promote good regulatory practice for the preparation, adoption and application of technical regulations in the APEC region;
d. achieve recognition of conformity assessment including mutual recognition arrangements in regulated and voluntary sectors;
e. promote cooperation for technical infrastructure development to facilitate broad participation in mutual recognition arrangements in both regulated and voluntary sectors; and
f. ensure the transparency of the standards and conformity assessment of APEC economies.

Guidelines

Each APEC economy will:

[53] : http://www.apec.org/apec/apec_groups/committee_on_trade/sub-committee_on_standards.html

a. continue alignment of domestic standards with international standards in the priority areas which the SCSC will identify for alignment in the short to medium term in pursuing this goal;
b. participate actively in the international standardization activities of international standardizing bodies and encourage relevant bodies in their economy to participate in the international standardizing bodies accordance with the rules and procedures of these organisations;
c. consider to pursue trade facilitation in information and technology products;
d. participate[54] in recognition arrangements[55] of conformity assessment including mutual recognition arrangements in regulated sectors through: (i) the development of bilateral, multi-sectoral recognition arrangements, which might, at a later stage, provide the basis for plurilateral arrangements; and (ii) the development of plurilateral recognition arrangements in particular sectors;
e. encourage relevant bodies in their economy to participate in work programs of the five Specialist Regional Bodies[56] and to participate in recognition arrangements[3] of conformity assessment including mutual recognition arrangements in the voluntary sectors;
f. improve and maintain the level of their technical infrastructure to facilitate broad participation in recognition arrangements in both the regulated and voluntary sectors, with the SCSC supporting the development of technical infrastructure through economic and technical cooperation, where needed, to improve calibration and testing facilities and the training of personnel, in pursuing this goal;
g. continuously strive to increase transparency of their standards and conformance requirements by means of facilitating the dissemination of such information through publications and electronic homepage and publicizing the availability of these means;
h. implement and maintain a standards consistent with the APEC Leaders' Transparency Standards; and
i consider participation in:
(i) the Treaty of the Metre (La Convention Du Metre); and
(ii) the Treaty of OIML (La Convention Instituant Une Organisation Internationale De Metrologie Legale) in accordance with the rules and procedures of these treaties

Collective Actions
APEC economies will take Collective Actions with regard to standards and conformance in the following four areas:

ALIGNMENT WITH INTERNATIONAL STANDARDS AND ACTIVE PARTICIPATION IN INTERNATIONAL STANDARDIZATION
APEC economies will:
a. continue identifying additional priority areas for alignment with international standards;
b. continue to report on the progress in their alignment plans every year;
conduct a comprehensive review of their alignment work in 2005; and
d. continue to promote active participation in international standardization activities.

GOOD REGULATORY PRACTICE
APEC economies will:
Continue to update the consolidation of materials in the Good Regulatory Practice Database as well as to investigate means of enhancing regulatory practice in the APEC region through a program of case studies and seminars with a particular focus on performance-based regulations and sector-specific good practices.

RECOGNITION OF CONFORMITY ASSESSMENT
APEC economies will, in cooperation with relevant Specialist Regional Bodies, where appropriate:
a. review the implementation and use of mutual recognition arrangements;
b. continue to consider mechanisms to facilitate the recognition of conformity assessment results;

[54] It is recognised that not all member economies have the pre-requisite technical infrastructure to enable them to fully participate in mutual recognition arrangements. Cooperation among APEC economies to strengthen member economies' technical infrastructure is therefore necessary (see Guideline (e)).
[55] The term "mutual recognition arrangements" does not necessarily mean an instrument or instruments which creates or create legally-binding international obligations.
[56] Asia Pacific Laboratory Accreditation Cooperation (APLAC)
Asia Pacific Legal Metrology Forum (APLMF)
Asia Pacific Metrology Program (APMP)
Pacific Accreditation Cooperation (PAC)
Pacific Area Standards Congress (PASC)

c. review and improve the effectiveness of the APEC Mutual Recognition Arrangement on Conformity Assessment of Foods and Food Products, the Arrangement for the Exchange of Information on Toy Safety, the APEC Arrangement for the Exchange of Information on Food Recalls, and the APEC Mutual Recognition Arrangement on Conformity Assessment of Electrical and Electronic Equipment by among others, looking into the possibility to adopt an information technology management system;
d. implement the work program on trade facilitation in information technology products, by 2005 in the case of industrialized economies and by 2008 in the case of developing economies; and
e. encourage establishment of and participation in a network of mutual recognition arrangements in the voluntary sector by 2005.

COOPERATION ON TECHNICAL INFRASTRUCTURE DEVELOPMENT
APEC economies will:
a. undertake projects for the implementation of the Mid-Term Technical Infrastructure Development Program; and
b. conduct a comprehensive review on implementation of the above program after 2005;

TRANSPARENCY
APEC economies will:
a. update the APEC Contact Points for Standards and Conformance Information, which have been uploaded to the APEC Homepage;
b. develop and keep current the database on conformity assessment operators and their activities/service offered and establish an APEC Cooperation Center for Conformity Assessment;
c. promote the transparency of regulatory systems and standards by maintaining appropriate and accessible information date basis, including Directory of Food Trade Contacts in the Directory of Food Trade Contacts; and
d. implement and maintain standards consistent with the APEC Leaders' Transparency Standards.

OTHER ACTIVITIES
APEC economies will:
a. pursue closer cooperation with the Specialist Regional Bodies in line with a Statement of Commitment to Mutually Agreed Objectives;
b. monitor the developments within the WTO Committees on the Technical Barriers to Trade and Sanitary and Phyto-Sanitary Measures, as well as undertake projects for the implementation of the APEC Strategic Plan on WTO-Related Capacity Building;
c. pursue better coordination with other APEC fora; and
implement the reform of the SCSC through the rationalization of its agenda, priority setting exercise and better coordination with other groups

Legal and Regulatory Structure in the Daegu Initiative

For the Daegu Initiative, in the area of legal and regulatory structures, there are five elements: "providing legal support for innovative SMEs," "promoting public institutions' purchases of SME products," "enhancing support for technically competent SMEs," "enhancing support for the R&D area," and "others." For the first round of the Daegu Initiative, these elements should be used as the relevant criteria for examining the legal and regulatory structure of each APEC economy, since these elements have already been chosen by consensus of the APEC economies, and since they represent outcomes of good planning.

There is some concern, however, that these elements of this area in the Innovation Action Plan (IAP), as they currently stand, do not properly reflect the broader discussion concerning effective legal and regulatory structure. In the next round of the Daegu Initiative, serious consideration should be given to change the elements. Some recommendation will be given in the summary section below.

2. Providing Legal Support for Innovative SMEs

For this element, we start with the definition of an innovative SME. There is a diverse range of SMEs in the economy, some of which are innovative, and some which are not. Further, the meaning of innovation may differ from economy to economy. For some economies, innovation means technical innovation, to further the frontiers of technology. For other economies, innovation may imply adopting and adapting technology from advanced economies, or adapting traditional technologies for modern use. For some economies, managerial and organizational innovation may be more important than technical innovation. To observe the diversity of innovation in the APEC economies, we ask the following checklist item:

E-1 *Does your economy have a legal definition of an innovative SME? If not, does your economy have a widely used working definition of an innovative SME?*

Each economy should report whether they have a legal or working definition, and if there is a definition, provide it.

As we have emphasized above, the most important set of laws and regulations for technical innovation is the IPR laws. Thus, the first task of any government seeking to foster technical innovation would be to establish appropriate IPR laws. Firms will not invest in innovation unless there are positive returns to their investment, and because knowledge is, by its nature, public good,[57] IPR laws must define the property rights of the innovators for the knowledge that they have developed, and allow the innovators to profit by their innovations.

There are some concerns that if the IPR laws are too strict and rigid, it will limit the positive spillover effects from stock of knowledge, and restrict the growth of developing countries. However, Baumol (2004) has argued that the historical evidences show that even where there is strong IPR protection, there are still positive knowledge spillovers[58]. Thus, there is a solid case to be made that to facilitate innovation in an economy, a good set of IPR laws are necessary.

There are several international agreements to protect copyrights internationally, such as the Berne Convention for copyrights and Paris Convention for patents. Also, the WTO TRIPS agreement brings many of the conditions specified in these conventions under the jurisdiction of the WTO. Thus, TRIPS agreement signifies a minimum level of IPR that WTO members must adhere to.

While these agreements were designed to protect intellectual property rights internationally, the measures specified in these agreements can be used to protect both foreign and domestic intellectual property rights. Thus, consistency with WTO TRIPS

[57] : Economists define public good as having characteristics of non-rivalry and non-excludability. Thus, unless there is appropriate legal protection, anyone can appropriate and use knowledge without informing or compensating the inventors or discoverers.
[58] : Baumol (2004) Chapter 6.

can be considered the minimum level of necessary protection for IPR.

We note that conformance and consistency with WTO TRIPs Agreement is an important item in the TILF-IAP. Each APEC member economy reports whether its IPR regime is consistent with the TRIPs Agreement, as well as their recent and planned policy initiatives on IPR in its TILF-IAP. Also, the trade policy review (TPR) in the WTO periodically evaluates whether a WTO member's IPR regime is broadly consistent with requirements of WTO agreements, including the TRIPs Agreement. According to these sources, the legal and regulatory regimes of all APEC member economies are broadly in line with TRIPs. However, there are differences in the level of enforcement.

Literature on SMEs often notes that when laws are complex, SMEs are at a disadvantage, since they often lack the manpower and resources to fully understand and comply with the laws. The problem is especially acute with IPR laws. According to OECD (2004), many SMEs in OECD countries lack basic awareness and competence about the IPR system. Obstacles include limited knowledge of the system, high costs and lack of adequate legal, business and technical support for developing a successful IPR strategy. Thus, the government should actively provide support for SMEs so that they can fully take advantage of the legal rights afforded to them by the national IPR laws, whether they are innovating firms which want to protect and profit from their innovations, or users who want to use the innovations developed by others. This is the second item in our checklist.

E-2. *Are there mechanisms to explain IPR laws to SMEs, and help SMEs make the most of rights and protection as specified in the national IPR laws?*

This item is similar to the recommendation in OECD (2004) which advised economies to "enhance SME awareness and knowledge of all elements of the intellectual property system." Measures can include strengthening the teaching of IPRs at universities; government-sponsored seminars and education sessions for SME representatives, and the establishment of government offices which can answer questions of SMEs and give legal advice. Member economies should report 1 if there is no such mechanism; 2 if there is such mechanism but it has not been effective, or if such mechanism is to be introduced in the near future (within 2-3 years); 3 if there is no such mechanism, but the economy does not believe there is a need for such mechanism, perhaps because SMEs already have effective access to information concerning rights and protections under the IPR laws; 4 if there is such mechanism and it is effective; and 5 if there is such a mechanism and it has been so effective that the economy believes its mechanism should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the mechanism is to be introduced. If the economy submits 3, it should explain why the economy feels that no such mechanism is necessary. If the economy submits 4, it should explain why the economy considers the mechanism to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a

"best practice report" which includes details on why the mechanism was needed, what the goals were, how the mechanism works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible). .

While IPR laws may be most important set of laws for innovative SMEs, other laws affect innovative SMEs as well. Ideally, laws (not limited to IPR laws) should be drafted in such a way that it does not place undue burden on SMEs. Thus, the third item in our checklist is:

E-3. *Are there processes in place to consider the effects of legislation on SMEs?*

When any legislation is drafted, before it is submitted to the legislative body, the effects of the legislation on SMEs should be considered. When implementation rules for laws are being drafted, their effects on SMEs should be considered.

Member economies should report 1 if there are no such processes; 2 if there are such processes but they has not been effective, or if such processes are to be introduced in the near future (within 2-3 years); 3 if there is no such processes, but the economy does not believe there is a need for such processes, perhaps because the effects on SMEs are already adequately considered using other means; 4 if there are such processes and they are effective; and 5 if there are such processes and they have been so effective that the economy believes they should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the processes are to be introduced. If the economy submits 3, it should explain why the economy feels that no such processes are necessary. If the economy submits 4, it should explain why the economy considers the processes to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the processes were needed, what the goals were, how the process works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible). .

The above checklist items dealt with 'inputs' into the legislative process. In other words, they were designed to check whether any new legislation or revised legislation would have an adverse effect on SMEs. It may be useful to check the 'output' side of the legislation as well; that is, to see, from the point of view of the businesses, how useful and helpful the legal structure is to SMEs.

While there is no comprehensive index designed to measure how much the legal system helps or hinders SMEs, there is a relatively neutral measure to examine how efficient is an economy's enforcement of contracts, which is perhaps the most crucial component of economic legal structure. Such measure is available from the World Bank's Doing Business Indicators. The indicator looks at the number of procedures, the number of days, and the cost for enforcing a contract. Thus, our checklist item may include the results of World Bank's Doing Business Indicator for enforcement of

contracts[59].

E-4 *How efficiently does your economy enforce private contracts?*

For this element, the World Bank's Doing Business Indicator on contract enforcement can be used to see how effective an economy's legal structure is. This information is available from the World Bank's Doing Business Indicator website (http://www.doingbusiness.org), and members should submit the statistics and ranking on "enforcing contracts" from the site. The information should include number of procedures, time (in days), and cost (as percentage of claim) and overall ranking. All this information is available from the website and the Doing Business report.

Some economies may institute a comprehensive plan to assist innovative SMEs and help them develop. Comprehensive plan would be useful in making assistance more efficient, since roles for various government agencies would be laid out explicitly, and any conflicts between various elements of the assistance plan would be revealed and amended. Also, when there is an explicit plan, the rights and responsibilities of government agencies as well as SMEs are specified, so all agents know what they have to do, and what to expect, making the assistance easier and more efficient. Thus, the next checklist plan asks:

E-5 *Does your economy have a comprehensive plan to assist innovative SMEs, and are they set in legislation?*

"Comprehensive" plan means that a single plan should encompass diverse (preferably all) issues facing the innovative SMEs, including (but not limited to) financing, establishing and closing a business, technical assistance, legal assistance, financial and fiscal assistance, subsidies, manpower assistance and legal assistance. A comprehensive plan should also be an overarching plan for innovative SMEs It should act as the "master plan" for developing innovative SMEs, and all (or most) measures to assist innovative SMEs should be subordinate to this plan, and follow this plan..

Member economies should report 1 if there is no such comprehensive plan; 2 if there is such a plan but it has not been effective, or if such a plan is to be introduced in the near future (within 2-3 years); 3 if there is no such plan, but the economy does not believe there is a need for such a plan; 4 if there is such a plan and it is effective; and 5 if there is such a plan and it has been so effective that the economy believes its comprehensive plan should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the plan is to be introduced. If the economy submits 3, it should explain why the economy feels that no such plan is necessary. If the economy submits 4, it should explain why the economy

[59] : One method of calculating the relative levels of contract enforcement is to take the numbers for each sub-category of World Bank's Doing Business "enforcing a contract" indicator, assign a proportional index number to each sub-category from 0 (lowest ranked in each sub-category) to 10 (highest ranked), and take the simple average of the three sub-category index numbers.

considers the plan to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the plan was needed, what the goals were, how the plan works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

3. Promoting Public Institutions' Purchases of SME Products

For this element, each member economy should highlight its efforts to publicize and inform about innovative SME products to potential customers in public institutions such as government ministries, agencies and state-owned corporations. Also, for the first cycle, each member economy should report any measures to encourage actual purchases of SME products by public institutions, and the percentage of total public institution purchases which were taken by SME products.

Research literature on SMEs often mentions that SMEs have several disadvantages compared to large companies. One of the most often mentioned disadvantage is marketing, since SMEs lack both capital and manpower. As a result, customers may not be fully aware of innovative new goods developed by SMEs, or may not be aware that goods and services sold by SMEs may be of comparable quality but less expensive than the products offered by larger companies. There is good case to be made that the lack of such information and knowledge is a market failure, and governments should assist SMEs in publicizing the superior SME products.

Many economies try to assist innovative SMEs through government procurement and purchasing[60]. Some economies have programs to bring innovative SME goods to the attention of purchasing agents for government agencies and state-owned corporations. Some economies also have programs to certify innovative SME products. Such certification helps innovative SME products in two ways: The certification publicizes the innovative SME product to the buying public, and the certification allows the government to implicitly guarantee the quality of the innovative SME product. Such measures allow the government to address the weaknesses of the SMEs and reduce the effects of the information market failure.

E-6. *Are there official processes or mechanisms to introduce innovative SME products to public institutions who may be potential customers?*

Member economies should report 1 if there is no such mechanism; 2 if there is such mechanism but it has not been effective, or if such mechanism is to be introduced in the near future (within 2-3 years); 3 if there is no such mechanism, but the economy does not believe there is a need for such mechanism; 4 if there is such mechanism and it is effective; and 5 if there is such a mechanism and it has been so effective that the economy believes its mechanism should be considered an APEC best practice.

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[60] : See Lee (2007)

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the mechanism is to be introduced. If the economy submits 3, it should explain why the economy feels that no such mechanism is necessary. If the economy submits 4, it should explain why the economy considers the mechanism to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the mechanism was needed, what the goals were, how the mechanism works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

<Box 8-4> Best Practice in Introducing Innovative SME Products to Public Institutions: Korean Procurement Service "Narajangtuh"

One of the best practice for introducing innovative SME products to potential customers may be Korea's "Narajangtuh" (National Marketplace) which is the Korean name for KONEPS (Korea ON-line E-Procurement System). Narajangtuh was established in September of 2002, and is run by Korea's Public Procurement System (PPS). It is similar to an on-line shopping mall[61], where institutions can purchase products through Korea's Public Procurement System, which can offer competitive prices to its customers through volume purchases from producers.

Narajangtuh offers products for sale not only to public institutions, but many private institutions as well. According to one news report, 36,000 public institutions and 170,000.private institutions. Its annual sales are estimated at 44 trillion won (approximately US$44 billion)[62].

In June 2007, the Narajangtuh introduced "superior product club" service, which introduces products which offers products which the PPS considers excellent. The service specifically emphasizes innovative products which uses new technology. Narajangtuh will provide information on these goods through a special section on its website, and through e-mail to subscribers. Further, PPS will co-develop user-created content (UCC) publicity material for its website with the product producers[63].

In addition to providing information about innovative SME products and certifying superior innovative SME products, some economies give explicit preference to SME products in government procurement. These economies have guidelines, rules or laws requiring that government agencies and state owned enterprises purchase a certain percentage of their total procurement from SMEs. For example, the United States strongly suggests that its government agencies purchase 23% of its procurement from small businesses. The agency must submit a report to Congress each year on whether

[61] : Web address for the Korean site is http://www.g2b.go.kr , and the address for the English site is http://www.pps.go.kr/english/ .
[62] : From an article in Money Today (Korean) June 7, 2007, available from http://stock.moneytoday.co.kr/view/mtview.php?no=2007081013455105005&type=1&outlink=2&EVEC (last visited April 26, 2008)
[63] : From an article in Money Today (Korean) August 10, 2007, available from http://stock.moneytoday.co.kr/view/mtview.php?no=2007060713373555432&type=1 (last visited April 26, 2008)

they have fulfilled this goal, and if an agency fails to meet the goal, explain why. Other countries such as Korea also have similar requirement, though the legal requirements and restrictions may be less strict.

From the wording of this particular element, it seems that the intent of the APEC representatives who chose this element is to consider whether the member economies operate such preferential purchasing requirement for SMEs. In that spirit, we offer this particular checklist item. However, such preferential treatment for SMEs, especially if mandated by legislation, may not be desirable, since it may not be compatible with principles of competition and it may also not be consistent with maintaining a market-friendly competitive environment. Such preferences may allow less efficient and less innovative SMEs to stay in business. Thus, such preferential policies may act to hinder innovation rather than facilitate it. Therefore, while we include this item in the first round of the Daegu Initiative, this item should be eliminated in the future round, or since such preference can act as a de-facto government assistance, move this checklist item to Area C, which deal with providing financial incentives to innovative SMEs..

E-7. *Are there an official rule or guideline encouraging public institutions to purchase from SMEs?*

Member economies should report 1 if there is no such rule or guideline; 2 if there is such guideline but it has not been effective, or if such rule or guideline is to be introduced in the near future (within 2-3 years); 3 if there is no such rule or guideline, but the economy does not believe there is a need for such rule or guideline; 4 if there is such a rule or guideline and it is effective; and 5 if there is such a rule or guideline and it has been so effective that the economy believes its mechanism should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the mechanism is to be introduced. If the economy submits 3, it should explain why the economy feels that no such mechanism is necessary. If the economy submits 4, it should explain why the economy considers the mechanism to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the mechanism was needed, what the goals were, how the mechanism works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

The checklist item E-7 examines whether there is an official rule or guideline encouraging the purchase of any and all SME products, not necessarily those products which are innovative. However, some economies may have specific rules or guidelines concerning innovative SME products. Thus, the next checklist item addresses whether the member economy has a purchase program specifically for *innovative* SMEs. In the past, such programs have been encouraged based on the possibility of spillover effects[64]. Some government applications have been used to

[64] : For example, APEC SME Working Group (2006) Part I, pp.43-44

develop civilian applications. Examples include jet engines and even the Internet. However, some observers point out that while there had been positive spillover effects (i.e. "spin-offs") in the past, it is now questionable whether government applications (especially military applications) and civilian applications are similar enough to provide spillover effects as in the past, and whether defense-oriented government procurement can provide substantive incentive to develop general purpose technologies[65]. Also, based on international comparison of certain industries, there is some question whether procurement policies which do not involve competition among suppliers lead to innovation[66]. Thus, this checklist item should also be reconsidered and possibly eliminated for the second round of the Daegu Initiative.

E-8 *Are there an official rule, guideline or program encouraging public institutions to purchase from innovative SMEs?*

Member economies should report 1 if there is no such rule, guideline, or program; 2 if there is such rule, guideline, or program but it has not been effective, or if such rule, guideline, or program is to be introduced in the near future (within 2-3 years); 3 if there is no such rule, guideline, or program, but the economy does not believe there is a need for such rule, guideline, or program; 4 if there is such a rule, guideline, or program and it is effective; and 5 if there is such a rule, guideline, or program and it has been so effective that the economy believes its mechanism should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the mechanism is to be introduced. If the economy submits 3, it should explain why the economy feels that no such mechanism is necessary. If the economy submits 4, it should explain why the economy considers the mechanism to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the mechanism was needed, what the goals were, how the mechanism works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

4. Enhancing Support for Technically Competent SMEs

For this element, each member economy should highlight its efforts to make sure that its standards and conformance system does not work against technically competent and innovative SMEs. To this end, the national authorities responsible for standards and conformance should strive to give due attention to innovative SMEs and their products when establishing domestic (and international) technical standards, and when judging the conformance of innovative SME products to established technical standards. The standards and conformance authority should strive to remove any biases toward SMEs and reduce burdens associated with applying for technical standards or conformance

[65] : Ruttan (2006) pp,185-186
[66] : Mowery and Nelson (1999) p.378

certification.

E-9 *Does the technical standards and conformance system contain provisions which give due consideration to difficulties faced by SMEs? If so, what are they? Are there any indicators of effectiveness?*

The TILF-IAP also asks member economies to list any developments in the national technical standards and conformance system. However, we note that the TILF-IAP concentrates on the international aspects of the standards and conformance system, as well as general policy measures. In the Daegu Initiative, the description of the standards and conformance system should be limited to areas relevant for SMEs.

Member economies should report 1 if there are no such provisions; 2 if there are such provisions but they has not been effective, or if such provisions are to be introduced in the near future (within 2-3 years); 3 if there is no such provision, but the economy does not believe there is a need for such provisions, perhaps because the effects on SMEs are already adequately considered using other means; 4 if there are such provisions and they are effective; and 5 if there are such provisions and they have been so effective that the economy believes they should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the provisions are to be introduced. If the economy submits 3, it should explain why the economy feels that no such provisions are necessary. If the economy submits 4, it should explain why the economy considers the provisions to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the processes were needed, what the goals were, how the process works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

Further, because technical standards and conformance can be a very complex subject, not only in terms of science and technology but also in terms of laws and regulations, the national standards and conformance authority, or the national agency responsible for SMEs should offer assistance for a SME who wishes to register its technology for a new technical standard, or who submits its product for a technical conformance certification.

If there are such considerations for SMEs and assistance to SMEs concerning standards and conformance, the member economies should list them in the IAP and self-assessment reports. Further, if there are any indicators of the effectiveness of such considerations and assistance, the member economy should include those as well.

E-10 *Does the technical standards and conformance authority or the SME authority offer assistance to SMEs applying for technical standards, or conformance certification? If so, what are they? Are there any indicators of effectiveness?*

Member economies should report 1 if there are no such assistance; 2 if there is such assistance but they has not been effective, or if such assistance is to be introduced in the near future (within 2-3 years); 3 if there is no such assistance, but the economy does not believe there is a need for such assistance; 4 if there is such assistance and it is effective; and 5 if there is such assistance and it has been so effective that the economy believes it should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the assistance is to be introduced. If the economy submits 3, it should explain why the economy feels that no such assistance is necessary. If the economy submits 4, it should explain why the economy considers the assistance to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the processes were needed, what the goals were, how the process works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

Finally, because there was no detailed explanation or guidelines explaining how to submit reports for this area in the IAP, member economies have sometimes reported general measures which can be applied to technically competent SMEs. For the first cycle, such general measures should be listed under checklist item E-11, since there was no explanation on what member economies should report. For the second and further rounds of the Daegu Initiative, such general measures which cannot be classified elsewhere should be included in the "other" category.

E-11 *What other support does your economy offer for technically competent SMEs?*

Member economies should report any other support they offer to technically competent, innovative SMEs. If the support has been very effective, member economies may submit a "best practice" report as an APEC best practice. However, because this checklist item is so general, the working group may consider eliminating this checklist item in the second round of the Daegu Initiative.

5. Enhancing Support for the R&D Area

Because there was no detailed explanation or guidelines for this area in the IAP, member economies have sometimes reported some general support measures for R&D which can be applied to innovative SMEs. For the first cycle, such reports of general measures should be considered, since there was no explanation on what member economies should report.

Support for R&D can generally be divided into two categories – those which give financial assistance (such as subsidies, research funding, or tax breaks) to firms and organizations engaged in R&D, and the removal of regulations and legal restrictions which make R&D more difficult. The latter can involve questions of science,

technology, safety and even social norms and ethics[67]. The only advice we can offer on the latter is to make sure that any regulations or restrictions be no more burdensome than necessary.

E-12. *Are there support and incentives for R&D, and are SMEs eligible? If there are performance indicators for such incentives (such as amount disbursed or number of projects), report or refer to them in the IAP*

Member economies should report 1 if there is no such support; 2 if there is such support but it has not been effective, or if such support is to be introduced in the near future (within 2-3 years); 3 if there is no such support, but the economy does not believe there is a need for such a plan; 4 if there is such support and it is effective; and 5 if there is such support and it has been so effective that the economy believes its support program should be considered as an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the support plan is to be introduced. If the economy submits 3, it should explain why the economy feels that no such support is necessary. If the economy submits 4, it should explain why the economy considers the support to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the support was needed, what the goals were, how the plan works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

On financial assistance while there is theoretical support for supporting R&D which have wide spillover effects such as basic science, the case for supporting private R&D, which are carried out to enhance private profits and may have little spillover effects, are not as clear[68]. Thus, we recommend that for the second and subsequent rounds of the Daegu Initivative, this element be eliminated or de-emphasized. For the second and further rounds of the Daegu Initiative, financial R&D support measures should be reported under the "other" category, and only when the member economy deems it important.

6. Others

For this element, member economies are free to report whatever policies they think is relevant to establishing an appropriate legal and regulatory structure for encouraging innovation in SMEs. The elements listed above consider many aspects of the legal and regulatory structure on innovative SMEs. However, in the current list of elements for

[67] : For example, consider R&D in biotechnologies such as cloning.

[68] : As Baumol (2004, Chapter 6) points out, almost all technologies have some spillover effects, so there may be a case to be made for supporting all R&D, both private and public; but if there are limited funds for R&D support, it would make better sense to support basic research in science and technology since those are thought to have higher spillover effects, and there is little private incentive to carry them out.

the Daegu Initiative, there is no mention of any regulatory review and reform strategies. Considering the importance that many international organizations, including APEC, place on the importance of regulatory review and regulatory reform for reducing regulatory burden, the lack of any mention of regulatory review and reform is a major oversight in this area of the Daegu Initiative. Thus, in this element, member economies should include details and future plans concerning regulatory review and reform.

As stated in the introduction, international organizations are emphasizing the importance of regulatory reform to raise the quality of regulations. Raising the quality of regulations can reduce burdens on businesses and producers while improving the competitive environment of the economy and maintaining a high degree of protection for consumers. OECD, which has led the research for regulatory reform recommends a comprehensive regulatory reform system which reviews the benefits and costs of a regulation, legal basis for regulation, and possible alternatives to regulation. Such analysis is often based on Regulatory Impact Analysis (RIA) which should be submitted with each regulatory proposal.

APEC has effectively endorsed the OECD initiatives, and as stated in the introduction, published APEC-OECD Checklist on Regulatory Reform. APEC also requires its members to report general developments in deregulation and regulatory review in the TILF-IAP. However, the TILF-IAP tends to concentrate on general policy developments and market liberalization aspects of regulatory review and deregulation. Thus, in the IAP, it seems appropriate to examine whether the regulatory review and reform system takes account of the special problems faced by the innovative SMEs.

E-13. *Does a regulatory review and reform system exist, and does it take problems of SMEs into account?*

Member economies should report 1 if there is no such system; 2 if there is such system but it has not been effective, or if such system is to be introduced in the near future (within 2-3 years); 3 if there is no such system, but the economy does not believe there is a need for such a system; 4 if there is such system and it is effective; and 5 if there is such system and it has been so effective that the economy believes its system should be considered as an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the system is to be introduced. If the economy submits 3, it should explain why the economy feels that no such system is necessary. If the economy submits 4, it should explain why the economy considers its system to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a “best practice report” which includes details on why the system was needed, what the goals were, how the plan works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

Badly formulated regulations often restrict the introduction of new products or new production processes. The above-mentioned technical standards and conformance related regulations are the main obstacles to introducing new products or processes, but other regulations can also restrict it as well. For example, strict regulations on use of technology can limit introduction of new products using newly developed technology. While the government has legitimate interest in establishing regulations to make sure that new products or new processes are safe, regulatory authorities should give maximum consideration to the introduction of new products and processes, since otherwise authorities tend to favor the status quo, and existing businesses may also favor limiting the introduction of new products and processes.

E-14. *Does the regulatory review and reform system give due consideration to the introduction of new products and processes?*

Perhaps the RIA could include provisions to take this problem (i.e. whether the regulation will limit the introduction of new goods and processes) specifically into account, and a good rule of thumb may be that unless there are specific reasons why the introduction of a new product or a new process should not be introduced, with the burden of proof on the regulatory authorities, the new product or process should be automatically approved.

Member economies should report 1 if there is no such consideration; 2 if there is such consideration but it has not been effective, or if such system of consideration is to be introduced in the near future (within 2-3 years); 3 if there is no such consideration, but the economy does not believe there is a need for such a system; 4 if there is such consideration and it is effective; and 5 if there is such system of consideration and it has been so effective that the economy believes its system should be considered as an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the system is to be introduced. If the economy submits 3, it should explain why the economy feels that no such consideration is necessary. If the economy submits 4, it should explain why the economy considers its system of consideration to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a “best practice report” which includes details on why the system was needed, what the goals were, how the plan works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

For the first cycle, since there was no explicit definition for this element, member economies should be free to include any other relevant measures which deal with innovative SMEs and legal and regulatory structure which do not belong in any of the other elements. Such miscellaneous policies dealing with the legal system and regulations can be reported here.

E-15. *In the area of legal and regulatory structure, what other relevant measures are in place?*

Member economies should report any other measures that they feel is relevant. If the measures have been very effective, member economies may submit a "best practice" report as an APEC best practice.

7. Summary

In the discussion above, we have presented a checklist for the currently selected elements in the area of legal and regulatory structure. However, as we have argued in the introduction, the current elements do not seem to truly reflect the original intent as outlined in the 2005 Daegu Initiative, and some of the elements may not be desirable in the long run. Also, the current definition of the legal and regulatory structure may overlap with the area of "establishing a market competitive economic environment." To this end, we suggest that the area of legal and regulatory structure be limited to national legislation and regulatory reform policies. Issues dealing with competition policy, market openness, ease of market entry and exit should be dealt in the area of "establishing a market consistent economy."

To this end, we suggest that in the second round of the Daegu Initiative, the current elements be replaced by the following: 1) The state of intellectual property rights; 2) Providing legal support for innovative SMEs; 3) Establishing regulatory reform mechanism to promote SMEs and innovation; 4) Standards and Conformance; and 5) Others. The elements, their definitions, and the potential checklist items are listed in <Box 8-5>.

<Box 8-5> Recommendation for Elements and Checklist Items in the Second Daegu Initiative for "Establishing Appropriate Legal and Regulatory Structure"

Elements	Definition	Checklist Item
1. The state of intellectual property rights	Is intellectual property adequately protected through patent, copyright and other IPR-related laws? If, for the public good, intellectual property must be appropriated, is there a clear mechanism and adequate compensation?	1. Are the national IPR laws consistent and comparable to WTO TRIPs and other major international IPR agreements?
		2. Is there a clear mechanism for appropriating intellectual property, including an objective criteria for adequate and reasonable compensation?
2. Providing legal support for innovative SMEs	Laws should be designed and written so that burdens on SMEs are minimized as	3. Are there processes in place to consider the effects of legislation on SMEs?

	much as possible, and governments should make sure that SMEs can understand the laws and obey them at the least cost possible.	4. Is there an official mechanism to offer advice and explanations concerning laws and legislation to SMEs?
3. Establishing regulatory reform mechanism to promote SMEs and innovation	Regulatory reform mechanism should be in place to reduce regulatory burden on SMEs, and promote innovation	5. Does your regulatory reform mechanism include processes to explicitly consider the effects on SMEs? (both new and existing regulations)
		6. Does your regulatory reform mechanism include processes to minimize regulatory burden on introduction of new goods or services?
		7. How efficiently does your economy enforce contracts?
4. Standards and conformance		8. Does the technical standards and conformance system contain provisions which give due consideration to difficulties faced by SMEs?
		9. Do the technical standards and conformance authority or the SME authority offer assistance to SMEs applying for technical standards, or conformance certification? If so, what are they? Are there any indicators of effectiveness?
5. Others		10. Is there an official process or mechanism to introduce innovative SME products to potential customers (both public and private institutions)?

		11. What other support does your economy offer with regard to legal and regulatory structure for innovative SMEs?

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Chapter 9: Area F: Establishing a Market Consistent Economic Environment

1. Background

The Importance of Market Economy for Innovative SMEs

Until recently, the importance of market consistent economic environment in facilitating innovation was somewhat controversial. Some authors had emphasized the need for entrepreneurial spirit and competition among innovative firms to encourage innovation, while others noted that innovations are driven by pursuit for monopoly profits, and emphasized the need for the government to protect and nurture innovative firms. Authors emphasizing the need for "infant industry protection" and "infant industry promotion" for developing countries had often used the need for a developing country to raise its level of technology as one of the justification for limiting the liberalization of its economy, and even limiting competition among innovative domestic businesses. One reason why governments may promote the formation of large businesses is to increase resources available for innovation by a firm.

Such arguments are being made even today[69]. Schumpeter himself recognized both possibilities as he "feared that entrepreneurial activity was gravitating toward the large established enterprises, which not only had the resources to finance creative activity but also enjoyed positions in their markets large enough to earn profits sufficient to make the investment in the development of innovations worthwhile," but he was also concerned that "the growing bureaucracies within large US companies, especially in the wake of the mass production required during World War II, were going to stifle innovations in the future[70]."

While academic researchers and policy analysts have not yet provided a final answer to these questions, there seems to be indications that SMEs play an important part in innovation, and a competitive economic environment is required to foster innovation. Researchers such as Scherer (1984) had pointed out that, while larger firms accounted for a higher proportion of R&D spending, "what the largest corporations achieve with their R&D dollars is less impressive. By every measure used, the group of large corporations as a whole contributed fewer significant innovations, contest-winning technical advances, and innovation patents per million dollars of R&D than smaller enterprises.[71]"

Traditionally, observers argued that it is the larger firms which carry out a bulk of innovation. Studies seem to show that larger firms carry out most of the R&D, measured by R&D costs, and they are responsible for more innovations introduced to the marketplace[72]. However, some researchers are beginning to argue that there is a

[69] : For example, Chang (2007).
[70] : Baumol, Litan and Schramm (2007) p.79, summarizing Schumpeter (1942) pp.81-86.
[71] : Scherer (1984) p.237
[72] : Using firm-level statistics for Canada, Baldwin and Hanel (2003) reports that smaller firms use less IPR protection such as patents and copyrights, and are less likely to introduce major innovations. The

division of tasks between smaller firms and larger firms concerning innovation. The smaller firms, led by entrepreneurs and technological innovators tend to develop radical new innovations, while the larger firms tend to take these innovations and use their large R&D budgets to develop these innovations[73]. Thus, the larger firms tend to carry out "routinized" innovations, rather than radical innovations[74]. Such divisions of labor explains why larger firms seem to be innovating more than smaller firms, since it is the larger firms which refine the "raw" innovative ideas and successfully bring it to market.

This relationship points out the need for a careful consideration of the relationship between SMEs and larger firms in innovation. There is room for appropriate partnership between SMEs and larger firms, so that larger firms, if necessary, can develop and market the innovations developed by the SMEs. On the other hand, SMEs must be free to develop their ideas in a competitive market place so they can compete and develop their ideas. Thus, in an economic environment which discourages the establishment of SMEs or where SMEs cannot compete with existing firms (both large and small) effectively, there will be less chances of more radical innovations. Thus, there is a role for competition policy, to make sure that larger companies do not use their market power to stifle the new ideas generated from SMEs. Some observers in the past have argued that, because innovative firms compete for monopoly profits, and because larger firms tend to have more R&D as measured by R&D costs, a less competitive, concentrated market structure may be more appropriate to facilitate innovation. However, recent studies seem to indicate otherwise. OECD (1997) lists several studies which find no relationship between market concentration and innovation, and concludes by citing Symeonidis (1996) that there is little evidence of a positive relation between R&D intensity and market concentration in general, and there is even less evidence of a positive relationship between innovative output, such as patents or innovative counts, and market structure, and industry characteristics such as technological opportunity explain much more of the variance in innovative behavior than market structure. In short, "there is no reason to constrain pro-competitive policy in order to favor innovation, which may be hindered by such action.[75]"

In Baumol, Litan and Schramm (2007), the authors summarize the four main factors which they believe are crucial for encouraging innovation, technical growth and economic growth[76]. First, it must be easy to start and grow a business. Items under consideration here include making business registration easy, good bankruptcy protection, and good access to finance.

Second, there must be rewards for productive entrepreneurial activity. Items under consideration here include solid rule of law, property, and contract rights; avoiding onerous taxation; proper regulation (or deregulation), systems that reward new ideas

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difference is not large for product innovation or hybrid product-process innovations, but it is large for process innovations. Baldwin and Hanel (2003) pp.159-166, pp.234-237.

[73] : These may be formerly small firms which grew around their innovation, such as Ford Motors, or it may be other companies which bought, licensed or copied the innovation.

[74] : Baumol (2002) Chapter 2

[75] : OECD (1997) p.286

[76] : Baumol, Litan and Schramm (2007) Chapter 5.

such as a just IPR system; supporting basic scientific R&D; facilitating the commercialization of university inventions; and systems which reward legal imitation of innovations (such as imitation through importing advanced technology, attracting foreign investments, and encouraging study abroad). Many of these factors were considered in previous chapters.

Third, there should be disincentives for unproductive activity, such as illegal activities. When there are large profits to be made from unprofitable or illegal activities, it can often divert entrepreneurial talent from innovative activities.

Finally, the economic environment should give incentives to keep the firms innovating. Items here include appropriate antitrust policies[77]; and welcoming trade and investment.

In addition to items listed above, one can also consider easy exit of existing firms. Schumpeter's term "creative destruction" implies that, with rapid changes in technology, firms, which use outdated technology, will go out of business. To foster innovation, firms must be allowed to exit the market quickly and efficiently so that the reallocation of entrepreneurial, technical and financial resources is not hindered. Good bankruptcy procedures are a part of such environment, but it should also include measures for flexible labor markets, and legal and regulatory system, which does not hinder exiting or disposal of non-viable firms.

An aspect of SME innovation and market consistent environment that is controversial is the importance of trade and investment liberalization. Technology transfers and development can take place through international transactions. There can be an international market, which trades technology itself, through international purchases and sales of technology, or licensing. Further technology diffusion may take place through general trade in goods and services or international investment, where technology is effectively embodied in the good, service or investment[78]. Finally, there is international trade diffusion, which need not take place through trade or investment, but through mere exchange of information such as scholarly articles or everyday conversations.

Many scholars in the past advocated that in order to foster innovation, the markets

[77] : Inappropriate competition policies can actually stifle competition. For example, Baumol, Litan and Schramm (2007; p.113) points out that "a firm, finding that its inferior products or its inefficiency condemn it to failure, [can take] its competitive battle out of the marketplace and into the courtroom complaining (falsely or on questionable evidence) that a rival has engaged in 'predatory' behavior." Further, in a "quality-ladder" type of competition, where firms compete to develop the best strategy and the winner takes the majority of the demand until a better technology is found, the current technology winner may seem to have a monopoly or an overwhelming market share – but in reality, the market may be a contestable market, and the firms may be engaged in intense competition over the development of technology, with the monopoly profit as the reward for developing the best technology. For an explanation of the "quality ladder" innovation and competition, see Grossman and Helpman (1991) Chapter 4.

[78] See, for example, Evenson and Westphal (1995) pp.2239-2241. The authors warn that, to fully take advantage of foreign technology, the country needs sufficient local capabilities to use it.

should remain closed to protect the domestic innovators. Others argued that market liberalization, even with a high level of IPR protection, will help technologies flow to other countries, including less developed countries, since the domestic innovators will be able to see what the foreign innovators have done through imported goods and services, as well as paperwork which has been filed with the government for patent protection. Foreign trade and investment has been considered a good channel for technology diffusion, and recent empirical papers seem to give evidence to this point of view. Stern, Porter and Furman (2000) found that, using national patent data, openness to international trade is associated with higher level of patenting, and presumably higher levels of innovation. Further, there is now recognition that, in order for innovative SMEs to prosper, they need to seek foreign markets, so market liberalization will help the development of SMEs overall[79].

The Daegu Initiative recognized the importance of maintaining a market consistent economy in order to give the right set of incentives to innovative SMEs. Daegu Initiative includes the area of 'Establishing a market consistent economic environment', because under a market consistent economic environment, innovative, efficient SMEs will have the greatest opportunities to access the resources they merit and require while facilitating firms to freely enter and exit the market. Thus, in a market-consistent competitive environment, there will be a good balance between competitive pressures, which allow firms to use all their resources most efficiently to innovate; and rewards for the successful innovators, thus providing incentives for further innovations.

Some of the conditions mentioned above are discussed in other chapters, so we will not consider them here. This chapter will focus specifically on those items which are concerned with maintaining a market-consistent environment.

Innovative SMEs and a Stable Macroeconomic Environment

Innovative SMEs, as with any enterprise, requires a stable and predictable operating environment. This implies stable legal and regulatory environment (which has been dealt with in the previous chapter), and a stable macroeconomy. While a government may not always be able to achieve a stable macroeconomy, it should endeavor to achieve it. This goal also means that, unless it is unavoidable, a government should try to refrain from excessive government spending and deficits which may lead to inflation. In the past, some countries have attempted industrial policies which overtaxed government resources and lead to distortions in the economy. Such excessive industrial policies should be avoided. Policies to help innovation or innovative industries should be supplementary policies designed as 'icing on the cake' rather than form the backbone of government policy.

Innovative SMEs, Competitive Marketplace and the Role of Competition Policy

As stated above, some observers have argued that innovation requires monopoly rents as an incentive for innovators to innovate. However, an economic environment

[79] : See OECD (2004), especially pp. 22-27

which over-emphasizes competition may hinder innovation. Conversely, other observers have pointed out that a competitive economic environment fosters innovation by forcing firms to compete, and unless a competitive environment is maintained through effective use of competition policy, existing firms may hinder the introduction of innovative products. Further, competition in innovation often results in a temporary apparent monopoly, where the firm with the most innovative technology at that point in time can have very high market share. Thus, for innovative industries, an economy must apply competition policy with care, to foster a competitive, contestable marketplace[80]; but refrain from punishing the winners of the innovation race, especially if there are potential competitors engaged in innovation race with the current winners. Also, the implementation of competition policy must restrain collusion between firms, which may limit innovation, but allow cooperative efforts to develop new technology[81]. Thus, competition policy must concentrate on maintaining a competitive environment – removing entry and exit barriers, making sure that all firms have fair access to public information, and that incumbents do not use their current market power to unfairly block other firms from operating in the marketplace; rather than trying to limit the success of the innovation race winners.

Obviously, such subtle and careful implementation of competition policy can be extremely difficult. It is not always easy to tell whether sufficient competition is taking place out of sight in the realm of innovation; and whether the current winner of the innovation race, who currently has a substantial market share, is unfairly limiting the activities of other firms[82].

On the other hand, a good case can be made to apply competition policy in such a way to guarantee competitive environment for SMEs. Large companies typically have more capital and more extensive network of contacts with other businesses, and they may use such resources to unfairly limit opportunities for SMEs, which do not share these advantages. Thus, even when SMEs develop new innovative products or processes, SMEs may not be able to deliver their goods to the market and consumers. Competition policy can, and should be used to make sure that other companies do not use their resources unfairly and illegally to limit innovative SME goods from reaching the market[83]. Thus, as a minimum, an economy should implement and apply their competition policy effectively, and the implementation should take account of the possibility of larger firms unfairly and illegally limiting the opportunities of SMEs. In effect, competition policy should remove private barriers to entry for innovative SMEs.

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[80] : Contestable market is a market where any company is a viable, potential competitor.

[81] : Issues concerning collaboration of innovative firms and competition policy is described in Shapiro (2002).

[82] : One only needs to remember the case of Microsoft's Internet Explorer vs. Netscape browsers to see how complex the issues can be.

[83] These unfair practices include the standard acts to limit competition such as price fixing and collusion among some competitors, and exclusionary practices as tying arrangements, predatory pricing, some aspects of vertical integration, some aspects of exclusive dealing, bundling, and boycotts. Also, if compulsory licensing policy is used, it should be implemented in such a way to give equal opportunity to SMEs, and does not unduly disadvantage SMEs.

Innovative SMEs and Market Liberalization

As stated above, there are two ways that market liberalization can help innovation and innovative SMEs. First, market liberalization can increase technology diffusion through trade and FDI. Second, by including foreign markets, the potential market for innovative SME products becomes larger. We look at each in turn.

Keller (2004) summarizes much of the empirical studies on international trade diffusion. While there is an extensive market for technology (i.e.. buying, selling and licensing of technology), many economists believe that most international technology diffusion occurs through externalities (spillovers)[84]. In Section 6 of Keller (2004), he examines various econometric papers which examine how imports, exports and FDI may affect technology diffusion. On the relationship between imports and technology diffusion, while Keller himself expresses skepticism on some of their results, he cites several papers which showed that imports have significant positive effects on technology diffusion, such as Eaton and Kortum (2001); Coe and Helpman (1995); and Coe, Helpman and Hoffmaister (1997). Keller also cites Sjöholm (1996), which showed a positive correlation between patent citations and bilateral imports in Sweden, implying that imports contribute to international knowledge spillovers. Lumenga-Neso, Olarreaga and Schiff (2001) examines indirect R&D spillovers – international technology spillovers which do not directly involve trade – and found that such indirect R&D spillovers may be larger than spillovers which directly involve trade, but even they acknowledge that technology spillovers through trade have an important role to play in international technology diffusion[85].

Keller (2004) then reviews empirical papers dealing with technology growth and exports. He summarizes that there are numerous case study reports which support the link between exports and technology growth, but "there is no strong econometric evidence for a strong learning-from-exporting effect.[86]" He speculates that the reason for this discrepancy may be due to differences between industries and export destinations. The effect of exports on technology growth and diffusion may be very different depending on what goods the firm exports, and to where. If this speculation is true, then in order to facilitate innovation, SMEs may need to break into difficult and competitive markets, such as those of advanced countries.

Finally, Keller (2004) reviews empirical papers dealing with FDI, technology spillovers and productivity. He notes that papers often give contradictory results – some older papers conclude that FDI has no effect on technology diffusion at all – but such conclusion seems unduly pessimistic. He summarizes the results of various papers by stating:

> "In contrast to the earlier literature, recent micro productivity studies tend to estimate positive, and in some cases also economically large spillovers associated with FDI. ... Moreover, although the current evidence from micro

[84] Keller (2004) p.758
[85]: Lumenga-Neso, Olarreaga and Schiff (2005), pp. 1796-1797
[86]: Keller (2004) p.768

> productivity studies comes from the United Kingdom and the United States, there are reasons to believe that the findings might apply in other countries as well. If these micro productivity FDI spillovers hold up in the future, it would also provide support for the FDI learning effects that are found in some of the case studies[87]."

He also notes that the contradictory nature of some papers may imply that the degree of spillovers may differ considerably between industries. Some papers, such as Keller and Yeaple (2003) show that technology spillovers from FDI are higher for high-tech industries than for low-tech industries.

Recently, there has been attention on the need for innovative SMEs to explore and develop foreign markets. In June of 2004, the OECD held a conference of ministers responsible for SMEs on the topic of "Promoting Entrepreneurship and Innovative SMEs in a Global Economy." "Facilitating SMEs' access to global markets" was one of the major topics discussed during this conference. As the background paper states:

> "The globalization of business has increasingly drawn SMEs into global value chains through different types of cross-border activities. Many entrepreneurs are recognizing the opportunities that this process offers and gaining access to global markets has become a strategic instrument for their further development. Access to global markets for small businesses can offer a host of business opportunities. Such as larger and new niche markets; possibilities to exploit scale and technological advantages; upgrading of technological capability; ways of spreading risk; lowering and sharing costs, including R&D costs; and in many cases, improving access to finance. Gaining access to global markets can help prospective high-growth firms realize their potential and are often as essential strategic move for SMEs with large investments in intellectual property."

The report also states that globalization can also pose challenges and threats to SMEs, which SMEs are less well-equipped to deal with. According to available data, SMEs' participation in global markets lags behind that of larger firms, and thus overseas market and FDI may represent an untapped resource and market for innovative SMEs. The report further goes on to recommend that in recognition of such untapped resources and markets for entrepreneurs and innovative SMEs, governments should strive to reduce barriers to access to global markets, especially non-tariff barriers (NTBs).

The OECD (2004) report goes on to make the following key policy recommendations in the area of market liberalization[88]:

- Seek, through the WTO round and other channels, to ease trade barriers;
- Promote the role that foreign direct investment can play as a vehicle for SMEs to access international markets;
- Encourage the smooth, cross-border growth of SMEs by reducing the need for

[87] : Keller (2004) p.771
[88] : OECD (2004) p.27

internationally active SMEs to comply with multiple sets of rules or requirements (such as standards, intellectual property rights, financial market regulations and other regulatory domains)
- Facilitate access to the information SMEs need to operate internationally (especially information relating to tax, regulatory framework and requirements, advisory and support services for SMEs and dispute resolution procedures)
- Enhance incentives for new public-private partnership initiatives that would help SMEs reach global markets for innovative products and access foreign sources of advanced technologies and knowledge.

Thus, market liberalization can play an important role in developing innovative SMEs, and in recognition, the APEC economies should strive to reduce market barriers for goods, services and FDI.

SME Innovation, Restructuring and Ease of Entry and Exit

Under Schumpeter's concept of creative destruction, innovation is due to firms competing for (temporary) monopoly rents from having the most favorable innovative good. The process requires firms to continually enter and exit the market. If entry to the market is restricted, innovative processes or goods may not enter the marketplace. Further, because the competition is lessened, the pace of innovation may slow. If exit from market is restricted, the removal of less innovative goods or processes may be hampered, and resources may be diverted from their optimal usage. Particularly, if businesses have a difficult time exiting from the marketplace, entrepreneurs, and valuable knowledge-based workers may needlessly be tied down to ineffective businesses, and their talents may be lost. For example, if an economy has inefficient bankruptcy procedures, a bankrupt entrepreneur may never be able to start another business again. Such loss represents a waste of hard-earned human capital – the knowledge how to start and operate an innovative business. Thus, for SME restructuring, the ease of exit is a crucial component.

As part of the World Bank's Doing Business Project, Djankov, La Porta, Lopez-de-Silanes and Shleifer (2002) examined the effects of regulations on market entry. They found that there is very little reason for governments to regulate market entry. They found no evidence that regulation of entry is associated with higher product quality, better pollution records, health outcomes or keener competition. Rather, they found that stricter regulation of entry *is* associated with sharply higher levels of corruption, and a greater relative size of the unofficial economy[89]. While they did not deal with the effects of market entry regulation on innovation, it seems likely that, by restricting competition, regulation of entry also restricts innovation. Thus, governments seeking to increase innovation should endeavor to make market entry easier. Similar arguments apply to exit from markets as well.

[89] : Djankov, La Porta, Lopez-de-Silanes and Shleifer (2004) p.4

SME Innovation, Market Consistent Environment and APEC

In the original SPAN 1998, the importance of establishing a market consistent environment was recognized, but not emphasized. "Effective regulatory environment" was placed within the broader category of "policy environment." However, as the evidence mounts that market-consistent pro-competitive economy does a better job of fostering innovation than a protected, concentrated economy, the importance of maintaining market-consistent economy, including active implementation of competition policy, trade and investment liberalization, and removal of barriers to market entry and exit have gained more attention.

APEC has long given great importance to trade and investment liberalization. Trade and investment liberalization and facilitation (TILF) is one of the two main pillars of APEC, and APEC devotes considerable energy to encourage liberalization among its member economies. One of the main goals of APEC is the Bogor Goal, which seeks to liberalize trade and investment among the member economies by 2020[90]. To carry out the Bogor Goal, APEC maintains the Osaka Action Agenda (OAA) and the TILF Individual Action Plans (TILF-IAP[91]) and Collective Action Plans (TILF-CAP) in nineteen specific areas listed in <Box 9-1>. Member economies are obligated to submit IAPs, which list their trade and investment liberalization accomplishments in each of the specific area, and also list future plans for liberalization in each specific area. Since 2002, APEC also carries out periodic peer reviews to evaluate progress on IAPs of member economies.

<Box 9-1> Areas of APEC Trade and Investment Liberalization and Facilitation (TILF)

1. Tariffs
2. Non-Tariff Measures
3. Services
   - Business Services: Legal
   - Business Services: Accounting
   - Business Services: Architectural
   - Business Services: Engineering
   - Business Services: Other Professional Services
   - Business Services: Other
   - Communications Services: Postal
   - Communications Services: Express Delivery
   - Communications Services: Telecommunications
   - Communications Services: Audio-Visual Services
   - Construction and Related Engineering Services
   - Distribution Services
   - Education Services

[90] : 2010 for advanced economies.

[91] : To distinguish the Innovation Action Plan under the Daegu Initiative from the Individual Action Plan under TILF, we shall use the acronym "IAP" exclusively for the Innovation Action Plan, and denote the TiLF Individual Action Plan by the acronym "TILF-IAP." We also note that IAP was explicitly designed to follow the template of the TILF-IAP.

- Environment Services
- Financial Services
- Health Related and Social Services
- Tourism and Travel Related Services
- Recreational, Cultural and Sporting Services
- Transport Services: Maritime
- Transport Services: Air
- Transport Services: Rail
- Transport Services: Road
- Transport Services: Other
- Energy Services
- Other Services

4. Investment
5. Standards and Conformance
6. Customs Procedures
7. Intellectual Property Rights
8. Competition Policy
9. Government Procurement
10. Deregulation / Regulatory Review
11. Implementation of WTO Agreements including Rules of Origin
12. Dispute Mediation
13. Mobility of Business People
14. Information Gathering and Analysis
15. The APEC Food System
16. Transparency
17. FTA and RTAs
18. Trade Facilitation
19. Paperless Trading

APEC has recognized the importance of competition policy for market liberalization, as well as maintaining a pro-competitive market consistent economy. As seen in <Box 9-1>, competition policy is a part of TILF-IAP and TILF-CAP. <Box 9-2> lists the OAA objectives and guidelines for competition policy. Work on competition policy within APEC is carried out by the Competition Policy and Deregulation Group within the Economic Committee.

<Box 9-2> Osaka Action Agenda Objectives and Guidelines for Competition Policy

Objective:

APEC economies will enhance the competitive environment to increase consumer welfare in the Asia-Pacific region, taking into account the benefits and challenges of globalization, developments in the New Economy and the need to bridge the digital divide through better access by ICT, by:

introducing or maintaining effective, adequate and transparent competition policy and/or laws and associated enforcement policies;

promoting cooperation among APEC economies, thereby maximizing, inter-alia, the efficient operation of markets, competition among producers and traders, and consumer benefits; and

improving the ability of competition authorities, through enhanced capacity building and technical assistance, to better understand the impact of globalization and the New Economy.

Guidelines:

Each APEC economy will:

a.	review its respective competition policy and/or laws and the enforcement thereof taking into account the "APEC Principles to Enhance Competition and Regulatory Reform";
b.	enforce competition policies and/or laws (including those prohibiting anticompetitive practices that prevent access to ICT and other new technologies), to ensure protection of the competitive process and promotion of consumer welfare, innovation, economic efficiency and open markets;
c.	disclose any pro-competitive efforts undertaken (e.g. enactment of competition laws, whether comprehensive or sectoral);
d.	implement as appropriate technical assistance in regard to policy development, legislative drafting, and the constitution, powers and functions of appropriate enforcement agencies;
e.	establish appropriate cooperation arrangements with other APEC economies, including those intended to address the digital divide; and
f.	undertake additional step as appropriate to support the development of the New Economy and to ensure the efficient functioning of markets.
Collective Actions:	
APEC economies will:	
a.	gather information and promote dialogue on and study;
	(i) the objectives, necessity, role and operation of each APEC economy's competition policy and/or laws and administrative procedures, thereby establishing a database on competition policy;
	(ii) competition policy issues that impact on trade and investment flows in the Asia-Pacific region;
	(iii) exemptions and exceptions from the coverage of each APEC economy's competition policy and/or laws in an effort to ensure that each is no broader than necessary to achieve a legitimate and explicitly identified objective;
	(iv) areas for technical assistance and the modalities thereof, including exchange and training programs for officials in charge of competition policy, taking into account the availability of resources; and
	(v) the inter-relationship between competition policy and/or laws and other policies related to trade and investment;
b.	deepen competition policy dialogue between APEC economies and relevant international organizations;
c.	continue to develop understanding in the APEC business community of competition policy and/or laws and administrative procedures;
d.	continue to develop an understanding of competition policies and/or laws within their respective governments and within relevant domestic constituencies, thereby fostering a culture of competition;
e.	encourage cooperation among the competition authorities of APEC economies with regard to information exchange, notification and consultation;
f.	contribute to the use of trade and competition laws, policies and measures that promote free and open trade, investment and competition;
g.	encourage all APEC economies to implement the "APEC Principles to Enhance Competition and Regulatory Reform; and
h.	undertake capacity building programs to assist economies in implementing the "APEC Principles to Enhance Competition and Regulatory Reform".

While all member economies of APEC recognize the importance of macroeconomic stability, APEC does not have an established forum to discuss macroeconomic policies per-se. However, APEC maintains many diverse channels of discussion, so that, if warranted, member economies can discuss and coordinate macroeconomic issues, which affect one or more member economies. For example, APEC maintains periodic meetings of finance ministers. Also, since the Asian financial crisis, APEC agendas have included various policy coordination issues and proposals to limit the possibility of another financial crisis.

Issues dealing with market entry and exit have, perhaps not received their fair due in APEC discussions. Because these issues are usually purely domestic regulatory issues, member economies may not have thought these issues to be appropriate for discussion in an international organization such as APEC. However, the SME Working Group have begun to focus more attention on regulations, which include restrictions on market entry and exit, so these issues may rise in prominence in the near future.

Establishing a Market Consistent Economic Environment in the Daegu Initiative

For the Daegu Initiative, in the area of legal and regulatory structures, there are five elements: "Strengthening cooperation between large companies and SMEs," "Facilitating digitalization of SMEs," "Supporting SMEs to make inroads into overseas markets," "Facilitating SME restructuring," and "Others." For the first round of the Daegu Initiative, these elements should be used as the relevant criteria for examining how the member economies try to promote and maintain a market consistent economic environment, since these elements have already been chosen by consensus of the APEC economies, and since they represent outcomes of good planning.

However, these elements of this area in the Innovation Action Plan (IAP), as they currently stand, may not properly reflect the broader discussion concerning market consistent economic environment. In the next round of the Daegu Initiative, serious consideration should be given to change the elements. Some recommendation will be given in the summary section below

2. Strengthening Cooperation between Large Companies and SMEs

As stated above, SMEs and large companies can play a complementary role in innovation. Baumol (2002) has argued that larger companies engage in "routinized" innovation – that is, taking truly innovative but "raw" ideas, and trying to commercialize them. The "raw" innovations are generated by entrepreneurs, including innovative SMEs[92]. Under this scenario, there are ample opportunities for productive division of labor and partnership between large companies and innovative SMEs.

However, because SMEs often work under constraints, they may not be able to find ideal large company partners. Government agencies may be able to help large companies and SMEs find each other by gathering and providing information on innovative SMEs to larger companies, or even other innovative SMEs. Further, governments may implement measures to make partnerships between innovative SMEs and large businesses easier[93]. Thus, the existence of such programs should be the first item in our checklist.

F-1 *Are there programs which promote partnerships between innovative SMEs and appropriate large businesses?*

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is

[92] : OECD (1997) p.284

[93] : However, these programs should fully take account of possible negative effects on competition, and it should also provide effective protection for innovative SMEs against larger companies, since larger companies usually have better bargaining positions.

effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

3. Facilitating Digitalization of SMEs

According to OECD (2004), information and communications technologies (ICTs) offer a wide range of benefits in terms of efficiency and market access, especially for SMEs. Thus, digitalization and utilization of the Internet can greatly assist SMEs by lowering their costs and expanding their potential markets. However, SMES have been slower than large firms to take advantage of these new technologies[94]. Thus, governments may be able to assist SMEs, including innovative SMEs, by helping them digitalize their operations; and also by digitizing government services to businesses. Digital products, information services and interaction with government in such areas as procurement, regulatory compliance and tax offer SMEs important potential efficiency gains and marketing opportunities, but also such e-government initiatives offer opportunities for SMEs to provide content for these initiatives[95].

OECD (2004) made following recommendation in the area of promoting e-business adoption by SMEs[96]:

- Move beyond policies for basic connectivity and ICT readiness to facilitate more widespread uptake and use of complex ICT applications and e-business uptake by small firms;
- Encourage rollout of affordable quality broadband networks to underpin the competitiveness and growth of SMEs;
- Strengthen the infrastructure for trust, security (including spam and viruses), piracy, (including IPR protection of ICT innovations and digital products) and consumer protection;
- Expand, in conjunction with business and consumer groups, SMEs' use of low-cost on-line dispute settlement resolution mechanisms;
- Develop and distribute digital content, including by expanding the commercial use of information about the public sector, education and health care – thus, generally expanding the range of e-government services to enterprises;

[94] : OECD (2004) pp.27-31
[95] : OECD (2004) p.30
[96] : OECD (2004) p.31

- Reduce ICT skill impediments to the growth of SMEs – in conjunction with education institutions, business and individuals.

The current version of the Daegu Initiative encourages the facilitation of digitalization of SMEs. Thus, for this element, we add the following checklist item:

F-2 *Are there programs to facilitate digitalization of SMEs?*

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible)..

However, there may be two problems with retaining this element in the future versions of the Daegu Initiative. The first is technical, the second is more serious. First, it is not entirely clear if digitalization of SMEs belong in the category of "maintaining market-consistent economic environment." While the digitalization may lower the costs of SMEs and allow them to compete more effectively with large companies, if the program to digitalize SMEs involve explicit government assistance, one can argue that such programs are contrary to the idea of maintaining market-consistent economic environment, since this area involves maintaining a level environment between large and small companies, rather than giving one side particular advantages. Thus, if this element is retained in the second round of the Daegu Initiative, it may be better to place it in another category.

The second problem for this element is that it is not entirely clear how the digitization of SMEs will help innovative SMEs. Most innovative SMEs, especially those involved in ICT or biotech industries, will already be highly digitalized. Also, while e-government initiatives will help all businesses reduce their costs, it is not clear if it will help innovative SMEs specifically. Further, as stated above, if government explicitly subsidizes the digitalization of SMEs, the government may be unfairly subsidizing the private costs of SMEs, and it is not clear if there is a good policy justification for the government to bear private costs of firms. Thus, we recommend that, in the second round of the Daegu Initiative, the member economies examine this element closely, and eliminate this element if further justifications cannot be found.

4. Supporting SMEs to Make Inroads into Overseas Markets

In order for innovative SMEs to make inroads into overseas markets, especially the technologically and competitively demanding markets which can foster innovation, it may be useful to have a program to support these SMEs, in order to introduce them to new opportunities abroad, and help them fulfill the regulatory requirements of both exporting and importing economies. From the point of view of the exporting economy, it may be useful to have a program to explicitly assist SMEs export their innovative goods abroad, and the wording used in the current Daegu Initiative seems to recommend to member economies that they should establish such a program. Thus, the next checklist item asks if the member economy has such a program.

F-3 *Are there programs to support innovative SMEs exporting to foreign markets?*

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

World Bank's Doing Business Indicators collect data on how easily domestic firms can export, and regulatory burden for exporters. The Doing Business Indicator in this area can also be used to provide a more objective criterion on the effectiveness of an economy's export support programs. The Doing Business Indicator for trading across borders (exports) can be used in conjunction with the member economy's answer to the checklist item F-3 to get a better idea on how well the export support programs work in the particular economy. Thus, the next checklist item asks how easily innovative SMEs export their products.

F-4 *How easily can innovative SMEs export their products?*

For this checklist item, member economies should report the latest indicators for trading across borders (export) from World Bank's Doing Business Report, which is available from http://www.doingbusiness.org. Information submitted should include "documents to export," "time to export," "cost to export," as well as the overall ranking for trading across borders.

Innovative SMEs often require capital, and in most cases, there is no reason why this capital has to be from domestic sources. Foreign investment may provide needed capital to these innovative firms. Conversely, when these innovative SMEs want to expand to foreign markets, they may have to make investments overseas. For example, innovative SMEs may require a foreign subsidiary in an export market, in order to establish a marketing network or a after sale service network. Thus, our next checklist item asks whether there are programs to help innovative SMEs attract foreign capital, and/or make investments abroad.

F-5 *Are there programs to facilitate foreign investment (inward and outward) by innovative SMEs?*

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

However, for the second round of the Daegu Initiative, we recommend that the checklist items F-3 and F-5 be re-examined, and perhaps be eliminated. It is not entirely clear whether a government should explicitly help market goods of individual private firms, and how much assistance the government should offer to a private firm. While government should offer advice to SMEs on how they can export more effectively, when a government goes beyond offering advice and engage in explicit marketing activities for selected firms, it may go beyond the proper role of government.

A more effective way to encourage innovative SMEs to export and receive investment would be for all APEC member economies to reduce their trade and investment barriers in general. Then the market competition can naturally give incentives to innovative SMEs to export their products, or attract foreign investment. Such market liberalization policies also seem more consistent with the principles of APEC and WTO. When member economies reduce trade and investment barrier together, it allows innovative SMEs of all member economies to participate more actively in international markets, and given the spillover effects associated with innovative products and knowledge, it would raise innovation for all member

economies.

Therefore, it makes sense to incorporate indicators of international trade and investment barriers in our checklist. Trade barriers are usually classified into tariff barriers and non-tariff barriers (NTBs). Some authors have formulated index numbers, which try to measure the degree of trade barriers, both tariffs and NTBs, for various countries of the world. These include the Trade Restrictiveness Index of Anderson and Neary (1994), Mercantilist Trade Restrictiveness Index of Anderson and Neary (2004), World Bank's Overall Trade Restrictiveness Index, Index of Trade Policy in Heritage Foundation's Index of Economic Freedom, IMF's Trade Restrictiveness Index, and Market Openness Indicators of Sachs-Warner (1995), and NTB indicators, which are kept by UNCTAD[97]. However, most of these indicators are not completely suitable for our purposes. Most of these indicators and indices are not available annually, but only for one, or subset of years. While the Index of Trade Policy by the Heritage Foundation is available annually, its method for evaluating NTBs is questionable[98]. IMF's Trade Restrictiveness Index is calculated annually, and would be very suitable for our purposes, but it is not available publicly.

Since we cannot utilize these measures of trade restrictiveness, we need to use alternate measures of trade restrictiveness to check the level of trade liberalization in our checklist. Thus, we use other measurements of tariff and non-tariff barriers. Traditionally, the level of the tariff barrier is measured by the average tariff rate. Import-weighted average tariff rate can give a general indication of the degree of the tariff barrier, but the import-weighted average rate may not fully consider the effects of some excessive tariff rates, which block imports completely. Thus, a simple average tariff rate can also be useful in looking at the degree of tariff barriers in an economy. Finally, the variance of tariff rates is often used to estimate the degree of tariff peaks and tariff escalation[99] in an economy. We can use these three statistical figures to get an idea on the degree of tariff barriers in a particular economy.

F-6 *What is the level of your trade barrier? What is the simple and import-weighted average tariff rate for your economy? What is the variance of the tariff rate for your economy? What is the level of non-tariff barriers for your economy?*

Member economies should report the simple and import-weighted average tariff rates for their economies. These statistics are available from the APEC tariff database and TILF-IAP reports on tariffs[100]. For some economies, they are also available from other sources such as the WTO.

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[97] : These trade restrictiveness indicators are summarized in IMF Policy Review and Review Dept. (2005), Section VI in particular.

[98] : Heritage Foundation's Index of Trade Policy allocates one point if there is little NTBs, and no points if there is substantial NTBs.

[99] Tariff peaks are cases where there are very high tariff rates for small number of goods; and tariff escalation are cases where an economy charges very low tariff for raw materials and intermediate goods, but high tariffs for completed final goods, so that the economy can protect its manufacturing industry, which usually manufactures final goods.

[100] TILF-IAPs are available from http://www.apec-iap.org.

Data on NTBs are more difficult to gather. As stated above, while there are several indicators on trade restrictiveness, most of these indicators are only available for one particular year, or a very limited set of years; and other indicators are not available publicly.

World Bank's Doing Business Indicator includes indicators on regulatory burden for imports. The Doing Business Indicator does not look at the full range of various NTBs, but rather focuses only on the number of documents required to import, the number of days required to finish the import process, and the cost of importing goods (per container). Thus, the Doing Business Indicator looks only at a very narrow range of NTBs. However, given the lack of appropriate NTB indicators, the Doing Business Indicator on trading across borders (imports) may represent a good instrument to estimate the level of overall NTBs. Thus, to evaluate this checklist item, we propose using the Doing Business Indicator on imports. However, if the IMF Trade Restrictiveness Index becomes available for use, it may be a better indicator for our purposes than the Doing Business Indicator.

Member economies should report the latest indicators for trading across borders (import) from World Bank's Doing Business Report, which is available from http://www.doingbusiness.org. Information submitted should include "documents to import," "time to import," "cost to import," as well as the overall ranking for trading across borders.

Finally, FDI barriers should be considered.

F-7 *What is the level of barriers for FDI for your economy?*

UNCTAD maintains benchmark indices for inward FDI performance and potential, which may be very useful for our purposes. The difference between potential and actual performance can show the degree of difficulties faced by foreign direct investors when trying to invest in a particular economy. This number can be used in the Daegu Initiative to estimate the degree of FDI barriers in APEC member economies. Thus, member economies should report the latest UNCTAD FDI Inward FDI indices (FDI Performance and FDI Potential) rankings, and also report whether, according to UNCTAD FDI indices, whether the economy is a "front-runner", "below potential", "above potential", or "under-performer." The FDI Index Information is available from UNCTAD World Investment Report (Annual) Annex tables. The report is also downloadable from http://www.unctad.org.[101] FDI information on which countries are "front runner" etc., is also available from http://www.unctad.org.[102]

[101] From the UNCTAD front webpage, click "programmes", then "Foreign Direct Investment Statistics," then click "WIR Annex Tables" or "World Investment Report"

[102] From the UNCTAD front webpage, click "programmes," then "About FDI Statistics," then "FDI performance and potential indices."

5. Facilitating SME Restructuring

As discussed above, in order to promote innovation in the economy, it is necessary to make entry and exits of firms easier. The entry and exit of firms are crucial components of SME restructuring. Thus, the next two checklist items deal with how easy are entry and exits of firms.

F-8 *How easy is it to establish and close a business in your economy?*

There are data on both of these questions in the World Bank's Doing Business Indicators. Thus, we can use the results of the World Bank's Doing Business Indicator on starting a business and closing a business to evaluate these checklist items. Members should report the overall rank for "Starting a Business," as well as the "number of procedures", "time (days)", "cost" and "minimum capital" as reported in the latest World Bank Doing Business Report; and the overall rank for "Closing a Business", "time", "cost", and "recovery rate." The report is available from http://www.doingbusiness.org.

There are other aspects of SME restructuring as well. For example, some economies may have programs or mechanisms to encourage workouts for failing SMEs. These programs can be helpful if they allow unviable SMEs to exit the market. However, if the purpose of the 'workout' program is to keep SMEs from failing, whether they are viable or not, the worth of the program becomes questionable. While such programs are advantageous for failing SMEs, it is not entirely clear at this time if these programs would be helpful for the economy as a whole, or whether such programs would promote innovation. However, because the wording for this element in the first cycle of the Daegu Initiative was left so vague, it seems appropriate to allow member economies to report various programs to facilitate SME restructuring, at least for the first cycle of the Daegu Initiative,

F-9 *Are there programs to facilitate SME restructuring in your economy?*

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using

objective criteria, if possible).

However, for the second round of the Daegu Initiative, it may be better to eliminate this checklist item unless a more formal justification for this item can be found.

6. Others

The current first round version of the Daegu Initiative contains elements dealing with cooperation and partnerships between SMEs and large companies. However, as emphasized in the beginning of this sub-chapter, SMEs and large companies are often competitors as well, and it is vital to maintain a level, competitive economic environment in order to foster innovation.

While there remains some controversy over what is the appropriate level of competition policy to foster innovation, there is considerably less controversy over the need for competition policy to protect SMEs from possible abuses by large firms. Thus, there should be a checklist item in the Daegu Initiative, which tries to examine whether the economy tries to maintain a fair competitive environment for SMEs.

F-10 *When formulating and implementing competition policy in your economy, are there processes and mechanisms which consider the problems faced by SMEs and innovative SMEs in particular?*

Member economies should report 1 if there is no such mechanism; 2 if there is such mechanism but it has not been effective, or if such mechanism is to be introduced in the near future (within 2-3 years); 3 if there is no such mechanism, but the economy does not believe there is a need for such mechanism; 4 if there is such mechanism and it is effective; and 5 if there is such a mechanism and it has been so effective that the economy believes its mechanism should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the mechanism is to be introduced. If the economy submits 3, it should explain why the economy feels that no such mechanism is necessary. If the economy submits 4, it should explain why the economy considers the mechanism to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the mechanism was needed, what the goals were, how the mechanism works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

Finally, as we have emphasized earlier, a stable macroeconomy is the foundation to maintaining an economic environment, which can support innovative SMEs. Stable macroeconomy includes, among other factors, low inflation, and low government budget deficit. Maintaining a stable macroeconomy is not always possible. Governments may need to endure higher inflation or higher budget deficits when economic situation warrants them, but a stable macroeconomy should be a goal for

every economy.

F-11 *Did your economy maintain a relatively stable macroeconomy?*

In order to evaluate this checklist item, member economies should submit the following annual macroeconomic data for the past five years:

- Annual CPI inflation rates
- Unemployment rates
- Real GDP growth rates
- Government budget surpluses or deficits (as percentage of GDP)
- Prime interest rates and/or 1 year commercial paper rate for best companies.

Preferably, for compatibility, the figures from IMF Financial Statistics should be reported, but member economies may submit their own figures.

Finally, the last checklist item asks for any other measures that member economies have instituted to help establish a market consistent economy. Member economies should report any measures which they believe is relevant, but does not belong in any of the checklist items listed above. Member economies may also submit a "best practice" report concerning this measure if they feel that the measure warrants being a "best practice."

F-12 *In the area of establishing a market consistent economy, what other relevant measures are in place?*

7. Summary

In the discussion above, we have presented a checklist for the currently selected elements in the area of maintaining market consistent economy. However, as we have argued in the introduction, the current elements do not seem to truly reflect the original intent as outlined in the 2005 Daegu Initiative report, and some of the elements may not be desirable in the long run.

To this end, we suggest that in the second round of the Daegu Initiative, the current elements be replaced by the following: 1) Establishing a stable and transparent macroeconomic environment; 2) Ease of entry and exit; 3) Competition policy; 4) Market liberalization and access; 5) Others. The checklist items should be rearranged or eliminated as appropriate. Our recommendations for "Maintaining a Market Consistent Economy" in the second round of the Daegu Initiative are listed in <Table 7-1> below.

<Table 7-1> Recommendation for Elements and Checklist Items in the Second Daegu Initiative for "Maintaining a Market Consistent Economy"

Element	Definition	Checklist Item
1. Establishing a stable and transparent macroeconomic environment	Is the macroeconomy stable and transparent enough so that entrepreneurs and innovative SMEs have a predictable and stable operating environment?	Stable and low price inflation; Stable government budget deficit;
		Transparent economic system
2. Ease of Entry and Exit	Can entrepreneurs establish an innovative SME easily? If an SME goes out of business, will its demise be relatively straightforward and simple so that resources can be allocated efficiently?	Number of days and effort to establish a firm (Doing Business Indicator)
		Number of days and effort required for exit of a firm (Doing Business Indicator)
3. Competition Policy	Does the government guarantee a fair, competitive environment for innovative SMEs?	Is there mechanisms within the national competition policy to take account of, and consider the competition problems faced by SMEs
4. Market Liberalization and Access	Is trade and investment open enough to facilitate diffusion of technology and information? Does the economy allow fair access of domestic markets to foreign innovative SMEs?	Tariff barriers (APEC Tariff database) – Average tariff rate, and possibly variance of tariff rates as well.
		NTBs (IMF Trade Restrictiveness Index)
		FDI Barriers
5. Others		Strengthening cooperation between large companies and SMEs
		Supporting SMEs to make inroads into overseas markets

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Chapter 10: Area G: Developing Methodologies for Effectively Measuring Progress in the Implementation of Innovation Programs for SMEs

1. Background

The area G of the Daegu Initiative is "Developing methodologies for effectively measuring progress in the implementation of innovation programs for SMEs." This area is considered important for innovative SMEs, and the Daegu Initiative emphasizes the area as follows:

> The development of statistics and other methodologies for measuring progress concerning SMEs and innovation is required if further and more in-depth analyses of SMEs and innovation are to be made on a factual and scientific basis.

The area G deals with the effective measurement of progress in the SME innovation programs' implementation. With these measurements and methodologies, the Daegu Initiative aims to provide evaluations and consultations of SME innovation policies in APEC member economies.

The SME innovation policy and programs is defined as "those measures taken to stimulate more innovative and entrepreneurial behavior in a region or a nation (Lundstrom and Stevenson, 2001)". From this perspective, APEC SMEWG (2006) reviewed and compared the innovation promoting policy programs for SMEs among 10 APEC member economies. Even though APEC SMEWG (2006) was the first attempt to provide comparison of SME innovation programs among APEC member economies, the report did not deal with policy evaluations and progress measurement in SME innovation programs in APEC member economies. However, the Daegu Initiative, which was adopted in 2005 APEC SMEMM, requires to review and measure the progress of SME innovation programs in APEC member economies. Thus, the Area G requires for APEC member economies to provide their advancement in "developing methodologies for effectively measuring progress in the implementation of innovation programs for SMEs."

Policy Evaluation

The definitions of policy evaluation are as follows:

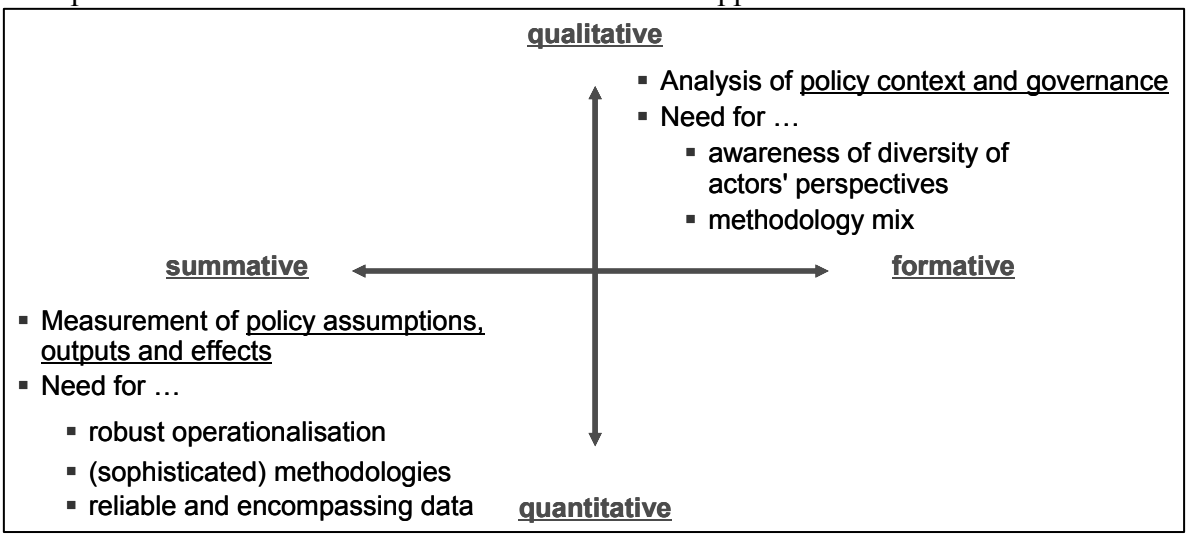
- Narrow: measuring the effects of policy/program implementation (effectiveness, efficiency)
- Broad: Narrow + evaluating the concepts, implementation process, structure and governance of policy/program

The purposes of policy evaluation are diverse and can be categorized as 1) providing necessary information to policy decision-makers for determining efficient policy strategy and programs, 2) providing accountability for policy implementation, and 3) verifying the effectiveness and rationales of policy proposals.

The classification of policy evaluation can be divided according to its purposes and characteristics into 1) Evaluation of policy effects or impacts - such as a) evaluation of policy effectiveness, b) evaluation of overall impacts, c) evaluation of policy efficiency; 2) Implementation evaluation - such as a) evaluation of correctness, and b) evaluation of relative effects of policy components); and 3) Evaluation of policy structure and governance.

Evaluation can be categorized as four poles according to its mission and approach, as seen in <Graph 10-1>. Evaluation can be characterized as a qualitative and formative one, which provides analysis of policy context and governance. This evaluation can be utilized for the awareness of diversity of stakeholders' perspectives. Evaluation can be characterized as quantitative and summative, which provides measurement of policy assumptions, outputs and effects. This evaluation can be utilized for robust operationalization with sophisticated methodologies as described in <Box 10-1>. (Kuhlmann and Edler, 2004)

<Graph 10-1>. Four Poles of Evaluation Mission and Approach



<Source> Kuhlmann and Edler (2004)

<Box 10-1> Evaluation Methods, Quantitative / Qualitative

Evaluation methods are highly diverse according to its purposes as follows;

- Quantitative: Statistical data analysis
  - **Innovation Surveys:** basic data describe the innovation process, using descriptive statistics

- **Benchmarking:** comparisons based on a relevant set of indicators across entities

- Quantitative: Modelling methodologies

  - **Macroeconomic modelling and simulation:** broader socioeconomic impact of policy interventions
  - **Microeconometric modelling:** effects of policy intervention at the level of individuals or firms
  - **Productivity analysis:** impact of R&D on productivity growth at different levels data aggregation
  - **Comparison group approach:** effect on participants using statistical sophisticated techniques

- Qualitative and semi-quantitative methodologies

  - **Interviews and case studies:** direct observation of naturally occurring events to investigate behaviours in their indigenous social setting
  - **Cost-benefit analysis:** economic efficiency by appraising economic and social effects
  - **Expert panels/peer review:** scientific output relying on the perception of peer scientists
  - **Network analysis:** structure of cooperation relationships and consequences for individuals and their social connections into networks
  - **Foresight/ technology assessment:** identification of potential mismatches in the strategic efficiency of projects and programmes

<Source> Kuhlmann and Edler (2004)

Continuous and rigorous evaluations of SME innovation programs in the process of policy feedback and policy learning are required to improve the efficiency and performance of SME innovation programs. EC (2005) asserted that "one particular requirement is the need to enhance the effectiveness and impact of publicly funded innovation support. Appropriate evaluation processes are thus required for examining the achievements of innovation programmes, initiatives and policies. These should feed into a learning process allowing continual improvement of innovation-oriented actions." EC (2005) strongly supported the implementation of evaluation of innovation programs, insisting that "establishing more of an evaluation culture is necessary to promote more systematic evaluation of innovation programmes - and to make sure that the lessons of evaluations are learned and built into policymaking. It is essential to raise the awareness of decision makers as to the rationale for, and benefits from, evaluation…. The evaluation process has to become a learning process - one that helps align stakeholder interests and incentives, improves coordination of the actors of the innovation system, and increases the value added achieved from interventions into the innovation system."

However, evaluation in innovation programs is a complex process, which can not be easily measured and evaluated. EC (2005) also recognized the complexity of innovation

program that "First of all, innovation is a broad, systemic and subtle phenomenon. Impacts of innovation programmes and outcomes are even harder to measure than those of more limited research and development programmes. Secondly, many policies that are not explicitly labeled innovation policies may facilitate the diffusion of innovation (others may even hinder innovation, or bias it in specific directions). Moreover, innovation is diverse and pervasive and innovation is itself constantly changing (in how it is organised, what sorts of knowledge is used to create what sorts of products, processes or behaviors). While innovation is both a buzzword and a very real underpinning of entrepreneurship and competitiveness, the isolation and evaluation of the results of innovation programmes or projects can be very challenging."

SME Policy Index

In 2003, the European Charter for Small Enterprises, a pan-European instrument developed under the framework of the Lisbon Agenda, was adopted by all Western Balkan countries and UNMIK/Kosovo, which contributed to a change in SME policy perspective. The SME Policy Index measures their progress in implementing the Charter along its 10 policy dimensions. These 10 policy dimensions include 1) Education and training for entrepreneurship, 2) Cheaper and faster start-up, 3) Better legislation and regulation, 4) Availability of skills, 5) Improving online access for tax filing and company registration, 6) Getting more out of the Single Market, 7) Taxation and financial matters, 8) Strengthening the technological capacity of small enterprises, 9) Successful e-business models and top class business support, and 10) Developing stronger, more effective representation of small enterprises. The SME Policy Index Report, which was published in 2007, can provides 1) an overview of each country's performance on small enterprise development, 2) benchmarking progress relative to their peers in the region, 3) priorities to further improve the small enterprise environment, and 4) direction on how to make improvements within each policy dimension by adopting OECD good practices (EC and OECD, 2007).

The evaluation process of SME Policy Index are implemented through 6 consecutive phases: 1) The Investment Compact and its three partner organizations (EC, EBRD, ETF) designed the SME Policy Index toolkit, 2) Using the toolkit, Western Balkan countries and UNMIK/Kosovo conducted self-evaluations, structured in a national report along the lines of the charter dimensions, 3) A team of independent consultants used the SME Policy Index to conduct independent counter-assessments, 4) Preliminary scorings were determined by the partner organizations, 5) Governments were given an opportunity to comment on the preliminary scorings and 6) Final decisions on scores were taken by the partner organizations (EC and OECD, 2007).

The objectives of the SME Policy Index are 1) structured evaluation (evaluate progress in SME policy reform in the Western Balkans on a comparative basis and define countries' position on a scale of 1 to 5 (weaker to stronger), corresponding to the various dimensions of reform); 2) targeted support for improvement (prioritize regional and country level policy priorities and support needs); 3) regional collaboration and peer review (encourage more effective peer review through a common evaluation framework); 4) public and private sector involvement (offer a simple and

transparent communication tool for potential entrepreneurs or investors and establish a measurement process that encourages public/private consultation); and 5) planning and resource allocation (facilitate medium-term planning, particularly for dimensions that require multi-year programs and provide a tool for resource mobilization and allocation, following the identification of strong points and areas for improvement) (EC and OECD, 2007).

Ten areas of SME policy has its own sub-dimensions, which are also consisted of several indicators (EC and OECD, 2007). These indicators are structured around five levels of policy reform, with 1 being the weakest and 5 the strongest. The policy development level of each indicator is typically structured as follows:

- Level 1: there is no law or institution in place to cover the area concerned;
- Level 2: there is a draft law or institution, and there are some signs of government activity to address the area concerned;
- Level 3: a solid legal and/or institutional framework is in place for this specific policy area;
- Level 4: level 3 + some concrete indications of effective policy implementation of the law or institution;
- Level 5: Level 3 + some significant record of concrete and effective policy implementation of the law or institution. This level comes closest to good practices identified as a result of the EU Charter process and the OECD Bologna Process.

The weights are given to each sub-dimension and indicator according to its perceived importance in relation to SME policy development. The report indicated that the weights have been assigned as result of a process of consultation between the four partner organizations and the National Charter Coordinators. Basically, the weighting system ranges from 3 (most important) to 1 (least important). However, the report also cautioned, concerning the aggregate country scores and their comparison - "the decision was taken not to aggregate the evaluation results for each country or jurisdiction in a single numerical index. It would, in fact, be impossible to correctly determine the weight of each dimension. The SME Policy Index has been designed as a tool to foster policy dialogue among the SME policy stakeholders at country and regional level. It is therefore up to the policy stakeholders to decide on which dimension or specific dimension to concentrate their efforts. In addition to being methodologically unfounded, a single numerical index would risk misleading the policy debate, concentrating the discussion on countries' overall relative performance instead of focusing more productively on relative strengths and weaknesses"(EC and OECD, 2007).

Developing Methodologies for Effectively Measuring Progress on the Implementation of Innovation Programs for SMEs" in the Daegu Initiative

In the Daegu Initiative, for the area of 'Developing methodologies for effectively measuring progress in the implementation of innovation programs for SMEs', there are four elements: 'Customer-oriented evaluation system,' 'SME policy disclosure and evaluation system,' 'SME policy comparing system,' and 'SME policy proposal

system.'

The area of "Developing methodologies for effectively measuring progress in the implementation of innovation programs for SMEs" in Deaegu initiative clearly deals with evaluation systems of SME innovation policy programs. Thus, this area consists of several elements dealing with policy learning systems, which are 1) policy evaluation, 2) policy disclosure, 3) policy proposal, and 4) policy comparison. Furthermore, this area proposes to check the policy system development of evaluation system toward a more customer-oriented policy system.

2. Customer-Oriented Evaluation System

Government needs to properly establish a consultation channel with SMEs in order to represent SMEs' interests and their specific policy requirements. Often, SMEs are scattered and are not rigorously organized as much as huge-monopolistic enterprises, so they may not be able to raise their voices in the process of policy developments in national agendas related to SMEs' interests. However, due to market failures in relation to cluster formation involving SMEs and venture firms (Cohen, 2001), government should furnish SME-friendly business environment for developing technological and managerial capability of SMEs. In this perspective, government should establish a consultation channel with SMEs to monitor their interests. EC and OECD (2007) also showed the same concern for SME representation in social dialogue, cautioning about policy bias toward large enterprises; "Larger enterprises, representing important shares of countries' GDP or employment, will always find ways to articulate their interests and concerns. They often have no need for specific channels to influence policymaking. Government policy can become biased towards larger enterprises or, worse, towards specific larger ones. These companies' interests are not identical with – and sometimes even conflict with – those of smaller ones." Moreover, the report advocates the importance of private-public social dialogue to build social trust and smooth implementation of SME policies; "Setting up such channels of consultation also plays an important part in cultivating social capital in a country, i.e. levels of trust between the private and the public sector. If companies feel that they have been heard by government officials who design the policies affecting them, and that their concerns have been taken on board, implementation of these policies will take place more smoothly, with less resistance or evasion". Thus, the first checklist item examines whether the government has regular and proper channels of communication with SMEs. Especially, channels of dialogue with the SME sector are needed to represent their interests in the process of SME legislation and policy even from the early drafting stage.

G-1. *Are there proper channel of consultation and communication involving key actors from private SME sector in order to represent SME interest from the drafting stage of SME legislation and policy?*

Member economies should report 1 if there is no such regular meeting; 2 if there are such regular meetings but it has not been effective, or if such a meeting is to be introduced in the near future (within 2-3 years); 3 if there is no such regular meetings,

but the economy does not believe there is a need for such meetings; 4 if there is such meetings and they are effective; and 5 if there is such meetings and they have been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the meetings are to be introduced. If the economy submits 3, it should explain why the economy feels that no such meetings are necessary. If the economy submits 4, it should explain why the economy considers the meetings to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the meetings were needed, what the goals were, how the meeting works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

Government should formally implement Regulatory Impact Assessments (RIAs) for SME-related laws and regulations, through which the potential impacts of government involvement or inaction in the SME policy programs on SMEs' interests are reviewed and examined. RIAs evaluate the potential benefits or costs of SME-related policy programs on SMEs interests. RIAs are to be conducted from the drafting stage of SME policy in order to ensure the proper and quantified representation of SMEs' interests. EC and OECD (2007) stated the two-fold purposes of RIAs for SMEs: "To improve SME-related policy instruments; To reduce the number of SME-related legal instruments by avoiding unnecessary legislation". Thus, the next checklist item reviews whether the government has RIAs in the process of SME legislation or policy program formation.

G-2. *Are Regulatory Impact Assessments, involving key actors from private SME sector in order to represent SME interest, applied to monitoring and assessing the impact of SME support measures?*

Member economies should report 1 if there is no such regular meeting; 2 if there are such regular meetings but it has not been effective, or if such a meeting is to be introduced in the near future (within 2-3 years); 3 if there is no such regular meetings, but the economy does not believe there is a need for such meetings; 4 if there is such meetings and they are effective; and 5 if there is such meetings and they have been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the meetings are to be introduced. If the economy submits 3, it should explain why the economy feels that no such meetings are necessary. If the economy submits 4, it should explain why the economy considers the meetings to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the meetings were needed, what the goals were, how the meeting works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

3. SME Policy Disclosure and Evaluation System

After the implantation of SME innovation policy, the disclosure and evaluation of SME policy programs become important for efficiency and efficacy of SME innovation programs. The efficient dissemination of policy information to appropriate policy-customers is indispensable for high and wide utilization of SME innovation programs. The systematic establishment of a single on-line portal which can be utilized for policy-information diffusion is important element in the SME policy disclosure system. This SME-dedicated online portal can provide information on SME-related services and innovation programs, which are produced by government, and the requirements and criteria of SMEs for application and selection. This online portal should also have interactive features which can be used to communicate information concerning SME innovation policy programs and SMEs' specific interests to the government. Thus, the next checklist item asks whether the government provides SME-specific on-line portal for dissemination of SME policies with interactive features.

G-3. *Are there SME-specific single on-line portal which is dedicated to disseminating information on SME policies and allows interaction (request of information and applications by SMEs) between SME administration and SMEs?*

Member economies should report 1 if there is no such regular meeting; 2 if there are such regular meetings but it has not been effective, or if such a meeting is to be introduced in the near future (within 2-3 years); 3 if there is no such regular meetings, but the economy does not believe there is a need for such meetings; 4 if there is such meetings and they are effective; and 5 if there is such meetings and they have been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the meetings are to be introduced. If the economy submits 3, it should explain why the economy feels that no such meetings are necessary. If the economy submits 4, it should explain why the economy considers the meetings to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the meetings were needed, what the goals were, how the meeting works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

<Box 10-2> Availability of on-line information in European Balkan regions

	Address	English + local language	Government information	Official forms	e-business services	FAQs	Fully interactive
Albania	http://www.seebiz.net.al[1]	X	X	N/A	N/A	N/A	N/A
Bosnia and Herzegovina	www.fbihvlada.gov.ba www.kfbih.com www.rars-msp.org www.bdcentral.net www.brckopkomora.com	✓	✓	X	X	X	X
Croatia	www.hitro.hr	✓	✓	✓	X	✓[2]	✓
UNMIK/Kosovo	www.odaekonomike.org www.kosovo-eicc.org www.mti-ks.org www.kosovatenders.org www.kosovabiz.com	✓	✓	X	✓	X	X
The former Yugoslav Republic of Macedonia	www.economy.gov.mk www.uslugi.gov.mk www.apprm.org.mk www.gov.mk www.ebiz.org.mk www.euroinfo.org.mk www.sojuzkomori.org.mk	✓	✓	X	X	X	X
Montenegro	www.nasme.cg.yu	✓	✓	X	X	X	X
Serbia	www.pks.co.yu www.sme.sr.gov.yu	✓	✓	X	X	X	X

<Source> EC and OECD (2007) "SME Policy Index"

The systematic and consistent provisions on statistics are essential in developing adequate and efficient establishment of SME innovation programs. Given that the statistics need to be consistent for international comparison purposes, government should provide guidelines to articulate accuracy, coverage and adequacy of SME-related and innovation-related statistics so that these statistics can be used in international statistics programs. The next checklist item asks whether the government of a member economy has programs for developing a statistics program for measuring innovative SMEs' activities, performances as well as evaluating SME innovation policies.

G-4 *Are there statistics measuring innovative SMEs' activities and performances, and for evaluating SME innovation policies?*

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not

believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible). Members should also report whether advice is offered at no cost, at subsidized prices, at cost, or for-profit basis.

Policy evaluation is a part of the policy learning process. Systematic policy learning can improve efficiency and efficacy of SME innovation policy programs and also can reduce policy failures which produce diseconomy effects on SME innovation and market mechanism. The possibility of policy failures in innovation programs can be escalated due to the complexity of SME innovation mechanism and commercialization process in the market. Thus, in order to eliminate inappropriate government intervention in SME innovation, a policy learning system should be established in the course of SME innovation policy program implementation. The policy learning system should have a cycle of policy experimentation, evaluations, adaptations and reviews. Thus, the next checklist item asks whether the member economy has a program of policy learning system when implementing SME innovation policy programs.

G-5. *Are there policy learning systems for SME innovation policies based on the cycles of policy experimentation, evaluations, adaptations and reviews and how effective are those programs?*

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

Given that SME innovation policy programs are inter-governmental and cross-functional in nature, the government of member economies should establish a SME-dedicated agency, which ensures the representation of SMEs' interests in governmental agencies' diverse innovation programs, and coordinates inter-governmental SME innovation programs. This SME-dedicated governmental agency should formulate a national agenda and strategic planning with the long-term objective of improving SME innovations in the member economies. EC and OECD (2007) also emphasized the coordinating and strategy development role of the SME agency: "Intergovernmental co-ordination is essential to ensure transparency and harmonization when SME policies are elaborated. Ideally, this type of co-ordination should be led by a *single* institution with effective mechanisms for policy coordination, involving key ministries, agencies and local administrations when relevant." Thus, the next checklist item asks whether the member economy has a SME policy implementation agency, which can formulate strategic planning and coordinate intergovernmental SME innovation policy programs.

G-6. *Are there SME policy implementation agencies, which is the main body for SME strategy and policy proposal, evaluation, implementation and reporting?*

Member economies should report 1 if there is no such agency; 2 if there is such an agency but it has not been effective, or if such an agency is to be introduced in the near future (within 2-3 years); 3 if there is no such agency, but the economy does not believe there is a need for such an agency; 4 if there is such an agency and it is effective; and 5 if there is such an agency and it has been so effective that the economy believes its agency should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the agency is to be introduced. If the economy submits 3, it should explain why the economy feels that no such agency is necessary. If the economy submits 4, it should explain why the economy considers the agency to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the agency was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

4. SME Policy Comparing System

International cooperation and benchmarking in SME innovation policies has become important as SME innovation and policy gained more complexity in a globalized business environment. The experiences of SME innovation policies from international perspective should be incorporated into member economies' own policy implementation. Thus, in order to incorporate international experiences in SME innovation policies, it is important for member economies' governments to participate in international benchmarking programs or international cooperation programs dealing with SME innovation policies. The next checklist item asks whether the member

economy has participated in this kind of international cooperation or benchmarking programs in the areas of SME innovation policies.

G-7. *Are there international cooperation and benchmarking programs for SME innovation policies, which fosters learning from good practices, and how effective are those programs?*

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible). Member economies should also report, if possible, whether the equipment rental is offered at no cost, at subsidized prices, at cost, or offered at for-profit basis.

5. SME Policy Proposal System

For an effective policy proposal system to work in SME innovation policy programs, the implementation of effective communicative channels should be established between SMEs and member economies' governments. In order to construct effective communicative channels for policy implementation, there should be policy counterpart from the SMEs sector, which can represent numerous and diverse SMEs' interests. SME associations and craft associations can play such a role. Thus, SME associations and craft associations should be well organized and operated at national level to propose national strategic SME innovation policies and programs.

Moreover, online and offline policy proposal system should be systematically organized and operated to synthesize SMEs' diverse opinions and manifest them in SME legislations. The next checklist item asks whether the government of the member economy provides online and offline channels of communication with SMEs and whether these communication channels are effective in organizing diverse SMEs interests in SMEs policy programs.

G-8. *Are there on-line/off-line policy proposal systems for SMEs, and what are the number of proposals and adaptations on an annual basis?*

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

Due to the number of SMEs, SMEs are needed to form national associations in order to form a united voice for their interest representation in SME legislation and policy programs. Firstly, whether SME chambers of commerce are privately operated or not, being free from government interventions is an important factor for the independent operations of SME associations. Secondly, self-assessment should be given to check how many associations have been established to represent the SMEs' interests and how rigorously organized they are. Whether their membership structure and their capacity for representing SMEs' interests in SME policy formation at national agendas is sufficient. EC and OECD (2007) also showed the same concern that "the assessment is concerned with whether associations are loose, ad hoc collections of weak and biased organisations; strong, robust, influential national networks for business advocacy; or somewhere in between". Thus the checklist item should examine whether independent SME associations are operated with capacity to conduct meaningful policy proposals for national SME policy legislation and programs.

G-9. *Are there organized-and-independent SME associations and craft associations operating at national level, which have capacity to conduct constructive and regular policy proposals on a wide range of SME policy issues, and what are their activities?*

Member economies should report 1 if there is no such program; 2 if there is such a program but it has not been effective, or if such a program is to be introduced in the near future (within 2-3 years); 3 if there is no such program, but the economy does not believe there is a need for such a program; 4 if there is such a program and it is effective; and 5 if there is such a program and it has been so effective that the economy believes its program should be considered an APEC best practice.

If possible, the answer should be accompanied by a short comment. If the economy submits 2 in this checklist item, it should explain if and when the program is to be introduced. If the economy submits 3, it should explain why the economy feels that no such program is necessary. If the economy submits 4, it should explain why the economy considers the program to have been effective (i.e. what are the criteria for determining effectiveness). If the economy submits 5, it should submit a "best practice report" which includes details on why the program was needed, what the goals were, how the program works, how it fulfilled the goals, and how effective it has been (using objective criteria, if possible).

6. Summary

This chapter has presented the checklist items for the currently selected elements in 'Developing methodologies for effectively measuring progress in the implementation of innovation programs for SMEs.'

Even though the four elements in the area, "Customer-oriented evaluation system," "SME policy disclosure and evaluation system," "SME policy comparing system," and "SME policy proposal system" are properly suggested for the second cycle, we recommend that elements should be re-categorized into 1) SME policy disclosure and proposal system: accessibility of SMEs to SME innovation policy programs, 2) SME policy learning system: cycles of policy experimentation, evaluations, adaptations and reviews, and 3) Measurements of SME innovation and policy impacts. However, since this area has minimal importance when comparing to other areas from SME innovation policy perspective, another option is that this area should be eliminated in the subsequent cycles.

<Table 10-1> Recommendation for Elements and Checklist Items in the Second Daegu Initiative for "Developing methodologies for effectively measuring progress in the implementation of innovation programs for SMEs"

Element	Definition	Checklist Item
1. SME Policy Disclosure and Proposal System; Accessibility of SMEs to SME innovation policy programs	Does the government have policy disclosure and policy proposal system for innovative SMEs in order to ensure the best intesrsts of innovative SMEs?	1. *Are there organized-and-independent SME associations and craft associations operating at national level, which have capacity to conduct constructive and regular policy proposals on a wide range of SME policy issues, and what are their activities?*
		2. *Are there proper channel of consultation and communication exist involving key actors from private SME sector in the drafting stage of SME legislation and policy in order to represent SME interest?*

		3. *Are there SME-specific single on-line portal which are dedicated to disseminate SME policies and to allow interaction (request of information and applications by SMEs) between SME administration and SMEs?*
		4. *Are there on-line/off-line policy proposal system for SMEs, and what are the number of proposals and adaptations on an annual basis?*
2. SME Policy Learning System: Cycles of Policy Experimentation, Evaluation, Adaptation and Review	Are there policy learning systems in the area of SME innovation policies which have the policy formulation cycles of policy experimentation, evaluations, adaptations and reviews? And how effective are those programs?	5. *Is there SME policy implementation agency, which is the main body for SME strategy and policies' proposal, evaluation, implementation and reporting?*
		6. *Are there Regulatory Impact Assessments, which are applied to monitoring and assessing the impact of SME support measures, involving key actors from private SME sector in order to represent SME interest?*
		7. *Does the government establish evaluation system which is SMEs-oriented and SMEs-driven in order to represent SMEs' best interests?*
		8. *Are there International cooperation and benchmarking programs for SME innovation policies, learning from good practices?*
3. Measurements of SME Innovation and Policy Impacts	Does the government have the dedicated programs for statistics and policy impact researches of SME innovation and SME innovation policies?	9. *Are there statistics exist for innovative SMEs' activities and performances and for evaluating SME innovation policies?*
		10. *Are there international SME-related statistics programs, in which your country is participating as a member country?*
		11. *Does the government provide evidence-based policy researches which regularly evaluate the performance of SME innovation policies?*

<Reference>

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Part IV:

Chapter 11: Conclusion

This report has tried to provide guidelines for APEC member economies to submit their self-assessment reports in 2010 at the end of the first cycle of the Daegu Initiative. In addition, the research team hopes that the member economies will refer to this report and the checklist items when APEC member economies draft and submit their IAPs in 2008-2010, or in revising their current IAP entries.

In Part III where the research team examined seven individual areas of the first Daegu Initiative, the research team also tried to point out overlaps and redundancies in the current elements and areas of the Daegu Initiative. In each chapter of Part III, the research team has made suggestions on how the Small and Medium Enterprise Working Group (SMEWG) may streamline the elements.

In this chapter, the research team would like to make a suggestion for overhauling the areas of the Daegu Initiative for the second cycle.

First, there is ambiguity on what is the qualitative difference between 'establishing appropriate legal and regulatory structures" (currently Area E) and 'establishing a market consistent economic environment" (currently Area F). Thus, most of the elements in these two areas may be combined as 'Maintaining business friendly environment". This area would include elements dealing with regulatory reform, legal assistance, ease of establishing and closing a firm, market openness (trade and investment) and competition policy.

The area "Access to specialist assistance and advice" (currently area B) overlaps with almost all other areas of the Daegu Initiative, since all other areas involve providing specialist consultation to SMEs. As a result, it may be prudent to eliminate this area, and incorporate the elements currently included in this area into other areas.

Developing human resources is crucial for establishing an innovation-friendly economy, but the current Daegu Initiative looks only at one aspect of human resource development, namely "developing human resources and technology through linkage between industry and educational and research institutions" (currently, area A). Also, this area seems to overlap considerably with "Access to Specialist Assistance and Advice" (currently area B). Thus, we suggest that the area dealing with human resources be expanded, so that it looks at all aspects of developing human capital – such as capacity for entrepreneurship, training and education, and access to specialist advice - rather than concentrating on linkages between industry and institutions.

Many of the elements in the first cycle of the Daegu Initiative deal with technological innovation. However, these elements are spread throughout the seven areas, and in addition, several crucial factors, which affect technological innovation, such as IPR laws, do not seem to be adequately considered in the current version of the

Daegu Initiative. Thus, the research team suggests that, in the second round, a separate area on "Technological Innovation" be established.

Compared to other areas of the Daegu Initiative, area D, "networking and clustering for innovative SMEs" seem to be too specific. Thus, the research team suggests that the area be expanded to encompass not only regional development, but general business development as well.

Finally, the team suggests the elimination of the current area G "developing methodologies for effectively measuring progress in the implementation of innovation programs for SMEs" since it is not entirely clear what the area seeks to deliver, and, for statistics-gathering, there are other fora which are better suited for gathering statistics.

Taking these considerations, <Table 11-1> summarizes the research team's suggestion on what the areas for the second cycle of the Daegu Initiative would look like. The team offers these suggestions for the consideration of the SMEWG.

<Table 11-1> Suggestions on Areas in the Second Cycle of the Daegu Initiative

Areas	Elements which may be included (non-comprehensive)	Comparison with First Cycle of the Daegu Initiative
A. Technology Innovation	- Technology evaluation (whether technology is profitable and viable) Digitalization - R&D grants - IPR laws and regulations - Laws and regulation dealing with standards and conformance	Elements dealing with aspects of technology innovation should be placed in this area.
B. Human Resources for Innovation	- Training and education - Entrepreneurship - Access to specialist advice	Encompasses current areas A (developing Human resources and technology through linkage between industry and educational and research institutions) and B (access to specialist assistance and advice), but expanded to include entrepreneurship and general training and education
C. Networking and Business Development	- Marketing assistance (domestic and international) - Measures concerning regional innovation centers - Clustering - Measures on business incubators - Measures on government	Encompasses current area D (networking and clustering for innovative SMEs) but expands the focus to include not only regional SME innovation centers (e.g. clusters) but

	procurement (e.g. preferences for innovative SMEs)	also other measures to encourage innovative SMEs (e.g. business incubators)
D. Capital Availability	- Access to, and assistance with venture capital - SME banks - Guaranteed loans	Substantially the same as current area C (enhancing availability of capital to innovative SMEs)
E. Maintaining Business Friendly Environment	- Legal assistance - Regulatory reform (mechanisms and processs) - Market liberalization (trade and investment) - Competition policy - Ease of entering and exiting the market (establishing and closing a firm)	Combines current areas E (Establishing appropriate legal and regulatory structures) and F (Establishing a market consistent economic environment) with exception of IPR laws and standards and conformance which would be moved to "Technology Innovation."

Part V: Guidelines on How to Write the Self-Assessment Report

Short Guideline on How to Write the Self-Assessment Report

What is the Daegu Intiative?

The Daegu Initiative aims to create an economic and policy environment conducive to SME innovation in the APEC region by identifying cooperative measures based on voluntary reviews and sharing policy experiences among member economies. The initiative is designed to run for 15 years in three five-year cycles. The first cycle runs from 2005 to 2010. In the first cycle, the Daegu Initiative looks at seven areas of interest. Each area has sub-categories called 'elements.' From 2005 to 2010, the member economies may submit an Innovation Action Plan (IAP) for each area[103]. The format of the IAP is shown in <Appendix 2-1> of this report. It asks for past achievement, short-term plans and long-term plans for each element under consideration. The member economy may also submit a 'best practice' report, if the economy feels that its practices and plans for the element in question can be considered as an APEC best practice.

In 2010, each member economy may submit a self-assessment report on its SME innovation policies for the areas and elements under consideration in the first cycle of the Daegu Initiative. The APEC SME Working Group (SMEWG) may submit a report to the SME Ministers based on the material and analyses from the IAPs and the self-assessment reports. This current report describes how member economies may write and submit its self-assessment report in 2010.

For each element in each of the seven areas, the Daegu Initiative research team has specified several "checklist items" which looks at specific policy areas and statistics deemed important to fostering innovative SMEs. The lists below describe these checklist items for the seven areas under consideration in the first cycle of the Daegu Initiative, and how each economy may answer the questions specified in these checklist items. The member economy can utilize the format of the lists below to answer the questions stated in the checklist items. If necessary, the member economy can submit additional material, or refer to relevant Internet addresses for more information concerning their answers to the checklist item. The member economy may also submit best practice reports for each checklist item, if the economy feels that their practices can be considered as APEC best practice. The checklist items can also be used as a guide when writing or revising IAPs.

For the second cycle of the Daegu Initiative, the SMEWG may modify areas and elements. The report makes some suggestions on that regard.

Member economies, if they wish, may decide not to use the format suggested in this report when submitting their IAPs or their self assessment reports in 2010.

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[103] : The Innovation Action Plan should not be confused with the Individual Action Plan which deals with trade and investment liberalization.

Who Should Write It?

The IAP as well as the self assessment report due in 2010, involves seven separate areas of consideration. Thus, it is too wide-ranging for any one person to write it. Therefore, while the person responsible for liaison between the member economy's government and the APEC SMEWG should be responsible for compiling, editing and submitting the IAP as well as the self-assessment reports, he should delegate the writing of each area in the IAP and the self-assessment report to people who have expertise in that particular area. Most probably the people with most expertise will be government officials who are responsible for work concerning each individual area. The liaison person will be responsible for requesting such people to fill out the relevant parts of the IAP and the self-assessment reports, gathering and compiling their answers, and submitting them to APEC SMEWG or the APEC SME Innovation Center.

What is an Innovative SME?

The original Daegu Initiative document, as well as the elements and the checklist items, refer to 'innovative SMEs.' We should clarify what we mean by 'innovative SMEs.' Obviously, innovative SME means SME which has good capacity for innovation. Some APEC member economies have a formal legal definition of innovative SMEs, and use that definition to target various policies specifically to those innovative SMEs. Other APEC member economies do not have a formal definition of innovative SMEs, but rather formulate its policies so that SMEs with innovative capacities can take advantage of those polices and programs; in effect allowing innovative SMEs to self-select themselves. There does not seem to be any *a priori* reasons why one method is superior, or why one method should be preferred over the other. Thus, the Daegu Initiative is open to both approaches.

Further, member economies often differ on their definition of 'innovation.' For some economies, innovation implies technical innovation, which pushes beyond the currently available global technology – to discover and develop new technology. For some economies, managerial, operational and logistic innovations may be as important as technological innovation. For other economies, innovation may imply catching up to global standards in technology, management, operation, logistics and so on. Because of the differing definitions and approaches, the Daegu Initiative and the self-assessment report framework tries to be open to the differing definitions and approaches.

In Area E, we ask specifically whether the member economy has a formal legal definition of an 'innovative SME' or whether the economy has an informal definition of 'innovative SME' which it uses to formulate and target policies. For the economies, which have a definition, when responding to questions about innovative SMEs in various areas, elements and checklist items, they should limit the responses to those dealing directly with 'innovative SMEs' as defined. Please note that some questions deal only with innovative SMEs and some questions deal with SMEs generally.

If a member economy does not have a legal or informal definition of innovative

SMEs, then when a question asks a response about innovative SMEs, these economies should report their policies which are effectively aimed at SMEs with large capacity for innovation. In other words, when the question asks a response about 'innovative SMEs,' these economies should not report policies and measures aimed at all SMEs but rather designed to assist a sub-set of SMEs which has large potential for innovation.

What is the Format?

The format for IAP is listed in <Appendix 2-1>. The format for the self-assessment report is given in the lists in the following sections of Part V. In the self-assessment reports, for most checklist items, the writer can fill out '1', '2', '3', '4', or '5' in the 'evaluation criteria' column, and add short comments in the 'comments' column. If more space is needed, the writer can attach additional sheets, or the writer can refer to an Internet web address where more information is available. When the checklist item asks for statistics, the writer can submit them on a separate attachment, or the writer can submit the web address where the information is available.

On Writing Best Practice Examples:

When preparing an explanatory note or Internet webpage on "best practices," the writer of the best practice should remember that these examples serve two purposes: 1) To show that your economy has done exemplary work – to publicize your policies and the results of your policies; and 2) Let other member economies know exactly what your economy has done so that they can consider similar policies and initiatives. For both purposes, it is very important that the writer gets his ideas across accurately.

The best practice example should include the following:

1. A short introduction on what the policy is;
2. An explanation on why the policy was needed, and what its goals were;
3. What were the actual details of the policy (in terms of how they affected people and firms)?
4. What were the results of the policy, and how did the policy fulfill the stated goals?

The writer should try to give as many concrete details as possible, and try to avoid merely listing the laws and regulations that changed. Instead, the writer should try to explain how the changes in law and regulations lead to making SME innovation easier. The writer should also keep the reader in mind, and try to include details which will interest the reader, rather than just trying to list every detail, which may or may not be important. The best practice example should be at least one page long, but can be longer if the details warrant it.

A member economy can submit more than one best practice for each area or even each element or checklist item. However, the member economies should submit each best practice separately, so that they can be more easily linked from the IAP report tables.

Ideally, a best practice report should have four sections: 1) Introduction and Background (which tries to explain the need for the policy in question); 2) Section which describes the actual policies and their implementation; and 3) What their results were (including details on why this policy could be considered 'best practice.'). The report should also include as many concrete details as possible, without getting too technical; and what the policy could mean for those who are affected by the policy. The best practice should be directly related to one of the seven areas in the Daegu Initiative.

List of All Checklist Items

Checklist Items for Area A: Developing Human Resources and Technology through Linkage between Industry and Educational and Research Institutions

Element	Checklist Item	Evaluation Criteria	Comments
1. Joint research and development among university-industry-institutes	A-1 *Are there any targeted research collaboration programs that involve SMEs as designated participants of research projects?*	- 1 if there are no such mechanism - 2 if there is such a mechanism but it has not been effective, or if such a mechanism is to be introduced in the near future; - 3 if there are no such processes, but SMEs already have effective measures or if the member economy believes that no such processes are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; - 4 if there is such mechanism, and it is effective - 5 if there is such mechanism, and it has been very effective, and can be considered APEC best practice.	If possible, submitting accompanied statistics of government R&D investment executed by SMEs is helpful.
	A-2 *Basic statistics on R&D investment flows: 1) The level of R&D investment performed by university that is financed by industry; 2) The level of R&D investment performed by university that is financed by government; 3) The level of R&D investment performed by government research institutes that is financed by industry; 4) The level of R&D investment performed by industry that is financed by government*	- Please submit OECD categorization of R&D expenditure and budget outlay for government, business, and university, others	OECD countries are exempted to submit the data
2. Patent or Technology transfer	A-3 *What proportion of issued patents is owned by SMEs (the patents issued in each member state's patent office)?*	- Submit the percentile of the SME owned issued patents (and individually owned patents)..	The comparison with large firm is intended.

	A-4 *Does the government provide special incentives or institutional supports to SMEs for patent application?*	- 1 if there is no such comprehensive plan; - 2 if there is such a comprehensive plan, but it has not been effective, or if such a plan is to be introduced in the near future; - 3 if there is no such plan, but if the member economy believes that no such plan is necessary; - 4 if there is such a plan, and it is effective - 5 if there is such a plan, and it has been very effective, and can be considered APEC best practice.	
	A-5 *Are there mechanisms to promote technology transfer from public research organizations to SMEs? Is there any incentive given to public organizations for licensing publicly own patents?What proportion of public/university patents are licensed to SMEs?*	- 1 if there are no such processes; - 2 if there are such a process, but it has not been effective, or if such a process is to be introduced in the near future; - 3 if there are no such processes, but SMEs already have effective measures, or if the member economy believes that no such processes are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; - 4 if there are such processes, and it is effective - 5 if there are such processes, and it has been very effective, and can be considered APEC best practice.	Establishing TLO can be relevant policy measure.
3. Utilization of human resources and research facilities in universities and institutes	A-6 *Are there policies that enable SMEs to consult scientists and engineers in public institutes? (including. universities)?*	- 1 if there are no such processes; - 2 if there are such a process, but it has not been effective, or if such a process is to be introduced in the near future; - 3 if there are no such processes, but if the member economy believes that no such processes are necessary, or if the member economy feels that the effects on SMEs are already adequately considered;	Demand (SMEs) side policy

		- 4 if there are such processes, and it is effective - 5 if there are such processes, and it has been very effective, and can be considered APEC best practice	
	A-7 *Are there policies that stimulate public research institutes (including universities) that open research facilities to private sector? Does government provide additional incentives if the users are SMEs?*	- 1 if there are no such processes; - 2 if there are such a process, but it has not been effective, or if such a process is to be introduced in the near future; - 3 if there are no such processes, but SMEs already have effective measures, or if the member economy believes that no such processes are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; - 4 if there are such processes, and it is effective - 5 if there are such processes, and it has been very effective, and can be considered APEC best practice	Supply (Public institution) side policy
4. Incentives to attract young talents to SMEs	A-8 *Are there policies to promote and teach students entrepreneurial spirits and awards young entrepreneurs?*	- 1 if there are no such processes; - 2 if there are such a process, but it has not been effective, or if such a process is to be introduced in the near future; - 3 if there are no such processes, but SMEs already have effective measures, or if the member economy believes that no such processes are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; - 4 if there are such processes, and it is effective - 5 if there are such processes, and it has been very effective, and can be considered APEC best practice	Creating entrepreneurial culture

	A-9 *Are there policies that stimulate SME to hire postgraduate science/engineering degree holders to increase technological competence of SMEs?*	- 1 if there are no such processes; - 2 if there are such a process, but it has not been effective, or if such a process is to be introduced in the near future; - 3 if there are no such processes, but SMEs already have effective measures, or if the member economy believes that no such processes are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; - 4 if there are such processes, and it is effective - 5 if there are such processes, and it has been very effective, and can be considered APEC best practice	Attracting talented students with higher education degrees
5. Supply of human resources that meet the needs of SMEs	A-10 *Are there dedicated education programs customized to SME requests? Is the program operated at the level of a separate department or at the level of additional courses? Does government play roles in the modification of curriculum?*	- 1 if there are no such processes; - 2 if there are such a process, but it has not been effective, or if such a process is to be introduced in the near future; - 3 if there are no such processes, but SMEs already have effective measures, or if the member economy believes that no such processes are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; - 4 if there are such processes, and it is effective - 5 if there are such processes, and it has been very effective, and can be considered APEC best practice	Pre-recruit education programs

	A-11 *Are there government sponsored training programs that train employees to upgrade skills? (If so, are they targeted for SMEs?)*	- 1 if there are no such processes; - 2 if there are such a process, but it has not been effective, or if such a process is to be introduced in the near future; - 3 if there are no such processes, but SMEs already have effective measures, or if the member economy believes that no such processes are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; - 4 if there are such processes, and it is effective - 5 if there are such processes, and it has been very effective, and can be considered APEC best practice	The program may target upgrade of skills and absorption of new knowledge

Note: The statistical sub-elements should be chosen as much as close to the defined terms. For the development of comparable format, a special meeting on APEC statistical issue is required.

Checklist for Area B: Access to Specialist Assistance and Advice

Element	Checklist Item	Evaluation Criteria	Comments
1. Assessing technical challenges facing SMEs	B-1. *Does your government regularly meet with representatives from innovative SMEs, and discuss their needs?*	- 1 if there are no regular meetings; - 2 if there are such regular meetings but they have not been effective, or if such regular meetings are to be introduced in the near future; - 3 if there are no such regular meetings, but the member economy believes that no such meetings are necessary; - 4 if there are such regular meetings, and they are effective; - 5 if there are such regular meetings, and they have been very effective, and can be considered APEC best practice.	- If an economy submits a 2, explain if and when the regular meetings are to be introduced; - If an economy submits 3, explain why the economy feels that no such programs are necessary or why it believes SMEs can already effectively make their needs known; - If an economy submits 4, explain why the economy considers the regular meetings to have been effective (i.e. what are the criteria for effectiveness?); - If an economy submits 5, please submit a "best practice" report.
2. Consulting SMEs digitalization	B-2. *Does your economy have broadband connections widely available to your businesses? If not, is there a plan on introducing more broadband connections to businesses?*	- Report the latest UNCTAD ICT statistics in following categories: · Proportion of enterprises using computers; · Proportion of enterprises using Internet; · Proportion of enterprises with a website; · Proportion of enterprises receiving orders over Internet; · Proportion of enterprises placing orders over Internet; · Proportion of enterprises accessing Internet by ISDN, Fixed line connection under 2 Mbps and over 2 Mbps;	- The data is available from http://www.unctad.org (click statistics → statistical databases on line → ICT statistics)
	B-3 *Does your economy's government offer advice to your SMEs on how best to*	- 1 if such advice is offered; - 2 if such advice is offered, but it has not been effective, or if such program is to be introduced in the near future; - 3 if no such advice is offered, but the	- If an economy submits a 2, explain if and when such program will be introduced; - If an economy submits 3, explain why the economy feels that no such programs are necessary or why it believes SMEs can

	digitalize their businesses	member economy believes that no such advice is necessary; - 4 if there are programs to offer such advice, and they are effective; - 5 if there are programs to offer such advice, and they have been very effective, and can be considered APEC best practice. - Report also whether the advice is offered at no-cost, below-cost, at-cost or for-profit.	already effectively digitalize without any advising programs by the government; - If an economy submits 4, explain why the economy considers the advising program to have been effective (i.e. what are the criteria for effectiveness?); - If an economy submits 5, please submit a "best practice" report.
	B-4. *Does your economy also offer financial and/or tax assistance for SME digitalization?*	- 1 if such assistance is offered; - 2 if such assistance is offered, but it has not been effective, or if such assistance program is to be introduced in the near future; - 3 if no such assistance is offered, but the member economy believes that no such assistance program is necessary; - 4 if there are programs offering such assistance, and they are effective; - 5 if there are programs offering such assistance, and they have been very effective, and can be considered APEC best practice.	- If an economy submits a 2, explain if and when such assistance program will be introduced; - If an economy submits 3, explain why the economy feels that no such programs are necessary or why it believes SMEs can already effectively digitalize without any assistance by the government; - If an economy submits 4, explain why the economy considers the assistance program to have been effective (i.e. what are the criteria for effectiveness?); - If an economy submits 5, please submit a "best practice" report. - Recommend that this checklist item be eliminated in the second round. Working group may consider adding "enhancing availability of capital for SME digitalization" in Area C instead.
3. Research equipment and human resources search system	B-5. *Does your economy maintain programs for making required equipment available to innovative*	- 1 if such programs are offered; - 2 if such programs are offered, but they have not been effective, or if such programs are to be introduced in the near future; - 3 if no such programs are offered, but the	- If an economy submits a 2, explain if and when such programs will be introduced; - If an economy submits 3, explain why the economy feels that no such programs are necessary or why it believes SMEs already

	SMEs?	member economy believes that no such programs are necessary; - 4 if there are such programs, and they are effective; - 5 if there are programs, and they have been very effective, and can be considered APEC best practice. - Report also whether the use of equipment is offered at no-cost, below-cost, at-cost or for-profit.	has ready access to required equipment without any assistance by the government; - If an economy submits 4, explain why the economy considers the programs to have been effective (i.e. what are the criteria for effectiveness?); - If an economy submits 5, please submit a "best practice" report.
	B-6 *Does your economy's government maintain a database of expert consultants who would be useful for innovative SMEs, and can innovative SMEs access that database to find experts that they need?*	- 1 if such databases are available to SMEs; - 2 if such databases are available, but they have not been effective, or if such databases are to be introduced in the near future; - 3 if no such databases are offered, but the member economy believes that no such databases are necessary; - 4 if there are such databases, and they are effective; - 5 if there are databases, and they have been very effective, and can be considered APEC best practice.	- If an economy submits a 2, explain if and when such databases will be introduced and made available to SMEs; - If an economy submits 3, explain why the economy feels that no such databases are necessary or why it believes SMEs already has ready access to expert consultants and experts without any assistance by the government; - If an economy submits 4, explain why the economy considers the databases to have been effective (i.e. what are the criteria for effectiveness?); - If an economy submits 5, please submit a "best practice" report.
4. Expanding public service benefits	B-7 *Does your economy provide consulting services for SMEs concerning technical, entrepreneurial, legal or tax issues*?	- 1 if such services are offered; - 2 if such services are offered, but they have not been effective, or if such services are to be introduced in the near future; - 3 if no such services are offered, but the member economy believes that no such programs are necessary; - 4 if there are such service provision	- If an economy submits a 2, explain if and when such service provision programs will be introduced; - If an economy submits 3, explain why the economy feels that no such service provision programs are necessary or why it believes SMEs already has ready access to required consulting services without any

		programs, and they are effective; - 5 if there are service provision programs, and they have been very effective, and can be considered APEC best practice. - Report also whether the advice is offered at no-cost, below-cost, at-cost or for-profit.	assistance by the government; - If an economy submits 4, explain why the economy considers the service provision programs to have been effective (i.e. what are the criteria for effectiveness?); - If an economy submits 5, please submit a "best practice" report.
5. Innovation education for SME employees	B-8. *Does your economy encourage high school and college educational programs dealing with running innovative businesses?*	- 1 if such programs are offered; - 2 if such programs are offered, but they have not been effective, or if such programs are to be introduced in the near future; - 3 if no such programs are offered, but the member economy believes that no such programs are necessary; - 4 if there are such programs, and they are effective; - 5 if there are such programs, and they have been very effective, and can be considered APEC best practice.	- If an economy submits a 2, explain if and when such education programs to encourage innovative SMEs will be introduced; - If an economy submits 3, explain why the economy feels that no such education programs are necessary or why it believes schools offer sufficient education services on running innovative SMEs without any programs by the government; - If an economy submits 4, explain why the economy considers the programs to have been effective (i.e. what are the criteria for effectiveness?); - If an economy submits 5, please submit a "best practice" report. - Because there is an overlap between this element and Area A, the working group may consider eliminating this element and this checklist item in the second round.

	B-9 *Does your economy have programs to encourage SME employees to get further education?*	- 1 if such programs are offered; - 2 if such programs are offered, but they have not been effective, or if such programs are to be introduced in the near future; - 3 if no such programs are offered, but the member economy believes that no such programs are necessary; - 4 if there are such programs, and they are effective; - 5 if there are such programs, and they have been very effective, and can be considered APEC best practice.	- If an economy submits a 2, explain if and when such education programs to encourage further education of SME employees will be introduced; - If an economy submits 3, explain why the economy feels that no such education programs are necessary or why it believes SME employees can get sufficient further education without any programs by the government; - If an economy submits 4, explain why the economy considers the programs to have been effective (i.e. what are the criteria for effectiveness?); - If an economy submits 5, please submit a "best practice" report. - Because there is an overlap between this element and Area A, the working group may consider eliminating this element and this checklist item in the second round.
6. Others	B-10. *Does your economy have any other programs to facilitate specialist assistance and advice to innovative SMEs?*	- 1 if such programs are offered; - 2 if such programs are offered, but they have not been effective, or if such programs are to be introduced in the near future; - 3 if no such programs are offered, but the member economy believes that no such programs are necessary; - 4 if there are such programs, and they are effective; - 5 if there are such programs, and they have been very effective, and can be considered APEC best practice.	- If an economy submits a 2, describe those programs and explain if and when such programs will be introduced; - If an economy submits 3, explain why the economy feels that no additional programs are necessary or why it believes SMEs can get sufficient specialist assistance and advice without any programs by the government; - If an economy submits 4, explain why the economy considers the programs to have been effective (i.e. what are the criteria for effectiveness?);

			- If an economy submits 5, please submit a "best practice" report.

Checklist for Area C: Enhancing Availability of Capital to Innovative SMEs

Element	Checklist Item	Evaluation Criteria	Comments
1. Providing financial incentives for innovative SMEs	C-1. *Are there R&D grant programs for innovative SMEs, and if such programs exist, what are their amounts and effectiveness?*	-1 if there are no such programs; -2 if there is such a program, but it has not been effective, or if such a program is to be introduced in the near future; -3 if there are no such programs, but if the member economy believes that no such programs are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; -4 if there are such programs, and it is effective -5 if there are such programs, and it has been very effective, and can be considered APEC best practice.	- If an economy submits 3, explain why the economy feels that no such programs are necessary, or why it believes the effects on SMEs are adequately considered; - If an economy submits 4, explain why the economy considers the programs to have been effective (i.e. what are the criteria for effectiveness?) - If an economy submits 5, please submit a "best practice" report.
	C-2. *Are there tax incentive programs for innovative SMEs, and if such programs exist, what are their amounts and effectiveness?*	-1 if there are no such programs; -2 if there is such a program, but it has not been effective, or if such a program is to be introduced in the near future; -3 if there are no such programs, but if the member economy believes that no such programs are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; -4 if there are such programs, and it is effective -5 if there are such programs, and it has been very effective, and can be considered APEC best practice.	-If an economy submits 3, explain why the economy feels that no such programs are necessary, or why it believes the effects on SMEs are adequately considered; -If an economy submits 4, explain why the economy considers the programs to have been effective (i.e. what are the criteria for effectiveness?) -If an economy submits 5, please submit a "best practice" report.
	C-3. *Are there public procurement programs for innovative SMEs, and and if such*	-1 if there are no such programs; -2 if is such a program, but it has not been effective, or if such a program is to be	-If an economy submits 3, explain why the economy feels that no such programs are necessary, or why it

	programs exist, what are their amounts and effectiveness?	introduced in the near future; -3 if there are no such programs, but if the member economy believes that no such programs are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; -4 if there are such programs, and it is effective -5 if there are such programs, and it has been very effective, and can be considered APEC best practice.	believes the effects on SMEs are adequately considered; - If an economy submits 4, explain why the economy considers the programs to have been effective (i.e. what are the criteria for effectiveness?) - If an economy submits 5, please submit a "best practice" report.
2. Providing SMEs with Policy loans based on technological competence or feasibility evaluation	C-4. *Are there policy-loan programs for innovative SMEs, and if such programs exist, what are their amounts and effectiveness?*	-1 if there are no such programs; -2 if there is such a program, but it has not been effective, or if such a program is to be introduced in the near future; -3 if there are no such programs, but if the member economy believes that no such programs are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; -4 if there are such programs, and it is effective -5 if there are such programs, and it has been very effective, and can be considered APEC best practice.	- If an economy submits 3, explain why the economy feels that no such programs are necessary, or why it believes the effects on SMEs are adequately considered; - If an economy submits 4, explain why the economy considers the programs to have been effective (i.e. what are the criteria for effectiveness?) - If an economy submits 5, please submit a "best practice" report.
	C-5. *Are there evaluation processes of technological competence and feasibility in policy loan programs?*	-1 if there are no such processes; -2 if there is such a process, but it has not been effective, or if such a process is to be introduced in the near future; -3 if there are no such processes, but if the member economy believes that no such processes are necessary, or if the member economy feels that the effects on SMEs are	- If an economy submits 3, explain why the economy feels that no such processes are necessary, or why it believes the effects on SMEs are adequately considered; - If an economy submits 4, explain why the economy considers the processes to have been effective

		already adequately considered; -4 if there are such processes, and it is effective -5 if there are such processes, and it has been very effective, and can be considered APEC best practice.	(i.e. what are the criteria for effectiveness?) - If an economy submits 5, please submit a "best practice" report.
3. Establishing an institution dedicated to providing SMEs with guaranteed loans	C-6. *Are there special SME banks or financial institutions which are established for providing policy-loans for SMEs, and if such banks or institutions exist, what are their amounts and effectiveness?*	-1 if there are no such institutions; -2 if there is such a institution, but it has not been effective, or if such a institution is to be introduced in the near future; -3 if there are no such institutions, but if the member economy believes that no such institutions are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; -4 if there are such institutions, and it is effective -5 if there are such institutions, and it has been very effective, and can be considered APEC best practice.	-If an economy submits 3, explain why the economy feels that no such institutions are necessary, or why it believes the effects on SMEs are adequately considered; -If an economy submits 4, explain why the economy considers the institutions to have been effective (i.e. what are the criteria for effectiveness?) -If an economy submits 5, please submit a "best practice" report.
4. Strengthening support for guarantee	C-7. *Are there loan guarantee programs for innovative SMEs, and if such programs exist, what are their amounts and effectiveness?*	-1 if there are no such programs; -2 if there is such a program, but it has not been effective, or if such a program is to be introduced in the near future; -3 if there are no such programs, but if the member economy believes that no such programs are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; -4 if there are such programs, and it is effective -5 if there are such programs, and it has been very effective, and can be considered APEC	-If an economy submits 3, explain why the economy feels that no such programs are necessary, or why it believes the effects on SMEs are adequately considered; -If an economy submits 4, explain why the economy considers the programs to have been effective (i.e. what are the criteria for effectiveness?) -If an economy submits 5, please submit a "best practice" report.

		best practice.	
	C-8. *Are there government loan guarantee institutions which are established for providing guarantees for SME loans and if such programs exist, what are their amounts and effectiveness?*	-1 if there are no such institutions; -2 if there is such a institution, but it has not been effective, or if such a institution is to be introduced in the near future; -3 if there are no such institutions, but if the member economy believes that no such institutions are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; -4 if there are such institutions, and it is effective -5 if there are such institutions, and it has been very effective, and can be considered APEC best practice.	-If an economy submits 3, explain why the economy feels that no such institutions are necessary, or why it believes the effects on SMEs are adequately considered; -If an economy submits 4, explain why the economy considers the institutions to have been effective (i.e. what are the criteria for effectiveness?) -If an economy submits 5, please submit a "best practice" report.
5. Streamlining SME financing procedures	C-9. *Do banks have special programs for streamlining SMEs' financing procedures, and if such programs exist, what are their amounts and effectiveness?*	-1 if there are no such programs; -2 if there is such a program, but it has not been effective, or if such a program is to be introduced in the near future; -3 if there are no such programs, but if the member economy believes that no such programs are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; -4 if there are such programs, and it is effective -5 if there are such programs, and it has been very effective, and can be considered APEC best practice.	-If an economy submits 3, explain why the economy feels that no such programs are necessary, or why it believes the effects on SMEs are adequately considered; -If an economy submits 4, explain why the economy considers the programs to have been effective (i.e. what are the criteria for effectiveness?) -If an economy submits 5, please submit a "best practice" report.
	C-10. *Are there governmental promotion programs for streamlining SMEs' financial procedures?*	-1 if there are no such programs; -2 if there is such a program, but it has not been effective, or if such a program is to be introduced in the near future;	-If an economy submits 3, explain why the economy feels that no such programs are necessary, or why it believes the effects on SMEs are

		-3 if there are no such programs, but if the member economy believes that no such programs are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; -4 if there are such programs, and it is effective -5 if there are such programs, and it has been very effective, and can be considered APEC best practice.	adequately considered; - If an economy submits 4, explain why the economy considers the programs to have been effective (i.e. what are the criteria for effectiveness?) - If an economy submits 5, please submit a "best practice" report.
6. Considering SMEs outside policy support	C-11. *Are there government venture capital programs for innovative SMEs, which can be either direct equity financing programs or hybrid-funds with private venture capital, loans and if such programs exist, what are their amounts and effectiveness?*	-1 if there are no such programs; -2 if there is such a program, but it has not been effective, or if such a program is to be introduced in the near future; -3 if there are no such programs, but if the member economy believes that no such programs are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; -4 if there are such programs, and it is effective -5 if there are such programs, and it has been very effective, and can be considered APEC best practice.	- If an economy submits 3, explain why the economy feels that no such programs are necessary, or why it believes the effects on SMEs are adequately considered; - If an economy submits 4, explain why the economy considers the programs to have been effective (i.e. what are the criteria for effectiveness?) - If an economy submits 5, please submit a "best practice" report.
	C-12. *Are there policy programs for promoting networks of venture capitalists, which are often called as business agel networks (BANs)?*	-1 if there are no such programs; -2 if there is such a program, but it has not been effective, or if such a program is to be introduced in the near future; -3 if there are no such programs, but if the member economy believes that no such programs are necessary, or if the member economy feels that the effects on SMEs are already adequately considered;	- If an economy submits 3, explain why the economy feels that no such programs are necessary, or why it believes the effects on SMEs are adequately considered; - If an economy submits 4, explain why the economy considers the programs to have been effective (i.e. what are the criteria for effectiveness?)

		- 4 if there are such programs, and it is effective - 5 if there are such programs, and it has been very effective, and can be considered APEC best practice.	- If an economy submits 5, please submit a “best practice” report.

Checklist Items for Criteria D: Network and Clustering for Innovative SMEs

Element	Checklist Item	Evaluation Criteria	Comments
1. Policy for clustering SMEs by region	D-1. *What kinds of policies exist that provide incentives for the regional clustering of firms? Are there policies specifically designed for facilitating regional networks between public research institutes and SMEs?*	- 1 if there are no such mechanism - 2 if there is such a mechanism but it has not been effective, or if such a mechanism is to be introduced in the near future; - 3 if there is no such mechanism, but SMEs already have effective measures; or if the member economy believes that no such mechanism is necessary - 4 if there is such mechanism, and it is effective - 5 if there is such mechanism, and it has been very effective, and can be considered APEC best practice.	
	D-2 Are there special subsidies / policies for SMEs prepared by regional governments?	- 1 if there are no such mechanism - 2 if there is such a mechanism but it has not been effective, or if such a mechanism is to be introduced in the near future; - 3 if there is no such mechanism, but SMEs already have effective measures; or if the member economy believes that no such mechanism is necessary - 4 if there is such mechanism, and it is effective - 5 if there is such mechanism, and it has been very effective, and can be considered APEC best practice.	The relative role of regional government
2. Policy for clustering SMEs by industry	*D-3 Does government pay special attention to the industrial associations comprised mainly of SMEs?*	- 1 if there are no such mechanism - 2 if there is such a mechanism but it has not been effective, or if such a mechanism is to be introduced in the near future; - 3 if there is no such mechanism, but SMEs already have effective measures; or if the member economy believes that no such mechanism is necessary - 4 if there is such mechanism, and it is effective - 5 if there is such mechanism, and it has been very effective, and can be considered APEC best practice.	Industrial association

	D-4 Does government provide benefits for SMEs of local supply chain by setting up industrial districts?	- 1 if there are no such mechanism - 2 if there is such a mechanism but it has not been effective, or if such a mechanism is to be introduced in the near future; - 3 if there is no such mechanism, but SMEs already have effective measures; or if the member economy believes that no such mechanism is necessary - 4 if there is such mechanism, and it is effective - 5 if there is such mechanism, and it has been very effective, and can be considered APEC best practice.	Industrial district
3. Policy for promoting clustering SMEs	*D-5 How many public incubating centers are operated and how much resources are invested for its operation? - Please provide financial support level of government in terms of the absolute amount and relative share of funding (public/ private).*	- 1 if there are no such mechanism - 2 if there is such a mechanism but it has not been effective, or if such a mechanism is to be introduced in the near future; - 3 if there is no such mechanism, but SMEs already have effective measures; or if the member economy believes that no such mechanism is necessary - 4 if there is such mechanism, and it is effective - 5 if there is such mechanism, and it has been very effective, and can be considered APEC best practice. For the second and third questions, please provide relevant information if possible.	
	D-6 Are incubating centers mainly located at university campuses, private sector buildings, or government research institutes?	- 1 if there are no such mechanism - 2 if there is such a mechanism but it has not been effective, or if such a mechanism is to be introduced in the near future; - 3 if there is no such mechanism, but SMEs already have effective measures; or if the member economy believes that no such mechanism is necessary - 4 if there is such mechanism, and it is effective - 5 if there is such mechanism, and it has been very effective, and can be considered APEC best practice. For the second question about the level of supports, please	

		provide relevant statistics if possible.	
4. Strengthening network among clusters	*D-7 Are there policies to promote knowledge sharing between different clusters or between industrial associations (mainly comprised of SMEs)?*	- 1 if there are no such mechanism - 2 if there is such a mechanism but it has not been effective, or if such a mechanism is to be introduced in the near future; - 3 if there is no such mechanism, but SMEs already have effective measures; or if the member economy believes that no such mechanism is necessary - 4 if there is such mechanism, and it is effective - 5 if there is such mechanism, and it has been very effective, and can be considered APEC best practice.	
	D-8 Are there policies that link the SME clusters internationally? Does government sponsor international SME centers to encourage global operation of SMEs?	- 1 if there are no such mechanism - 2 if there is such a mechanism but it has not been effective, or if such a mechanism is to be introduced in the near future; - 3 if there is no such mechanism, but SMEs already have effective measures; or if the member economy believes that no such mechanism is necessary - 4 if there is such mechanism, and it is effective - 5 if there is such mechanism, and it has been very effective, and can be considered APEC best practice.	

Checklist Items for Area E: Establishing Appropriate Legal and Regulatory Structure

Element	Checklist Item	Evaluation Criteria	Comments
1. Providing Legal Support for Innovative SMEs	E-1. *Does your economy have a legal definition of an innovative SME? If not, does your economy have a widely used working definition of an innovative SME?*	- Yes or no - Provide the definition	-
	E-2. *Are there mechanisms to explain IPR laws to SMEs, and help SMEs make the most of rights and protection as specified in the national IPR laws?*	- 1 if there are no such mechanisms; - 2 if there is such mechanisms but it has not been effective, or if such a mechanism is to be introduced in the near future; - 3 if there is no such mechanism, but SMEs already have effective access to information concerning rights and protection under the IPR laws; or if the member economy believes that no such mechanism is necessary; - 4 if there is such mechanism, and it is effective; - 5 if there is such mechanism, and it has been very effective, and can be considered APEC best practice.	- If an economy submits a 2, explain if and when the mechanism is to be introduced; - If an economy submits 3, explain why the economy feels that no mechanism is necessary, or why it believes SMEs already have effective access to information; - If an economy submits 4, explain why the economy considers the mechanism to have been effective (i.e. what are the criteria for effectiveness?); - If an economy submits 5, please submit a "best practice" report.
	E-3. *Are there processes in place to consider the effects of legislation on SMEs?*	- 1 if there are no such processes; - 2 if there are such a process, but it has not been effective, or if such a process is to be introduced in the near future; - 3 if there are no such processes, but if the member economy believes that no such processes are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; - 4 if there are such processes, and it is	- If an economy submits a 2, explain if and when the process is to be introduced; - If an economy submits 3, explain why the economy feels that no such processes are necessary, or why it believes the effects on SMEs are adequately considered; - If an economy submits 4, explain why the economy considers the

		effective - 5 if there are such processes, and it has been very effective, and can be considered APEC best practice.	processes to have been effective (i.e. what are the criteria for effectiveness?) - If an economy submits 5, please submit a "best practice" report.
	E-4 *How efficiently does your economy enforce private contracts?*	- Submit the percentile ranking of the World Bank's latest Doing Business Indicator for enforcing contracts.	- The information is available at http://www.doingbusiness.org
	E-5 *Does your economy have a comprehensive plan to assist innovative SMEs, and are they set in legislation?*	- 1 if there is no such comprehensive plan; - 2 if there is such a comprehensive plan, but it has not been effective, or if such a plan is to be introduced in the near future; - 3 if there is no such plan, but if the member economy believes that no such plan is necessary; - 4 if there is such a plan, and it is effective - 5 if there is such a plan, and it has been very effective, and can be considered APEC best practice.	- If an economy submits a 2, explain if and when the comprehensive plan is to be introduced; - If an economy submits 3, explain why the economy feels that no such plan is necessary; - If an economy submits 4, explain why the economy considers the plan to have been effective (i.e. what are the criteria for effectiveness?) - If an economy submits 5, please submit a "best practice" report.
2. Promoting public institutions' purchases of SME products	E-6. *Are there official processes or mechanisms to introduce innovative SME products to public institutions who may be potential customers?*	- 1 if there are no such processes or mechanisms; - 2 if there are such processes or mechanisms, but they have not been effective, or if such processes or mechanisms are to be introduced in the near future; - 3 if there are no such processes or mechanisms, but if the member economy believes that no such processes or mechanisms is necessary, or if the member	- If an economy submits a 2, explain if and when the process or mechanism is to be introduced; - If an economy submits 3, explain why the economy feels that no mechanism is necessary, or why it believes SMEs already have effective access to information; - If an economy submits 4, explain why the economy considers the mechanism to have been effective

		economy feels that there are already adequate processes or mechanisms to introduce SME products to potential customers; - 4 if there are such processes and mechanisms, and they are effective - 5 if there are such processes and mechanisms, and they have been very effective, and can be considered APEC best practice.	(i.e. what are the criteria for effectiveness?); - If an economy submits 5, please submit a "best practice" report.
	E-7. *Are there official rules or guidelines encouraging public institutions to purchase from SMEs?*	- 1 if there are no such rules or guidelines; - 2 if there are such rules or guidelines, but they have not been effective, or if such rules and guidelines are to be introduced in the near future; - 3 if there are no such rules or guidelines, but if the member economy believes that no such rules or guidelines are necessary, or if the member economy feels that there are already adequate alternatives to introduce SME products to potential customers; - 4 if there are such rules or guidelines, and they are effective - 5 if there are such rules or guidelines, and they have been very effective, and can be considered APEC best practice.	- If an economy submits a 2, explain if and when the rule or guideline is to be introduced; - If an economy submits 3, explain why the economy feels that no rules or guidelines are necessary, or why it believes SMEs already have effective access to public institutions' procurement markets; - If an economy submits 4, explain why the economy considers the rules or guidelines to have been effective (i.e. what are the criteria for effectiveness?); - If an economy submits 5, please submit a "best practice" report. - Recommend elimination of this checklist item in the second round of the Daegu Initiative.
	E-8 *Are there official rules, guidelines or programs encouraging public institutions to purchase from innovative SMEs?*	- 1 if there are no such rules, guidelines or programs; - 2 if there are such rules, guidelines or programs, but they have not been effective,	- If an economy submits a 2, explain if and when the rule, guideline or program is to be introduced; - If an economy submits 3, explain

		or if such rules and guidelines are to be introduced in the near future; - 3 if there are no such rules, guidelines or programs, but if the member economy believes that no such rules, guidelines or programs are necessary, or if the member economy feels that there are already adequate alternatives to introduce SME products to potential customers; - 4 if there are such rules, guidelines or programs, and they are effective - 5 if there are such rules, guidelines or programs, and they have been very effective, and can be considered APEC best practice.	why the economy feels that no such rules, guidelines or programs are necessary, or why it believes innovative SMEs already have effective access to public institutions' procurement markets; - If an economy submits 4, explain why the economy considers the rule, guidelines or programs to have been effective (i.e. what are the criteria for effectiveness?); - If an economy submits 5, please submit a "best practice" report. - Recommend this item be moved to Area C in the next round of the Daegu Initiative
3. Enhancing support for technically competent SMEs	E-9. *Does the technical standards and conformance system contain provisions which give due consideration to difficulties faced by SMEs? If so, what are they? Are there any indicators of effectiveness?*	- 1 if there are no such provisions; - 2 if there are such provisions but they have not been effective, or if such provisions are to be introduced in the near future; - 3 if there are no such provisions, but if the member economy believes that no such provisions are necessary, or if the member economy feels that there are already adequate alternatives to give due consideration to difficulties faced by SMEs; - 4 if there are such provisions and they are effective - 5 if there are such provisions, and they have been very effective, and can be considered APEC best practice.	- If an economy submits a 2, explain if and when such provisions are to be introduced; - If an economy submits 3, explain why the economy feels that no such provisions are necessary, or why it believes there are already adequate alternatives to give due consideration to difficulties faced by SMEs; - If an economy submits 4, explain why the economy considers its provisions to have been effective (i.e. what are the criteria for effectiveness?); - If an economy submits 5, please submit a "best practice" report.

	E-10. *Does the technical standards and conformance authority or the SME authority offer assistance to SMEs applying for technical standards, or conformance certification? If so, what are they? Are there any indicators of effectiveness?*	- 1 if there is no such assistance; - 2 if there is such assistance but it has not been effective, or if such assistance is to be introduced in the near future; - 3 if there is no such assistance, but if the member economy believes that no such assistance is necessary, or if the member economy feels that there are already adequate alternatives to give assistance on technical standards or conformance certification to SMEs; - 4 if there is such assistance and it is effective - 5 if there is such assistance, and it has been very effective, and can be considered APEC best practice.	- If an economy submits a 2, explain if and when such assistance is to be introduced; - If an economy submits 3, explain why the economy feels that no such assistance is necessary, or why it believes there are already adequate alternatives to give assistance on technical standards or conformance to SMEs; - If an economy submits 4, explain why the economy considers its assistance to have been effective (i.e. what are the criteria for effectiveness?); - If an economy submits 5, please submit a "best practice" report.
	E-11. *What other support does your economy offer for technically competent SMEs?*	- Briefly describe such support. - If the support has been very effective, it can be considered APEC best practice.	- If an economy feels that it is warranted, it can submit a "best practice" report; - This checklist item should be eliminated in the second round of the Daegu Initiative
4. Enhancing support for the R&D area	E-12. *Are there support and incentives for R&D, and are SMEs eligible? If there are performance indicators for such incentives (such as amount disbursed or number of projects), report or refer to them in the IAP*	- 1 if there is no such support and incentives are open to SMEs; - 2 if there is such support and incentives open to SMEs, but they have not been effective, or if such support and incentives to SMEs are to be introduced in the near future; - 3 if there is no such support and incentives to SMEs, but if the member economy believes that no such support and	- If an economy submits a 2, explain if and when such assistance is to be introduced; - If an economy submits 3, explain why the economy feels that no such assistance is necessary, or why it believes there are already adequate alternatives to give assistance on technical standards or conformance to SMEs;

		incentives are necessary, or if the member economy feels that there are already adequate alternatives to give support R&D by SMEs; - 4 if there is such support and incentive to SMEs, and it is effective - 5 if there is such support and incentives to SMEs, and it has been very effective, and can be considered APEC best practice.	- If an economy submits 4, explain why the economy considers its assistance to have been effective (i.e. what are the criteria for effectiveness?); - If an economy submits 5, please submit a "best practice" report. - This checklist item should be eliminated in the second round of the Daegu Initiative
5. Others	E-13. *Does regulatory review and reform system exist, and does it explicitly take problems of SMEs into account?*	- 1 if the regulatory review and reform system does not explicitly take problems of SMEs into account; - 2 if the regulatory review and reform system does explicitly take problems of SMEs into account, but they have not been effective, or if such regard toward SMEs are to be introduced in the near future; - 3 if the regulatory review and reform system does not take problems of SMEs explicitly into account, but if the member economy believes that no explicit regard toward SMEs are necessary, or if the member economy feels that there are already adequate consideration for SMEs in its regulatory review and reform system; - 4 if the regulatory review and reform system explicitly takes the problems of SMEs into account, and it is effective - 5 if the regulatory review and reform system explicitly takes the	- If an economy submits a 2, explain if and when such consideration for SMEs is to be introduced; - If an economy submits 3, explain why the economy feels that no such explicit consideration of SMEs is necessary, or why it believes there are already adequate alternatives to consider the problems of SMEs; - If an economy submits 4, explain why the economy considers its system to have been effective for SMEs (i.e. what are the criteria for effectiveness?); - If an economy submits 5, please submit a "best practice" report.

		problems of SMEs into account, and it has been very effective, and can be considered APEC best practice.	
	E-14. *Does the regulatory review and reform system give due consideration to the introduction of new products and processes?*	- 1 if the regulatory review and reform system does not explicitly give due considerations for new products and processes; - 2 if the regulatory review and reform system does explicitly give due considerations for new products and processes, but they have not been effective, or if such consideration toward new products and processes are to be introduced in the near future; - 3 if the regulatory review and reform system does not explicitly give due considerations for new products and processes, but if the member economy believes that no such explicit considerations are necessary, or if the member economy feels that there are already adequate implicit consideration for new products and processes in its regulatory review and reform system; - 4 if the regulatory review and reform system explicitly give due consideration to new products and processes, and it is effective - 5 if the regulatory review and reform system explicitly give due consideration to new products and processes, and it has been very effective, and can be considered APEC best practice.	- If an economy submits a 2, explain if and when such explicit consideration for new products and processes is to be introduced; - If an economy submits 3, explain why the economy feels that no such explicit consideration of new products or processes is necessary, or why it believes there are already adequate alternatives to giving explicit due consideration to new products or processes; - If an economy submits 4, explain why the economy considers its system to have been effective in giving due consideration for new products and processes (i.e. what are the criteria for effectiveness?); - If an economy submits 5, please submit a “best practice” report.

	E-15. *In the area of legal and regulatory structure, what other relevant measures are in place?*	- Briefly describe such support. - If the support has been very effective, it can be considered APEC best practice.	- If an economy feels that it is warranted, it can submit a "best practice" report;

Checklist Items for Area F: Establishing a Market Consistent Economic Environment

Element	Checklist Item	Evaluation Criteria	Comments
1. Strengthening cooperation between large companies and SMEs	F-1 *Are there programs, which promote partnerships between innovative SMEs and appropriate large businesses?*	- 1 if there are no such programs; - 2 if there are such programs but they have not been effective, or if such programs are to be introduced in the near future; - 3 if there are no such programs, but the member economy believes that no such programs are necessary; - 4 if there are such programs, and they are effective; - 5 if there are such programs, and they have been very effective, and can be considered APEC best practice.	- If an economy submits a 2, explain if and when the programs are to be introduced; - If an economy submits 3, explain why the economy feels that no such programs are necessary or why it believes SMEs can already effectively partner with large businesses without assistance; - If an economy submits 4, explain why the economy considers the programs to have been effective (i.e. what are the criteria for effectiveness?); - If an economy submits 5, please submit a "best practice" report.
2. Facilitating digitalization of SMEs	F-2 *Are there programs to facilitate digitalization of SMEs?*	- 1 if there are no such programs; - 2 if there are such programs but they have not been effective, or if such programs are to be introduced in the near future; - 3 if there are no such programs, but the member economy believes that no such programs are necessary; - 4 if there are such programs, and they are effective; - 5 if there are such programs, and they have been very effective, and can be considered APEC best practice.	- If an economy submits a 2, explain if and when the programs are to be introduced; - If an economy submits 3, explain why the economy feels that no such programs are necessary or why it believes SMEs can already effectively digitalize without assistance; - If an economy submits 4, explain why the economy considers the programs to have been effective (i.e. what are the criteria for effectiveness?); - If an economy submits 5, please submit a "best practice" report. - Recommend this area be eliminated in

			the second round
3. Supporting SMEs to make inroads into overseas markets	F-3 *Are there programs to support innovative SMEs exporting to foreign markets?*	- 1 if there are no such programs; - 2 if there are such programs but they have not been effective, or if such programs are to be introduced in the near future; - 3 if there are no such programs, but the member economy believes that no such programs are necessary; - 4 if there are such programs, and they are effective; - 5 if there are such programs, and they have been very effective, and can be considered APEC best practice.	- If an economy submits a 2, explain if and when the programs are to be introduced; - If an economy submits 3, explain why the economy feels that no such programs are necessary or why it believes innovative SMEs can already effectively export without assistance; - If an economy submits 4, explain why the economy considers the programs to have been effective (i.e. what are the criteria for effectiveness?); - If an economy submits 5, please submit a "best practice" report. - Recommend this area be eliminated in the second round
	F-4. *How easily can innovative SMEs export their products?*	- Report the latest Doing Business Indicator for Trading Across Borders (Export)	- The information is available at http://www.doingbusiness.org
	F-5. *Are there programs to facilitate foreign investment (inward and outward) by innovative SMEs?*	- 1 if there are no such programs; - 2 if there are such programs but they have not been effective, or if such programs are to be introduced in the near future; - 3 if there are no such programs, but the member economy believes that no such programs are necessary; - 4 if there are such programs, and they are effective; - 5 if there are such programs, and they have been very effective, and can be	- If an economy submits a 2, explain if and when the programs are to be introduced; - If an economy submits 3, explain why the economy feels that no such programs are necessary or why it believes innovative SMEs can already effectively attract FDI or make direct investment overseas without assistance; - If an economy submits 4, explain why the economy considers the programs to

		considered APEC best practice.	have been effective (i.e. what are the criteria for effectiveness?); - If an economy submits 5, please submit a "best practice" report. - Recommend this area be eliminated in the second round
	F-6 *What is the level of your trade barrier? What is the simple and import-weighted average tariff rate for your economy? What is the variance of the tariff rate for your economy? What is the level of non-tariff barriers for your economy?*	- Report the latest simple and trade-weighted average tariff rate as reported in the APEC tariff database; and the variance of tariff rate as reported in the APEC tariff database. - Report the latest Doing Business Indicator for Trading Across Borders (Imports) - Report (if available) the latest IMF trade restrictiveness indicator	- Simple and weighted average tariff rates and the variance of tariff rates are available from your economy's trade and investment liberalization individual action plans. These plans are also available from http://www.apec-iap.org - The Doing Business Indicators are available at http://www.doingbusiness.org ; - IMF Trade Restrictiveness Indicators are not publicly available, but may be available through member governments' contacts at IMF
	F-7 *What is the level of barriers for FDI for your economy?*	- Report the latest UNCTAD FDI Inward FDI Indices (FDI Performance and FDI Potential) Rankings. - Also report whether, according to UNCTAD FDI Indices, whether your economy is "front-runner", "below potential" "above potential" or "under-performer"	- FDI Index Information is available from UNCTAD World Investment Report (Annual) Annex tables. The report is also downloadable from http://www.unctad.org (click programmes → Foreign Direct Investment Statistics → WIR Annex Tables or World Investment Report) - FDI index "front runner" etc. information is available from http://www.unctad.org (click programmes → About FDI Statistics → FDI performance and potential indices)

4. Facilitating SME restructuring	F-8 *How easy is it to establish and close a business in your economy?*	- Report the latest Doing Business Indicator (Ranking and points) for starting a business - Report the latest Doing Business Indicator (Ranking and points) for closing a business	- The Doing Business Indicators are available at http://www.doingbusiness.org ;
	F-9 *Are there programs to facilitate SME restructuring in your economy?*	- 1 if there are no such programs; - 2 if there are such programs but they have not been effective, or if such programs are to be introduced in the near future; - 3 if there are no such programs, but the member economy believes that no such programs are necessary; - 4 if there are such programs, and they are effective; - 5 if there are such programs, and they have been very effective, and can be considered APEC best practice.	- If an economy submits a 2, explain if and when the programs are to be introduced; - If an economy submits 3, explain why the economy feels that no such programs are necessary or why it believes SMEs can already restructure effectively without such programs; - If an economy submits 4, explain why the economy considers the programs to have been effective (i.e. what are the criteria for effectiveness?); - If an economy submits 5, please submit a "best practice" report. - Recommend this area be eliminated in the second round
5. Others	F-10 *When formulating and implementing competition policy in your economy, are there processes and mechanisms, which consider the problems faced by SMEs and innovative SMEs in particular?*	- 1 if there are no such processes and mechanisms; - 2 if there are such processes and mechanisms but they have not been effective, or if such programs are to be introduced in the near future; - 3 if there are no such processes and mechanisms, but the member economy believes that no such processes and mechanisms are necessary; - 4 if there are such processes and	- If an economy submits a 2, explain if and when the processes and mechanisms are to be introduced; - If an economy submits 3, explain why the economy feels that no such processes or mechanisms are necessary or why it believes competition policy process already effectively considers the problems faced by SMEs; - If an economy submits 4, explain why the economy considers the processes or

		mechanisms, and they are effective; - 5 if there are such processes and mechanisms, and they have been very effective, and can be considered APEC best practice.	mechanisms to have been effective (i.e. what are the criteria for effectiveness?); - If an economy submits 5, please submit a "best practice" report.
	F-11 *Did your economy maintain a relatively stable macroeconomy?*	- Report the following macroeconomic statistics for the latest five years available; ● Annual CPI inflation rates, ● Unemployment rates, ● Real GDP growth rates, ● Government budget deficit ● Prime interest rates and/or 1 year commercial paper rate for best companies	- Preferably, for compatibility, the figures from *IMF's Financial Statistics Yearbook* are desirable, but member economies may submit their own figures.
	F-12 *In the area of establishing a market consistent economy, what other relevant measures are in place?*	- Briefly describe such support. - If the support has been very effective, it can be considered APEC best practice.	- If an economy feels that it is warranted, it can submit a "best practice" report;

Checklist for Area G: Developing Methodologies for Effectively Measuring Progress in the Implementation of Innovation Programs for SMEs.

Element	Checklist Item	Evaluation Criteria	Comments
1. Customer-oriented evaluation system	G-1. *Are there proper channel of consultation and communication involving key actors from private SME sector in order to represent SME interest from the drafting stage of SME legislation and policy?*	-1 if there are no such channels; -2 if there is such a channel, but it has not been effective, or if such a channel is to be introduced in the near future; -3 if there are no such channels, but if the member economy believes that no such channels are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; -4 if there are such channels, and it is effective -5 if there are such channels, and it has been very effective, and can be considered APEC best practice.	-If an economy submits 3, explain why the economy feels that no such channels are necessary, or why it believes the effects on SMEs are adequately considered; -If an economy submits 4, explain why the economy considers the channels to have been effective (i.e. what are the criteria for effectiveness?) -If an economy submits 5, please submit a "best practice" report.
	G-2. *Are Regulatory Impact Assessments, involving key actors from private SME sector in order to represent SME interest, applied to monitoring and assessing the impact of SME support measures?*	-1 if there are no such programs; -2 if there is such a program, but it has not been effective, or if such a program is to be introduced in the near future; -3 if there are no such programs, but if the member economy believes that no such programs are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; -4 if there are such programs, and it is effective -5 if there are such programs, and it has been very effective, and can be considered APEC best practice.	-If an economy submits 3, explain why the economy feels that no such programs are necessary, or why it believes the effects on SMEs are adequately considered; -If an economy submits 4, explain why the economy considers the programs to have been effective (i.e. what are the criteria for effectiveness?) -If an economy submits 5, please submit a "best practice" report.
2. SME policy	G-3. *Are there SME-specific single on-line portal which is dedicated*	-1 if there are no such portals; -2 if there is such a portal, but it has not been	-If an economy submits 3, explain why the economy feels that no such

disclosure and evaluation system	*to disseminating information on SME policies and allows interaction (request of information and applications by SMEs) between SME administration and SMEs?*	effective, or if such a portal is to be introduced in the near future; -3 if there are no such portals, but if the member economy believes that no such portals are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; -4 if there are such portals, and it is effective -5 if there are such portals, and it has been very effective, and can be considered APEC best practice.	portals are necessary, or why it believes the effects on SMEs are adequately considered; - If an economy submits 4, explain why the economy considers the portals to have been effective (i.e. what are the criteria for effectiveness?) - If an economy submits 5, please submit a "best practice" report.
	G-4 *Are there statistics measuring innovative SMEs' activities and performances, and for evaluating SME innovation policies?*	-1 if there are no such statistics; -2 if there is such a statistics, but it has not been effective, or if such a statistics is to be introduced in the near future; -3 if there are no such statistics, but if the member economy believes that no such statistics are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; -4 if there are such statistics, and it is effective -5 if there are such statistics, and it has been very effective, and can be considered APEC best practice.	- If an economy submits 3, explain why the economy feels that no such statistics are necessary, or why it believes the effects on SMEs are adequately considered; - If an economy submits 4, explain why the economy considers the statistics to have been effective (i.e. what are the criteria for effectiveness?) - If an economy submits 5, please submit a "best practice" report.
	G-5. *Are there policy learning systems for SME innovation policies based on the cycles of policy experimentation, evaluations, adaptations and reviews and how effective are those programs?*	-1 if there are no such systems; -2 if there is such a system, but it has not been effective, or if such a system is to be introduced in the near future; -3 if there are no such systems, but if the member economy believes that no such systems are necessary, or if the member economy feels that the effects on SMEs are	- If an economy submits 3, explain why the economy feels that no such systems are necessary, or why it believes the effects on SMEs are adequately considered; - If an economy submits 4, explain why the economy considers the systems to have been effective (i.e. what are

		already adequately considered; -4 if there are such systems, and it is effective -5 if there are such systems, and it has been very effective, and can be considered APEC best practice.	the criteria for effectiveness?) -If an economy submits 5, please submit a "best practice" report.
	G-6. *Are there SME policy implementation agencies, which is the main body for SME strategy and policy proposal, evaluation, implementation and reporting?*	-1 if there are no such institutions; -2 if there is such a institution, but it has not been effective, or if such a institution is to be introduced in the near future; -3 if there are no such institutions, but if the member economy believes that no such institutions are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; -4 if there are such institutions, and it is effective -5 if there are such institutions, and it has been very effective, and can be considered APEC best practice.	-If an economy submits 3, explain why the economy feels that no such institutions are necessary, or why it believes the effects on SMEs are adequately considered; -If an economy submits 4, explain why the economy considers the institutions to have been effective (i.e. what are the criteria for effectiveness?) -If an economy submits 5, please submit a "best practice" report.
3. SME policy comparing system	G-7. *Are there international cooperation and benchmarking programs for SME innovation policies, which fosters learning from good practices, and how effective are those programs?*	-1 if there are no such programs; -2 if there is such a program, but it has not been effective, or if such a program is to be introduced in the near future; -3 if there are no such programs, but if the member economy believes that no such programs are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; -4 if there are such programs, and it is effective -5 if there are such programs, and it has been very effective, and can be considered APEC best practice.	-If an economy submits 3, explain why the economy feels that no such programs are necessary, or why it believes the effects on SMEs are adequately considered; -If an economy submits 4, explain why the economy considers the programs to have been effective (i.e. what are the criteria for effectiveness?) -If an economy submits 5, please submit a "best practice" report. -

4. SME policy proposal system	G-8. *Are there on-line/off-line policy proposal systems for SMEs, and what are the number of proposals and adaptations on an annual basis?*	-1 if there are no such systems; -2 if there is such a system, but it has not been effective, or if such a system is to be introduced in the near future; -3 if there are no such systems, but if the member economy believes that no such systems are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; -4 if there are such systems, and it is effective -5 if there are such systems, and it has been very effective, and can be considered APEC best practice.	-If an economy submits 3, explain why the economy feels that no such systems are necessary, or why it believes the effects on SMEs are adequately considered; -If an economy submits 4, explain why the economy considers the systems to have been effective (i.e. what are the criteria for effectiveness?) -If an economy submits 5, please submit a "best practice" report.
	G-9. *Are there organized-and-independent SME associations and craft associations operating at national level, which have capacity to conduct constructive and regular policy proposals on a wide range of SME policy issues, and what are their activities?*	-1 if there are no such institutions; -2 if there is such a institution, but it has not been effective, or if such a institution is to be introduced in the near future; -3 if there are no such institutions, but if the member economy believes that no such institutions are necessary, or if the member economy feels that the effects on SMEs are already adequately considered; -4 if there are such institutions, and it is effective -5 if there are such institutions, and it has been very effective, and can be considered APEC best practice.	-If an economy submits 3, explain why the economy feels that no such institutions are necessary, or why it believes the effects on SMEs are adequately considered; -If an economy submits 4, explain why the economy considers the institutions to have been effective (i.e. what are the criteria for effectiveness?) -If an economy submits 5, please submit a "best practice" report.