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**Promoting SMEs' Integration into Global Value
Chains in Major Industries
- Comprehensive Policy Report -**

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Executive Summary

This report is part of Phase II of the APEC project of “Promoting SMEs’ Integration into Global Value Chains in Major Industries” led by Korea. In 2015, Korea carried out Phase I of the project, assisted by five member economies, consisting of Malaysia, the Philippines, Thailand, Vietnam and the United States. During 2015, the six economies took responsibility for carrying out research and holding workshops in five selected industries, which are ICT/electronics (Korea), textiles/apparel (Vietnam), agri-business (Thailand), automotive (Malaysia and Philippines) and healthcare industry (United States).

The purpose of this report is to put together and share the outcomes of the projects carried out by members in the respective industries and discuss the possibilities of further expansion to contribute to APEC’s effort to facilitate GVCs. The contents of this report consist of a general discussion on SMEs’ integration into GVCs, a review and discussion of the outcomes in each industry sector, and conclusions and recommendations for the governments of member economies and APEC.

In the general discussion, the reasons why GVCs are necessary to SMEs are explained. By participating in GVCs, SMEs can participate in export markets without directly exporting their products. Otherwise, SMEs may not be able to access export markets, and hence be restricted from increasing value-added because of capability issues. SMEs can benefit from GVCs by providing the intermediates that are used by domestic firms to serve export markets. SMEs’ participation is likely to depend not just on traditional policy tools or on tackling resource constraints, but also on the extent to which domestic linkages can be nurtured. Indirect linkages of SMEs with larger domestic firms are important (particularly in sectors which require scale). Therefore, policies aimed at enhancing these linkages may benefit both SMEs and larger firms.

To facilitate the GVC system and SMEs’ facilitation, trade liberalization plays an important role. Under the GVC system, the relationship between export and import is not substitutive but complementary. Through participation in GVCs accompanying exports and imports of materials and intermediate goods, SMEs can achieve a level of value-added that would be impossible if they worked only with domestic sources in the domestic market. Larger firms also rely more on foreign value-added for export production than SMEs. Therefore, possible constraints in accessing imported intermediates obstruct the growth of value and must be removed to promote GVCs in the global economy.

The benefits of engaging GVCs do not relate to the position held within the value chain but rather to achieving higher value-added through economic gains. In other words, when SMEs participate in GVCs, the portion of foreign value-added within overall value increases. However, participating in GVCs makes the value-added to SMEs much greater than before. Therefore, it is necessary to encourage SMEs’ participation in GVCs.

In the Phase I report, each industrial Sectorial report reviewed the structure of GVCs in that sector, discussed what the obstacles are to SMEs’ participation in GVCs, and made policy recommendations to get rid of those obstacles. The obstacles most commonly pointed out are the following: 1) lack of awareness of GVCs among SMEs and information on accessible GVCs for SMEs; 2) lack of SMEs’ own capabilities, including production capacities, available resources and technology levels; 3) lack of external supports, represented by financial constraints, bad business environments, ineffective administration systems, insufficient infrastructure, etc.; and 4) protective trade measures that disturb free flows of materials and intermediates, which are necessary to maintain GVC systems.

In addition to these common obstacles, there are sector-specific obstacles reflecting the characteristics of each sector. In the ICT/electronics sector, technology transfer and intellectual property issues seriously affect SMEs' participation in GVCs. In the textile/apparel sector, dependence on imported materials is emphasized as a main obstacle to SMEs willing to take part in GVCs. The Sectorial report also sheds light on the lack of horizontal and vertical linkages in the sector's value chains. The agri-business Sectorial report emphasizes product reputations, lack of financial resources and market access. The necessity of mutually agreed product quality standards and difficulties in complying with those standards also stand out. In the report on the automotive sector, the lack of appropriate standards complying with international standards and the effect of poor business environments on SMEs' capabilities are more emphasized than in other sectors. As in the ICT/electronics sector, issues relating to SMEs' competence and technology level are also referred to as the main obstacles. Poor local industry engagement with large manufacturers is one of the obstacles that receives more attention in the automotive sector than in other sectors. In the healthcare industry, protective trade measures are more emphasized as the main obstacles to SMEs' participation in GVCs compared to other sectors. In particular, non-tariff measures are the main issue when the obstacles to SMEs' participation in GVCs are discussed.

To achieve the goal of promoting SMEs' integration into GVCs and get rid of these obstacles, several actions are recommended for APEC and the governments of its members, aggregating the recommendations from the work streams. For governments of the member economies, the followings actions are recommended: 1) Active implementation of trade/investment liberalization; 2) Supporting capacity building of SMEs; 3) Long-term policies to build social capacity in terms of business ecosystem; 4) Enhancing information accessibilities for SMEs; 5) Financial support for SMEs; and 6) Improving business environments and building effective administrative systems. The recommendations for APEC consist of collective actions that need cooperation from member economies and require APEC to take the initiative. The actions recommended are: 1) Building an APEC-wide consolidated system to assess the position of firms and economies in GVCs; 2) APEC-wide promotion of trade/investment liberalization; 3) Cooperation for promoting investment from multinational corporations (MNCs); 4) Demanding governments and firms support capability buildings of SMEs; 5) Cooperation for enhancing information accessibility; 6) Launching funds to give financial aid for SMEs willing to participate in GVCs; and 7) Figuring out how to utilize e-commerce to promote GVC participation.

A. Overview and General Discussion

1. Overview

This is the comprehensive report of Phase II of the APEC project of “Promoting SMEs’ Integration into Global Value Chains (GVC) in Major Industries”

In recent years, GVCs have become a dominant feature of the global economy. GVCs have received attention as a method to facilitate trade between countries and maximize the pay-offs to countries participating in production. By participating in GVCs, countries and enterprises can prosper together by sharing value-added created from international production cooperation. The output of GVCs can be a source of further economic development. GVCs can also play a role as a source of economic cooperation between countries. Through GVCs, participating countries can complement each other by exploiting comparative advantages at each step of the production process and hence contribute to global prosperity.

Thus, the significance of GVCs has emerged as a focal point of interests of economists and policy makers, who have been trying to figure out how to take full advantage of GVCs. Better understanding and support for the trading tasks involved in adding value to final products that cross borders have become vital for realizing a more effective policy and regulatory infrastructure for global trade. Efficient and workable GVCs within and between each of the APEC economies have accordingly become a key focus for economies at all levels of development.

Given the diverse needs and situations of APEC economies participating in global trade networks today, an overall policy direction guiding improved cooperation and a more focused GVC evolution is essential to facilitating sustainable, inclusive and balanced growth in the Asia-Pacific region. Consistent overall policy based on input from each economy is essential for moving APEC’s trade and investment agenda forward, and facilitating APEC’s push for regional economic integration.

In 2013, APEC Leaders agreed to promote GVC development and cooperation in the APEC region on the basis of previous work on connectivity to achieve the goals referred to above. This agreement highlights the need for APEC economies to work strategically and take action in creating an enabling environment for GVC development and cooperation. In response to the Leaders’ instructions, APEC economies agree to develop a Strategic Blueprint for promoting GVC development and cooperation in 2014 and set up principles and 10 workstreams for future GVC-related undertakings.

Since 2014, the means to promote each of those 10 workstreams have been sought under the leadership of the responsible APEC members. Among the workstreams, Korea took responsibility for the project of “Assisting SMEs to benefit from GVCs” as the main sponsor with the assistance of five member economies, consisting of Malaysia, the Philippines, Thailand, Vietnam, and the United States.

During 2015, each economy took the responsibility for carrying out research and holding workshops in one of five selected industries: ICT/electronics (led by Korea), textiles/apparel (led by Vietnam), agri-business (led by Thailand), automotive (led by Malaysia and the Philippines) and healthcare industry (led by the United States).

This report is intended to put together and share the outcomes of the projects carried out by members in the respective industries and discuss the possibilities of further expansion to contribute to APEC’s effort to facilitate GVC. The report consists of a general discussion of SMEs’ integration into GVCs in the APEC region and presentation of the five sectors. In the first section, general issues on SMEs’

participation in GVCs will be discussed. Then, the outcomes of the research in each of the five sectors carried out during 2015 will be discussed sequentially: ICT/electronics, textile/apparel, agribusiness, automotive and healthcare industry sectors. At the end of the report, a summary of the discussions and policy recommendations for APEC and the governments of member economies will be presented as a conclusion.

2. General Discussion

In the workshop held during the APEC meeting in Lima, Peru, in August 2016, Dr. Javier Lopez-Gonzalez from the OECD delivered a keynote speech discussing the general aspects of SMEs' integration into GVCs. This section summarizes his discussion.¹

(a) Changes in international trade brought by GVCs and their meaning for trade issues

A GVC refers to the full range of activities or tasks taking place across multiple countries during the whole process of “bringing a product from its conception to end use and beyond”.²

Traditionally, trade has been accomplished in the form of a separation of production and consumption across international borders. This means production of goods is carried out inside of an individual economy from the beginning to the end and economies exchange final products across borders. In this system, firms care mainly about market access and selling products, and international trade is spurred by reductions in transportation costs. These costs consist of tariffs and costs caused by non-tariff measures.

However, trade has changed its shape. The most distinctive change is the fragmentation of production across countries. Trade of materials and intermediate inputs has become more important than trade of final products. In addition, the exchange of intangible factors such as planning, R&D, technology, marketing, sales and services are also conducted across borders. Hence firms in developed countries are now able to combine high-tech know-how with lower-wage labor to produce at lower costs.

This form of trade is concerned mainly with producing processes, including trade, investment, services and knowledge, rather than selling products. In this environment, international trade is spurred by reductions in ICT and coordination costs. For the above reasons, GVCs are dynamic and challenge the way we think about trade and trade policy

(b) Why should we consider SMEs' integration into GVCs?

1) SMEs' participation in GVCs

Recently, GVCs have expanded towards developing and emerging economies, where the portion of SMEs that have benefited from the growth of the global economy are smaller than in the developed world. With the majority of the members of APEC being categorized as developing and emerging economies, promoting SMEs' integration into GVCs is linked to the issue of growth and development of APEC economies. SMEs make up 97% of enterprises and employ more than half of the domestic workforce³ in many APEC economies. However, SMEs' contribution to value-added and

1 J. Lopez-Gonzalez (2016), “SME participation in GVCs”, presentation materials used at the workshop

2 Gereffi and Fernandez-Stark (2011)

³ From the introduction part of Small and Medium Enterprises Working Group, APEC website.

(<http://www.apec.org/groups/som-steering-committee-on-economic-and-technical-cooperation/working-groups/small-and-medium-enterprises.aspx>, retrieved on 11 October 2016)

exports is limited. In ASEAN economies, the contribution of SMEs to value-added and exports is just about one-third.

In spite of the proportion of SMEs among businesses, it is widely recognized that SMEs are at a disadvantage due to size and limited access to resources. Their small size restricts their capacity for economies of scale, and limited access to finance, investment information and technology prevents them from achieving a higher level of growth potential. GVCs can be a key to solving these essential problems of SMEs and allowing them to overcome some of these constraints.

2) Possible benefits for SMEs

According to the presentation by Dr. Lopez-Gonzalez at the APEC workshop in August 2016, participation in GVCs is associated with growing productivity, exporting more sophisticated products and less concentrated export baskets.⁴

GVCs are necessary to SMEs because of the benefits they bring. The benefits of engaging in GVCs relate not to the position held within the value chain but rather to getting higher value-added by economic gains. This means an SME can get more benefits from a “larger pie” by participating in GVCs, even though a bigger portion of the pie is taken by larger firms that create and operate the overall value chains. Therefore, it is necessary to encourage SMEs’ participation in GVCs.

Another benefit of GVCs for SMEs is that they enable indirect participation in export markets. Due to their lack of capabilities, SMEs are usually not able to access export markets, and hence are restricted from increasing the value-added they take. SMEs can benefit from GVCs by providing inputs to larger firms through domestic linkages to serve export markets. This allows SMEs no longer to need to master all the processes that lead to the production of a final product, but to specialize in the provision of inputs to production.

As sellers of products, SMEs do not need to master the entire production process and can slot into the most appropriate segments of the global production according to their own comparative advantage by participating in GVCs. Hence, they can access the global market either through direct or indirect exporting.

(c) GVCs and trade liberalization

To facilitate the GVC system and SMEs, trade liberalization plays an important role. Under the GVC system, the relationship between exports and imports is not substitutive but complementary. Through participation in GVCs accompanying exports and imports of materials and intermediate inputs, SMEs can achieve a level of value-added that would be impossible if they do business only with domestic sources in the domestic market.

Larger firms also rely more on foreign value-added for export production than SMEs. Therefore, possible constraints in accessing imported inputs obstruct the growth of value and must be removed to promote GVCs in the global economy. As buyers of products, SMEs can have wider access to more sophisticated and competitively priced imported intermediates, new technologies in capital products and technology transfers from lead firms.

⁴ Kowalski et al., 2015

Therefore, trade liberalization is indispensable to facilitate the increase of created values through GVCs and SMEs' participation in GVCs, whether as exporters or importers of products. In one empirical study,⁵ it was found that SMEs can leverage GVCs to increase export propensity. In the study, the export propensity of SMEs and labor productivity are positively correlated with the share of foreign intermediates and the share of foreign ownership. This implies exports and imports are complements to each other rather than substitutes, and an increase in imports through participation in GVCs does not harm but supports the facilitation of exports of SMEs.

(d) How can SMEs use GVC frameworks: Identifying domestic linkages

To promote the SMEs' participation in GVCs, indirect linkages of SMEs with larger domestic firms are important (particularly in sectors which require scale). SMEs' participation in GVCs is likely to depend not just on traditional policy measures such as tariffs, market access and trade facilitation policies or on tackling resource constraints but also on the extent to which domestic linkages can be nurtured.

In most industries, the share of SMEs' value-added in exports is greater than the share of SMEs in export sales. SMEs use less foreign value-added than larger firms, while relying on larger firms for inputs. On the other hand, larger firms rely more on foreign value-added for export production than SMEs. Therefore, possible constraints in accessing imported intermediates may limit the benefits that they can draw from GVCs on the input side. Policies aimed at enhancing these linkages may benefit both SMEs and larger firms.

Since policies can have unintended effects, governments have to be careful when choosing policy measures. Policies like local content requirements can hurt the domestic value-added of value chains. By using such protective measures, a government can induce the portion of the value-added that domestic participants occupy. However, using protective measures results in reducing the absolute volume of the value-added of the overall value chains. Protective measures hence reduce the size of the value falling into the hands of domestic participants.

⁵ J. Lopez-Gonzalez (forthcoming), "SMEs in GVCs in Southeast Asia"

B. Sectoral Discussion

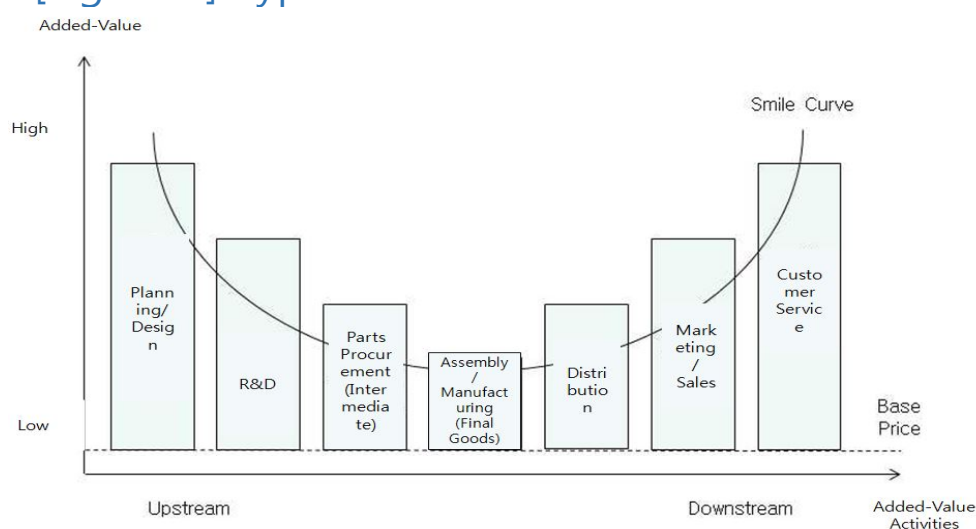
1. ICT/Electronics Sector

(a) Structure of GVCs in the sector

1) Structure of value chains and influence of changes in the industry

In the ICT/electronics sector, the trend of GVCs has become ubiquitous. Production can happen anywhere if technologies, raw materials and intermediates with required quality are available at a

[Figure 1] Typical structure of value chain in ICT

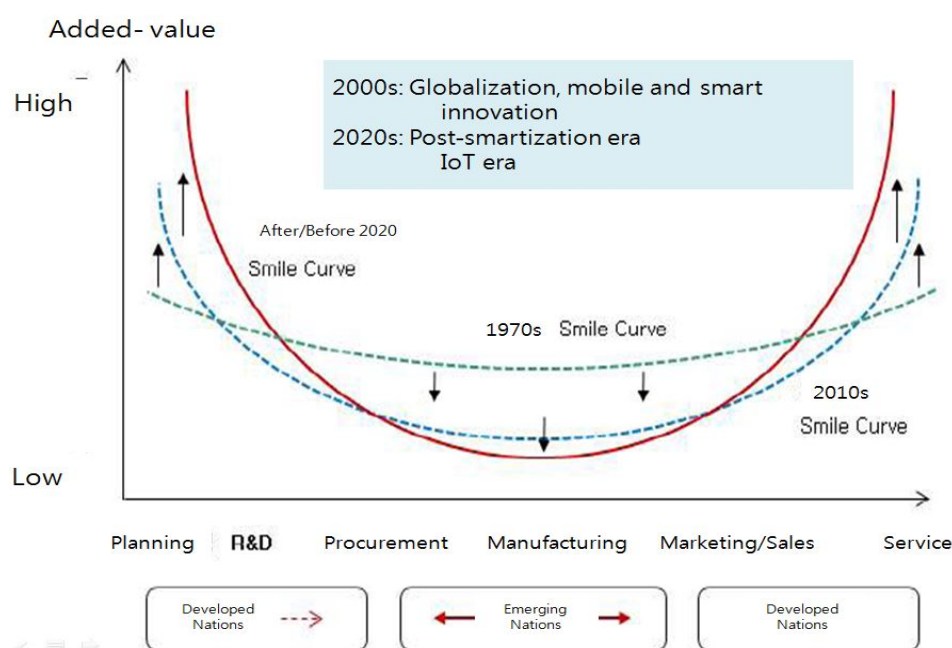


competitive price through GVCs.

Source: Ministry of Trade, Industry and Energy of Korea (2015), *Research on Promoting SMEs' Participation in Global Value Chains – ICT/Electronics Industry, Report on the Promoting SMEs' Integration into Global Value Chain in Major Industry, Project Phase I*

Figure 1 shows the structure of a typical value chain of the ICT sector expressed by a so-called “smile curve”. Activities like planning/design, R&D, marketing, and customer service yield higher value while assembly/manufacturing accounts for low value-added.

[Figure 2] Change of GVC structure in ICT industry



Source: Ministry of Trade, Industry and Energy of Korea (2015), *Research on Promoting SMEs' Participation in Global Value Chains – ICT/Electronics Industry, Report on the Promoting SMEs' Integration into Global Value Chains in Major Industry, Project Phase I*

Figure 2 shows the change in the structure of ICT GVCs. Planning, R&D, sales and services, which are carried out by developed economies, account for a larger portion of value-added due to technology innovation.

The global ICT/electronics industry is constantly changing, and the pace of changes is getting faster. The electronics industry, including ICT, is one of the major manufacturing sectors in which constant paradigm shifts in terms of markets and strategies are occurring both at the corporate level as well as in the entire industrial ecosystem. Inter-industrial convergence based on ICT is leading to new waves in ICT/electronics industry and intensifying global competition. Moreover, radical changes in the competitive composition and ecosystem are causing the structural aspect of GVCs to undergo reform and innovation.

As a result, players in the ICT/electronics industry, including global leading companies and SMEs, are facing these challenges directly. Companies are experiencing that strategies of the past are no longer working in the changing market. For example, assigning simple assembly functions to foreign affiliates in the developing world is no longer cost-saving as labor costs rise, while producers from the developing world want to participate in higher-value generating process such as R&D or production of technology.

Reflecting the above trends in the sector, GVCs are a key factor dominating the formation of strategy for businesses and governments as well as industrial convergence and global economic integration. The ICT/electronics industry requires intensive use of technologies and skilled labor from development to production of final goods. In particular, production of intermediate goods needs

technologies and skills more intensively. However, it is difficult for SMEs to acquire technologies and skilled labor, especially if they are from the developing world. However, participation in GVCs enables SMEs to access those factors and enhance the value-added of their respective process.

2) SMEs' Participation in GVCs

The concept of GVCs suggests that most SMEs and major companies can develop cooperative relationships. Active participation in GVCs allows companies to access new technologies and business opportunities through global networks. As inter-enterprise competition becomes fierce in the global market, well-positioned second movers in developing economies can participate in GVCs and interact with major players in GVCs of high-tech industrial sectors. From the perspective of governments, expansion of GVCs can provide impetus for economic growth and job creation.

(b) Main obstacles for SMEs' participation in GVC

The obstacles for SMEs to participate in GVCs in the ICT/electronics sector can be summarized as follows.

1) Lack of information on GVCs

SMEs lack understanding of what benefits GVCs can bring them. Even though they understand that GVCs can contribute to increasing value-added, many SMEs lack information about the GVCs they want to participate in. Thus, they are unaware of what GVCs they can take advantage of and how. This lack of information discourages SMEs from considering participation in GVCs.

Therefore, active exchange of information should be facilitated to find appropriate GVCs that SMEs can participate in. Information can be exchanged through various channels, such as government, chambers of commerce, business associations, investment agencies, etc. Also, education and in-depth market information need to be provided by governments.

2) Lack of SMEs' own capabilities

The second obstacle is lack of capabilities. The ICT/electronics sector emphasizes the importance of technologies and available skilled workforce more than other sectors. Usually, it is not affordable for SMEs to develop their own technologies through R&D activities or to hire skilled workers because of financial constraints. Therefore, it is not easy for SMEs can qualify for the conditions of GVC participation, and this lack of technological capability crowds out SMEs from GVCs.

In addition, intellectual property claims by MNCs are also one of the biggest obstacles for SMEs to acquire technologies and skills. Since high-level technologies are protected by intellectual property rights, SMEs cannot easily access the technologies that are needed to participate in GVCs. As such, policy means to transfer and share technologies with SMEs should be figured out.

3) Protectionism

Protectionism, whether it is implemented by tariffs or non-tariff measures, raises the production costs of SMEs by restricting transactions across borders and adding costs to imported core parts needed to produce final products. As intermediates are increasingly cross-border and the production phase has expanded, the costs of protectionism are also increasing.

Tariff barriers will directly raise the cost of production using GVCs by adding tariffs when resources and intermediate goods are transported across borders. Hence, SMEs will suffer from restrictions on exporting resources and increased procurement costs of intermediate goods. Non-tariff barriers such

as anti-dumping measures or local content restrictions also make SMEs' participation in GVCs difficult because SMEs are forced to supply goods for lower prices, and operating overseas affiliates is not affordable to them.

In this way, protectionism weakens SMEs' competitiveness in the market, and global free trade needs to be promoted in order to efficiently utilize GVCs.

4) GVC approach challenges for SMEs in the ICT/electronics industry

Table 1 shows recommendations for overcoming other challenges that SMEs face when they are willing to participate in GVCs in the ICT/electronics sector.

[Table 1] GVC approach challenges for SMEs

Area	Explanation
Improving Understanding of GVCs	Improving understanding of the need to approach GVCs so as to create significant added value by enhancing competitiveness through 'rationalization of resources', targeting a large number of SMEs which have focused on domestic market activities
International Co-marketing	Encouraging establishment of consortiums for joint marketing of SMEs in overseas markets or for joint bidding of SMEs for overseas government procurement
Development of Advanced Financial Techniques	Developing and improving financial techniques, 'factoring' to support smooth cash flow, and by doing so, ensuring that liquidity problems do not occur in payments of SMEs that provided products and services on time
Industry Cluster Development	Developing industry clusters that can take advantage of economies of scale and integration and be helpful for building networks with skilled labor and complementary cooperating companies
Intellectual Property Protection	Establishing standard authentication procedures that protect intellectual property rights to the extent that SMEs do not face an excessive burden and receive unfair treatment in GVCs
Legal Advice	Creating a legal and institutional environment that attracts foreign direct investment (FDI) to ensure that MNCs can transfer technology and knowledge to local suppliers and subcontractors
New Tech Development	Supporting SMEs' new technology development to expand the added-value within GVCs and to create partnerships with foreign organizations that have extensive experience in technology transfer, product, and process management
Development of International Production Network	Building industrial and service networks for developing countries to effectively link with international production networks by encouraging entrepreneurship through technology and business links and by improving companies' competitiveness

Source: Ministry of Trade, Industry and Energy of Korea (2015), *Research on Promoting SMEs' Participation in Global Value Chains – ICT/Electronics Industry, Report on Promoting SMEs' Integration into Global Value Chains in Major Industries, Project Phase I*

(c) Recommendations from the Sectorial report

Considering these obstacles, several policy implications are suggested to promote SMEs' GVC participation in the ICT/electronics sector.

1) Raising SMEs' awareness and providing necessary information for SMEs

The ICT/electronics part of the Phase I Report suggested that it is necessary for the governments to make SMEs aware of GVCs and provide in-depth information on accessible GVCs. Large firms and MNCs should strengthen international competitiveness with suppliers. To do so, providing transparent and quantifiable information about standards and certifications is important. In addition, large firms should review the position and value-added that can be generated in the value chain and improve value.

2) Facilitating technological capabilities of SMEs

For SMEs to upgrade the level of the enterprise by integration of GVCs, they need to understand the structure and benefits of GVCs and should obtain competencies that can comply with industry standards and quality control standards.

Also, SMEs should specialize in unique production activities within GVCs. For them to be involved in unique production activities, SMEs must have unique skills or technologies. Since SMEs lack internal innovation capability, it is not easy to develop their own skills or technologies. Therefore, technology transfer by participating in MNCs' supply chains can be a solution.

Suppliers should have the capability to meet cost performance ratios in value chain-centered industries led by consumers.

Large firms should attract local production and expand to local markets through integrating importers into GVCs in cases where it is not easy to pioneer new markets despite successful development of technologies. Finally, they should facilitate R&D activities of SMEs by subsidizing and technology transfer by matching SMEs with firms that have higher-level of technologies.

3) Trade liberalization and attracting FDI

To facilitate the participation of SMEs in GVCs, governments should implement strategic FDI policies, trade facilitation policies and actively introduce FTAs. These activities will enable SMEs to enhance their capabilities and reduce production costs.

By attracting favorable FDI, transfer of technologies and knowledge of MNCs to local suppliers and subcontractors can be promoted. To facilitate FDI attraction, governments should mitigate the hurdles and taxes on R&D investment of foreign-invested enterprises in SMEs that supply parts to foreign-invested enterprises.

Trade facilitation policies and introduction of FTAs can reduce transaction costs during the production process in GVCs, hence promoting SMEs' participation in GVCs. Thus, it is necessary for governments to aggressively participate in the international discussion on trade measures such as the International Supply Chain Agreement and take initiatives

2. Textile/Apparel Sector

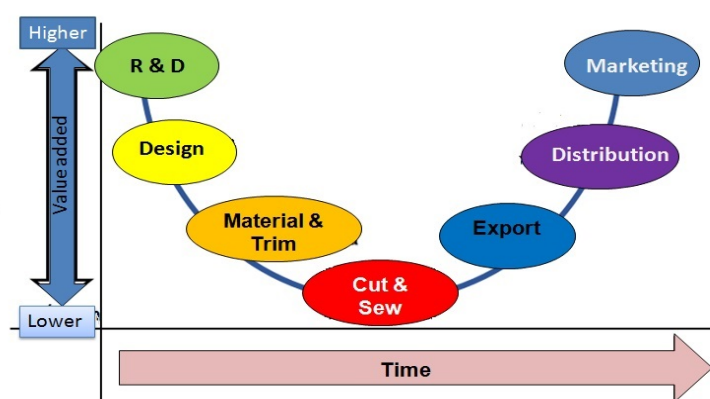
Here, we are going to discuss the characteristic of GVCs in the textile/apparel sector, the main obstacles that prevent SMEs from being integrated into GVCs, and policy suggestions by investigating the case of the Vietnamese textile/apparel industry.

Even though we are discussing the case of Vietnam in this section, the value chains of the industry in other developing countries are expected to be similar to the Vietnamese case.

(a) Structure of GVC in the sector

Figure 7 shows the basic structure of GVCs in the apparel industry. Developing economies mainly take trimming, cutting & sewing and exporting, which generate lower value-added.

[Figure 3] GVCs in apparel industry



Source: *SMEs' Integration in the Textile and Apparel Global Value Chains – Case Study: Vietnam*, presentation materials at the APEC Workshop on Promotion of SMEs' Integration into Global Value Chains in Major Industries held in Lima, Peru, on 20 August 2016

The distinctive characteristics of textile/apparel GVCs are high usage of labor and small value-added at each production stage. More than 90% of firms in the industry are SMEs and microenterprises.

R&D, design, branding, distribution and marketing are fulfilled by developed economies. Therefore, even in the textile and apparel sector, most of the created value-added goes to developed economies.

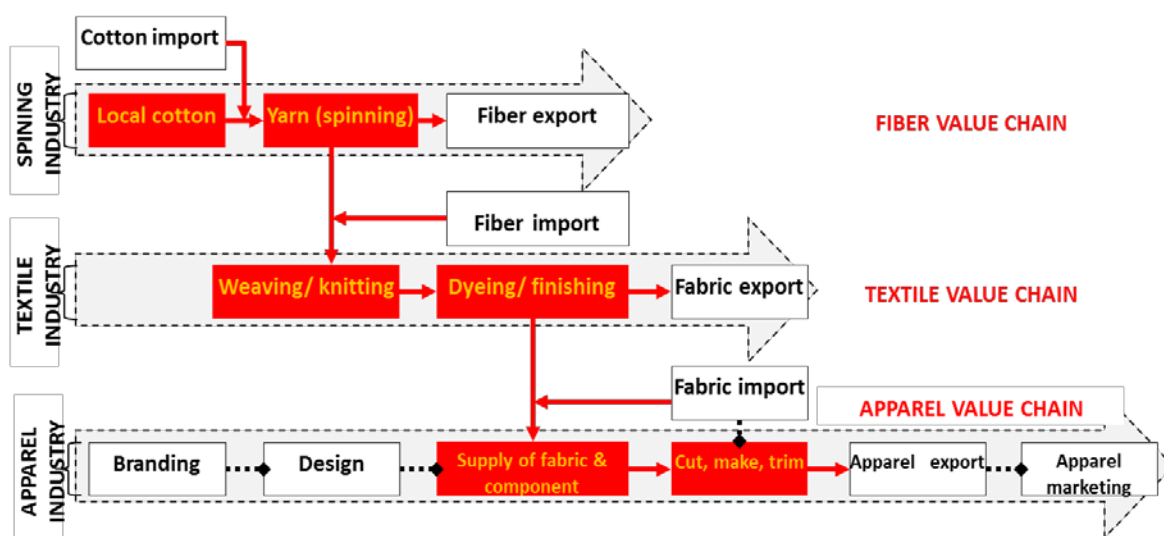
1) Disconnected value chains and participation in low value activities

In the textile/apparel sector in Vietnam, fiber, fabric and apparel manufacturing form their own value chains respectively, and each manufacturing sector composes the overall value chain at the same time. Products from the fabric and fiber industry is exported rather than fed into domestic textile and apparel production. In other words, value chains for fiber, textiles and apparels have separately emerged instead of being linked together to make up a comprehensive high value-added apparel value chain. [Figure 3]

Vietnam takes the parts of cotton production and spinning in the fiber sector, weaving/knitting and dyeing/finishing in the textile sector, and fabric and component supplying and cutting, making and trimming activities in the apparel sector respectively. Vietnam's SMEs in the textile/apparel sector are hardly able to participate in the export and marketing networks, no matter which manufacturing sector the SMEs belong to.

SMEs account for the absolute majority in the sector. However, the market share in the total export

[Figure 4] Structure of value chains in textile/apparel sector



sales of the country is dominated by large-sized firms

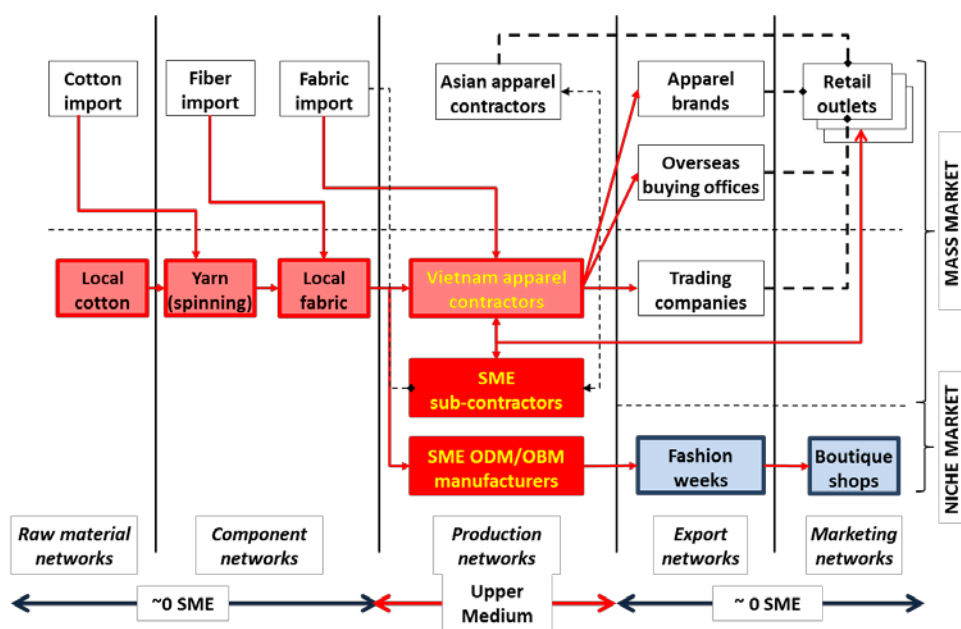
Source: *SMEs' Integration in the Textile and Apparel Global Value Chains – Case Study: Vietnam*, presentation materials at the APEC Workshop on Promotion of SMEs' Integration into Global Value Chains in Major Industries held in Lima, Peru, on 20 August 2016

2) Dependence on imported intermediate goods and materials

However, most of the SMEs in the the textile/apparel industry in Vietnam are cut, make and trim manufacturers and experience insufficient supply of intermediate goods and materials. The Vietnamese textile/apparel industry highly depends on imports from China, Korea and Taiwan to meet demand for fabrics that generate high value-added. Besides, the Vietnamese textile and apparel sector also has to import accessories from abroad, as the supporting industry of Vietnam is not developed enough to meet the demands from higher-tier firms

The contribution of SMEs' production toward the upstream sector of the supply chain is very small in Vietnam. That means the textile/apparel firms of Vietnam work in the production network in the mid-stream of GVCs and take the role of domestic sub-contractors for larger domestic/foreign firms, which generate the least value. When they have contracts with brand companies, overseas buying offices in the export networks or retail outlets in the marketing networks, they become key contractors. However, this is a very rare case for SMEs

Though substantial numbers of SMEs still work in the mid-stream part of the GVC, some of them have started to upgrade to the function of input supply.



[Figure 5] Location of SMEs in the apparel GVC

Source: *SMEs' Integration in the Textile and Apparel Global Value Chains – Case Study: Vietnam*, presentation material at the APEC Workshop on Promotion of SMEs' Integration into Global Value Chains in Major Industries held in Lima, Peru, on 20 August 2016

(b) Main obstacles for SMEs' participation in GVCs

The obstacles for SMEs' participation in GVCs in the textile/apparel sector can be summarized as SMEs' low technology and manufacturing capacities, dependence on imported materials and lack of information. Here, the barriers faced by textile/apparel SMEs of Indonesia, China, and Mexico as well as Vietnam are introduced.

1) Dependence on imported materials

There is an upward trend of both imported fabric and accessories corresponding to the rapid increase of textile and apparel exports during the decade from 2005 to 2014. This implies that imports are indispensable for exports and both are complements rather than substitutes.

Compared with foreign suppliers, SMEs in the Vietnamese textile/apparel sector have relatively low technology and manufacturing capacity. This makes the local market insensitive to SMEs' home-produced products as the market is largely taken by imported materials. This makes them depend on imported materials.

SMEs' dependence on imported materials in Vietnam's textile/apparel industry leaves the SMEs at a low level of cooperation and responsibility, hence restricting the possibility for them to engage in high-value activities such as production of raw materials.

2) Labor skill shortage

Apparel manufacturers in Vietnam are facing strong competition from China and India for attracting FDI. Compared with China and India, SMEs in Vietnam are short of skills in technology development and customer services, while having an advantage in management, engineers, skilled manual trades and laborers.

Combined with surging wages and sub-optimal human capital, a shortage of workforce and skills in labor makes it hard for SMEs to comply with rising labor standards and labor conditions required to participate in GVCs in the industries as well as making the price of commodities more expensive, hence weakening competitiveness.

Lack of innovation and innovation cooperation prevents SMEs from developing into quality suppliers.

3) Lack of horizontal and vertical linkages in value chains

SMEs in Vietnam lack both horizontal and vertical linkages in value chains. Horizontal linkage means cooperation between firms in the same step of the production process. Vertical linkage means cooperation between firms in the different steps of the production process in the value chain.

Lack of horizontal linkages among SMEs causes asymmetry between SME suppliers and purchasers. Because of the mismatch caused by this asymmetry, SMEs cannot get outsourcing opportunities or hire idle equipment hours from other SMEs and larger companies.

Cooperation with medium and large exporters and big business linkages with SMEs in the textile and apparel sector are still weak. Lack of vertical linkages in the value chain is connected to the problem of lack of information, lack of contact and small order size that is insufficient to achieve economies of scale. Due to the lack of vertical linkages, SMEs cannot purchase from local dyeing, weaving, knitting and accessory companies, hence make them dependent on imported materials

4) Insufficient policy support and poor business environment

Lack of policy support and the consequent poor business environment also hinder SMEs from finding appropriate GVCs they can afford to participate in. For example, unreasonable cotton policies and higher tariffs in the USA, the EU and Japan make SMEs unable to access export markets. Informality, unfair competition and frequent interruptions in the supply and distribution of goods cause inefficiencies in the production process. Rising comprehensive costs consisting of energy prices, financing costs, and costs from environmental protection policies also have a negative influence on the price competitiveness of SMEs. Most of all, lack of SME-specific policies causes SMEs to have difficulties in enhancing capabilities to fulfill the requirements for GVCs

(c) Recommendations from sectorial report

To solve these problems, the following policy recommendations are offered for SMEs and the private sector, governments and APEC, respectively.

1) Information sharing

To the private sector, the report suggests information sharing and facilitation of linkages between SMEs and large firms. To enhance information sharing, SMEs should make efforts to explore key markets, supply chains and marketing channels to identify appropriate segments and build penetration strategies. It is also important for them to build linkages with large enterprises and find out their needs and gaps to develop appropriate products and services. To do so, they should improve communication and working skills to work with global markets

Support from domestic/international business associations is also necessary to share information and facilitate exchange and linkages between SMEs and members with activities that individual SMEs cannot easily carry out. Example of the activities that business administrations can do for SMEs are the following:

- Updating, training and disseminating information on upcoming FTAs to members and SMEs, mapping
- Verifying domestic and international sources of materials and inputs,
- Coordinating input sourcing and trade promotion among members and SMEs
- Coordinating investment and linkages between textile production and supporting industries.

The recommendations to the government sector include building information provision systems for SMEs and facilitating the connection between SMEs and FDI. Support to develop sourcing databases and mapping can be one example.

APEC should support business linkages among suppliers, manufacturers, importers, retailers and brands. In addition, they should support data collection and sharing companies involved in different steps of GVCs for SMEs. For governments, APEC should coordinate data collection and sharing of information about companies involved in different steps of GVCs, for example, by building a regional directory.

2) Attracting investments

The report also advises that the government should attract investments with high value-added activities. To attract investments, governments should build a master plan for textile investment, promote upstream investments, make efforts to create SME-FDI linkage and implement policies to expand domestic markets.

3) Trade liberalization and raising SMEs' awareness of its necessity

Promoting trade liberalization is also suggested as a necessary policy to promote SMEs' participation in GVCs. To promote trade liberalization, governments should engage the private sector in FTA negotiations, provide frequent education to domestic businesses on upcoming FTAs, and consistently review trade policies and barriers to trade. Not only governments but also SMEs themselves should make efforts to learn about upcoming FTAs and adapt their businesses.

4) Capability building of SMEs

To build and enhance SMEs' capabilities, governments must support training skilled workers who can perform high value-added activities. To achieve these goals, they should promote labor and human resource development, link wage systems to productivity, ensure more employer-worker negotiations in labor laws, implement workforce training and labor supply policies and establish career guidance to remove bad attitudes of workers. It is also necessary for governments to build a model to support

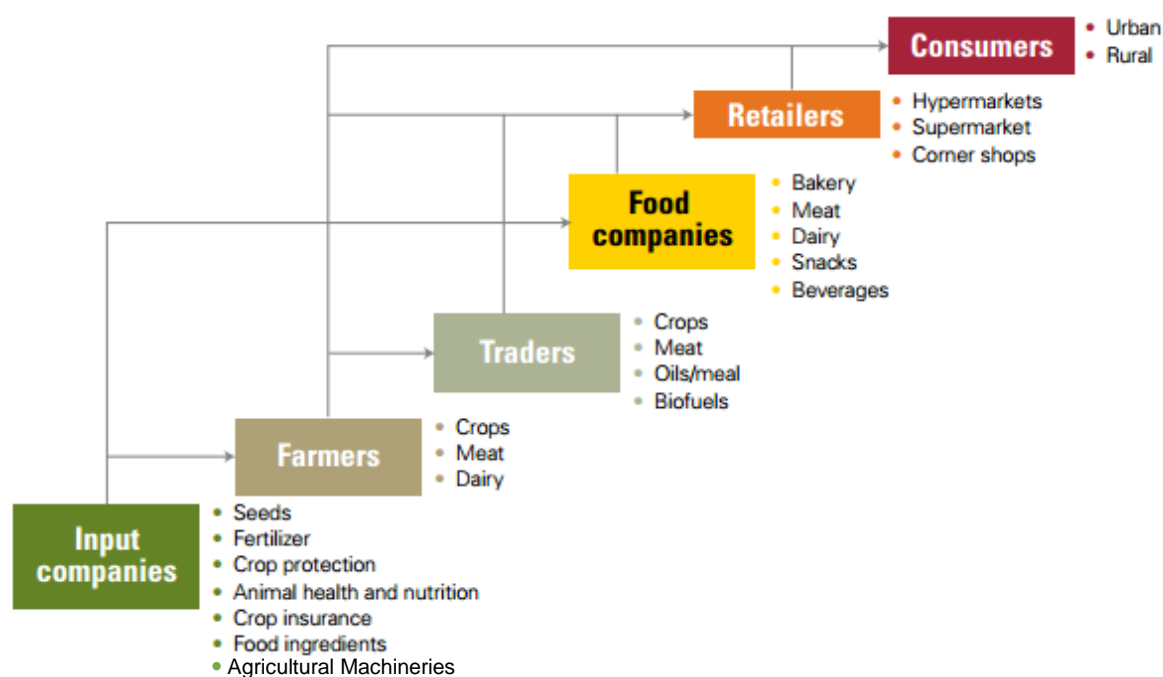
design capacities of industries including domestic apparel and prepare pro-SME credit access procedures.

APEC should help SMEs build their capacities by providing SME training programs, study tours, forums and GVC manuals. It is also important to provide programs to grow resource trainers who can train labor forces in the respective member economies. For governments, APEC should provide opportunities to share experiences on how to address the issue of low value addition in GVCs and how to implement policies.

3. Agri-business Sector

(a) Structure of GVCs in the sector

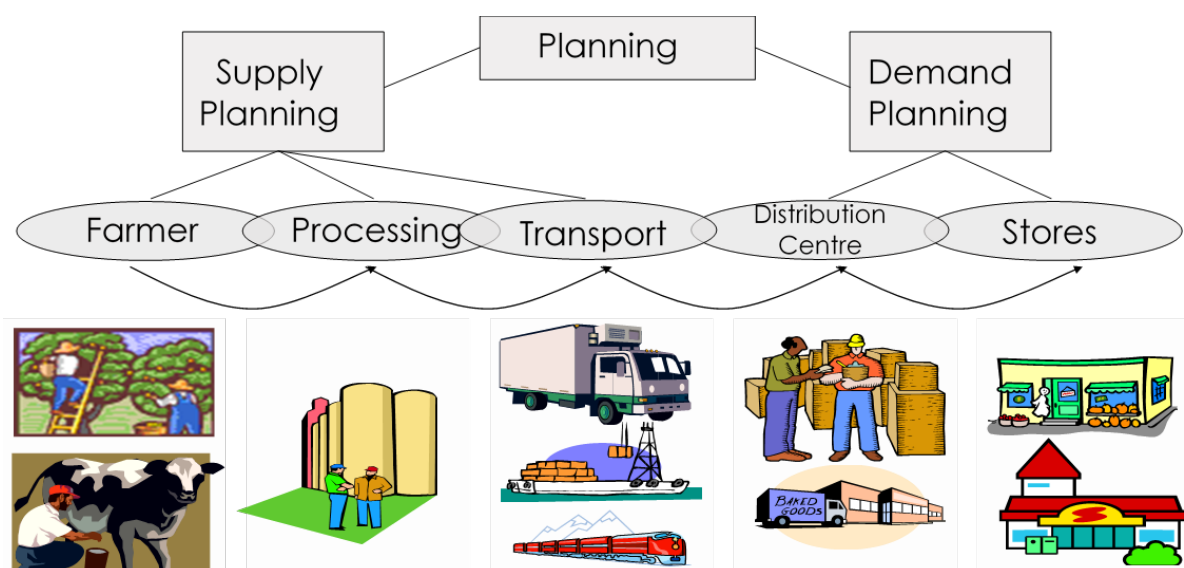
The value chain of agri-business consists of the network of stakeholders involved in growing, processing and selling the agricultural products to consumers.



[Figure6] Agri-business Value Chain

Source: Adapted from Sterling C. (2013), "The Agricultural and food value chain: Entering a new era of cooperation", cited in the presentation materials of the "APEC Workshop on Promotion of SMEs' Integration into GVCs" held in Lima, Peru, on 20 August 2016.

The value chain in agri-business consists of supply planning and demand planning. Supply planning comprises the chain of farmers, processing and transportation and demand planning comprises the chain of distribution and sales. The supply chain and the demand chain are linked to make the overall value chain made of producers, processing, transportation, distribution and sales.

[Figure7] Current Status of GVCs in Agri-business

Source: Presentation materials for agri-business sector of the “APEC Workshop on Promotion of SMEs’ Integration into GVCs” held in Lima, Peru, on 20 August 2016

The growth drivers of agri-business can be categorized into economic drivers, social drivers, technological drivers and policy drivers. Economic drivers are the growing global population and economic growth. Social drivers are rapid urbanization and the rise of middle classes. Technological drivers include better logistics and connectivity and agriculture-related technological advancement. Policy drivers are promotion of biofuels, tax incentives and trade/investment liberalization.

The contemporary characteristics of GVCs in agri-business are such that farmers must supply what the consumers want rather than what the farmers want to grow.

(b) Main obstacles for SMEs’ participation in GVC

1) SMEs’ insufficient awareness of GVCs and their possible roles within GVCs

Awareness and understanding of the structure and dynamics of GVCs by SMEs are generally insufficient. The majority of SMEs across different countries are not able to identify competitive strengths within the value chain. This prevents SMEs from finding an appropriate position in GVCs, hence resulting in a loss of opportunities to generate more value from their production.

2) Lack of capabilities that enable participation in GVCs

Key challenges of agri-business in the global market include product reputations and lack of financial resources and market access. SMEs are mainly concerned with inadequate availability of managerial and financial resources and skills as well as inability to upgrade and generate innovation.

Compliance with strict product quality standards is required to participate in GVCs. This is the case in particular where the selected agricultural products lack mutually agreed product and quality standards. Also, SMEs need to establish more confidence among consumers in terms of quality of products,

demand of buyers and conformity with international standards. Moreover, internal and external factors such as tariff barriers, technical barriers, and lack of funding for R&D prevent agribusiness SMEs from entering GVCs.

(c) Recommendations from the Sectorial report

The agri-business Sectorial report notes that keys to success in agri-business GVCs are compatible partners, governance, focus on customers and consumers, creating share and effective logistics and distribution. To solve the above problems, the agri-business part suggests the following policy recommendations.

1) Improving SMEs' awareness of GVCs and promoting networks of products

Governments should raise awareness of SMEs with potential to participate in GVCs. In addition, it is important to promote networks of selected products relying on product flow within the APEC region to help SMEs link effectively with international production, distribution and consumption networks. Also, it is necessary to assist SMEs by helping them utilize e-commerce for their business.

2) Joint participation of SMEs in high value-added activities

The Sectorial report suggested that governments should encourage SMEs' participation through initiatives such as marketing, purchasing of materials, designing and campaigning as a group. By doing so, SMEs can create higher value than could be achieved by an individual enterprise.

3) Promoting the establishment of business partnerships between SMEs and MNCs

Governments should also promote the establishment of business partnerships between SMEs and multi-national and large enterprises. Through business partnerships with SMEs, MNCs can increase market access and opportunities, and SMEs can be provided supplier financing.

Also, governments should attract foreign direct investment (FDI) to accelerate the integration of SMEs into GVCs. Attracting FDI from MNCs benefits not only SMEs but also MNCs. SMEs can benefit from technology transfer or spillover, while MNCs can get market access and more efficient suppliers.

4) Enhancing capabilities and promoting technological upgrading

Governments should not only promote technological upgrading of SMEs but also facilitate compliance procedures and requirements, such as food safety, food hygiene, and agri-business standards. As stated above, attracting investments from technologically advanced MNCs can help SMEs upgrade their level of technology. In addition, ways should be found to offer financial support to SMEs to carry out R&D activities and innovation.

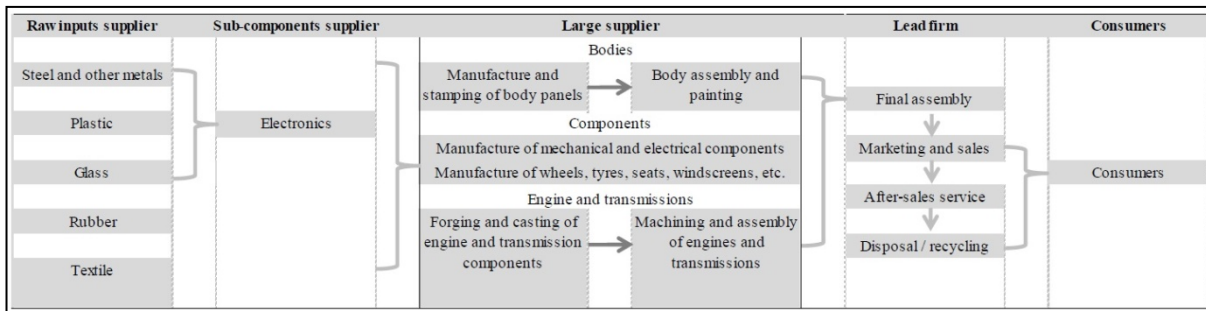
Besides the suggested policy measures, the agri-business Sectorial report notes that, to increase value in GVCs, production processes, products, business functions and chain functions should be upgraded. To achieve the goal, the following should be accomplished: upgrading logistics, seeking reliable partnerships, innovation, policy supports and trade/investment liberalization.

4. Automotive Sector

(a) Structure of GVCs in the sector

The GVC structure for the automotive sector can be expressed as the following Figure 7. There are multinational firms that produce vehicles with multiple tiers of suppliers and sub-suppliers. Each lead firm or OEM structures the value chain differently based on its market strategy.

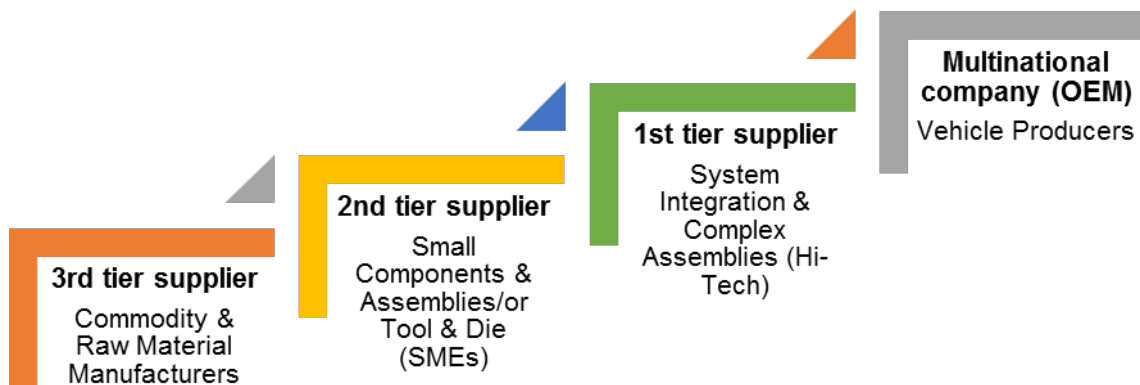
[Figure8] Structure of GVCs in automotive sector



Source: Dicken, Peter (2003), "Global Shift: Reshaping the Global Economic Map in the 21st Century," 4th Edition, Sage Publications Inc., cited by Malaysia Automotive Institute (2015), APEC GVC/SME in Automotive Sector (GSAS): GSAS Study – The Effects of Tariff and Non-Tariff Barriers to Trade to the Automotive SMEs and the Recommendations to Overcome those Tariff and Non-Tariff Barrier's Effects

SMEs in the automotive sector are participating in GVCs in the form of supplying parts to the

[Figure9] GVC hierarchy in the automotive sector



vehicles targeting the regional market.

Source: Malaysia Automotive Institute (2015), *APEC GVC/SME in Automotive Sector (GSAS): GSAS Study – The Effects of Tariff and Non-Tariff Barriers to Trade to the Automotive SMEs and the Recommendations to Overcome those Tariff and Non-Tariff Barrier's Effects*

(b) Main obstacles for SMEs' participation in GVC

SMEs' poor participation in GVCs is due to restricted production capabilities, low level of technologies and skills and insufficient R&D, marketing and sales activities. Through a survey of SMEs, the Phase I report of the automotive sector identified the following as the main impediments that restrict developing SMEs from participating in GVCs. The impediments are categorized into three groups.

1) Lack of adequate standards for quality and business capabilities

- **Limited skills capabilities and competencies of SMEs**

Limited skills capabilities and competencies of SMEs make them unable to quality standards. This results in SMEs being excluded from GVC participation

- **Lack of international quality standards**

Lack of international quality standards prevents the majority of SMEs from becoming competitive automotive GVC industry players. Without international standards, products from tier 2 or tier 3 SME suppliers have difficulties in meeting quality requirements from large suppliers or lead firms. This results in preventing SMEs from participating in GVCs created by lead firms.

2) High competitiveness of automotive GVCs

- **SMEs' business administration and compliance costs**

Business administration and compliance costs bring about not only visible costs but also indirect costs in the form of inefficiency in management of SMEs. These extra costs can be burdens on SMEs, hence making them unable to compete in supply chains. Since the automotive industry is very sensitive to changes in cost conditions, this can have a serious influence on the lead firms when making decisions on which SMEs they will allow to join the value chains they created.

- **Uncompetitive business finance**

Financial crunch prevents firms from expanding production capacity, preventing them from enhancing efficiency and achieving economies of scale. Moreover, insufficient financial support prevents firms from investing in R&D activities and human resources, hence SMEs have difficulty in improving their own capabilities and competitiveness.

- **Paucity of infrastructure for investment**

Paucity of infrastructure discourages potential investors from investing in developing countries. This results in taking away from SMEs in developing countries opportunities to participate in GVCs led by MNCs and have the benefits of access to advanced technologies

- **Lack of transparency of business environment**

Lack of transparency of the business environment causes increases production costs of firms. In addition to insufficient technology and skill endowment and low quality of products, rising costs due to lack of transparency weaken competitiveness of SMEs from developing economies.

- **Non-tariff barriers**

SMEs are unable to overcome the effects of non-tariff barriers due to lack of information and knowledge. Such lack of knowledge prevents participation of SMEs in GVCs in the automobile sector. According to the results of the GVC-SME Automotive Sector (GSAS) Initiative workshop, surveys illustrated that more than 50% of automotive SMEs faced various trade and non-trade barriers such as standards, regulations and product labeling that made it difficult for them to participate in GVCs.

3) Inadequate SME collaboration and lack of awareness of GVC opportunities

- **Small scale and limited resources of SMEs**

Small scale and limited resources restrict the capacity of SMEs to supply higher tier suppliers or lead firms/OEMs.

- **Poor local industry engagement with large automotive manufacturers**

Poor local industry engagement with large automotive manufacturers is caused by a combination of various factors. Examples of such factors are lack of local industry's capability, including low level of technology, restricted capacity and small scale of production. Paucity of infrastructure, lack of transparency and poor business environment also discourage leading multinationals from investing and prevent local industry from engaging with those large firms and accessing advanced technologies.

- **Lack of understanding of opportunities available through free trade agreements**

The majority of SMEs lack awareness or knowledge of GVCs and how to leverage them. Both reduce the possibilities for SMEs to increase value-added by taking advantage of GVCs

(c) Recommendations from the Sectorial report

In the reports submitted by Malaysia and the Philippines, several solutions to each impediment were suggested.

1) Solving lack of adequate standards for quality and business capabilities

- **Solving limited skills capabilities and competencies of SMEs**

To strengthen the capabilities and competencies of SMEs, opportunities for automotive industry-specific education, skills and training should be provided. To do so, governments should collaborate with the industry to identify specific skills and education required for each product category, establish detailed capability standards for skills and review participating SMEs to identify where skill gaps exist. It is also necessary to form either public or private accredited bodies to certify workers and companies with standardized accreditation to establish adequate standards for quality.

OEMs and international tier-1 firms should provide easily accessed skill and business process training material for potential SME suppliers. SMEs should develop written and spoken English language capability within their organization, and education programs should be established to raise SMEs' capabilities in administration disciplines.

It is recommended that workshops should be organized to discuss the best practices to integrate SMEs into GVCs, and programs to facilitate GVC integration should be established to identify the principal brand of a GVC that qualifies participation of SMEs for the specific GVC.

- **Lack of international quality standards**

Quality standards that are mandatory at each supply level within the automotive supply chain should be clarified. SMEs should improve the visibility of sub-suppliers' production performance and product quality and reduce the cost of maintaining formal accreditation compliance. They should also be encouraged to measure quality levels at multiple stages throughout their process. OEMs should harmonize quality standards and measurement metrics and to define minimum requirements for quality levels for OEM supply in the global terms of parts per million (PPM), not percentage rejects. Government policy should encourage SME training to gain the highest possible practical level

2) Helping SMEs survive in highly competitive automotive GVCs

- **SMEs business administration and compliance costs**

Policies should have medium- to long-term coverage to ensure certainty for SMEs. Adoption of global industry standards should be promoted to minimize the time and resources necessary for compliance and to enhance SMEs' ability to export. Governments should review business compliance regulations to avoid unnecessarily complex documentation requirements that could disadvantage SME with limited resources, as well as create initiatives to improve logistics efficiency and costs in the auto sector. In addition, they should provide business support to ensure appropriate on-going regulation compliance and taxation documentation of SMEs.

Issuance of e-certificates of origin should be promoted, and the wording used to describe the tariff changes required by specific rules of origin should be simplified.

- **Uncompetitive business finance**

Clustering and whole-of-industry approaches to banks by SMEs should be promoted, and the practice of utilizing the SME customers' financial standing should be encouraged to obtain improved financial terms. Governments should encourage financial institutions to provide the same level of service for SMEs as provided to larger businesses. 'De-risking' initiatives should be introduced through government underwriting to reduce the risk profile and hence the financing cost for automotive SMEs. Financial institutions should introduce more innovative products, e.g., bank payments obligations, supply chain financing and associated processes. In addition, banks should promote the recognition of an individual SME's investment collateral, such as movable assets, and the value of an SME's on-line payment history track record.

- **Paucity of infrastructure for investment**

Governments should ensure that specific policies targeting infrastructure for investment are integrated within the broader policy environment for SMEs covering issues including taxation, labor issues, education policies, etc. In addition, government should identify and promote best practice investment

approval and encourage financial institutions to develop a one-stop contact point for loan application approvals for investors. It is also necessary to reduce time required to process SMEs' investment applications by engaging independent industry experts to identify genuine investment proposals from lower grade applications.

- **Lack of transparency of business environment**

Governments should provide a one-stop window that can advise on and process all permits, licensing, legal and regulatory requirements and improve security of intellectual property rights.

- **Non-tariff barriers**

Governments should review all supply chain steps in the post-production phase to identify and remove unnecessary legislative impediments and non-value-added activities. Examples of possible policies are promoting a level playing field in procurement within all APEC economies and encouraging the avoidance of local content rules and requirements within APEC.

3) Correct inadequate SME collaboration and raise awareness of GVC opportunities

- **Small scale and limited resources of SMEs**

Automotive industry associations to represent auto parts producers should be established in developing economies and networks of auto parts industry associations should be created in the APEC region. In addition, alignment of auto parts manufacturers clusters should be encouraged to maximize product segment-specific opportunities and information. On the other hand, the APEC Automotive Dialogue should focus on key issues that impact auto component manufacturers, especially in APEC developing economies.

- **Poor local industry engagement with large automotive manufacturers**

Government trade promotion agencies should be strengthened to facilitate SMEs' representation and engagement with international OEMs, and government-led trade delegations of SME auto suppliers should be facilitated. Exchange of relevant auto industry information that can benefit local SMEs should also be promoted. Efforts should be made to build the capability of SMEs to advance from a basic 'make to print' capability to the development of individual products and intellectual property

- **Lack of understanding of opportunities available through free trade agreements**

Governments and industry associations should assist in the identification and promotion of business opportunities in FTA partner economies.

Table 2 summarizes the recommended actions for impediments that prevent from SMEs from participating in GVCs identified in the Sectorial report for the automotive sector

[Table 2] Actions for consideration recommended for each impediment identified in the automotive industry

Impediment	Action for Consideration
1. Limited skills capabilities and competencies of SMEs	<ul style="list-style-type: none"> • Government-industry collaboration to identify specific skills and education requirements for each product category • Establish detailed capability standards for skills • Review participating SMEs to identify where skill gaps exist • Accredited bodies to certify workers and companies with standardized accreditation • Encourage OEMs and international tier 1s to provide easily accessed skill and business process training material for potential SME suppliers • Encourage SMEs to develop written and spoken English language capability within their organization
2. Lack of international quality standards	<ul style="list-style-type: none"> • Clarification of quality standards that are mandatory to each supply level within the automotive supply chain • Improved SMEs' visibility in terms of sub-suppliers' production performance and product quality • Reduce the cost to SMEs of maintaining formal accreditation compliance • Encourage harmonization of quality standards and measurement metrics across multiple OEMs • Encourage SME training to gain the highest possible practical level • Encourage SMEs to measure quality levels at multiple stages throughout their process • Define minimum requirements for quality levels for OEM supply in the global terms of parts per million (PPM), not percentage rejects
3. SME business administration and compliance costs	<ul style="list-style-type: none"> • Promote the adoption of global industry standards to minimize the time and resources necessary for compliance and to enhance SMEs' ability to export • Review business compliance regulations to avoid unnecessary complex documentation requirements which could disadvantage SMEs with limited resources • Create initiatives to improve logistics efficiency and costs in the auto sector, e.g. tolls • Promote issuance of e-Certificates of Origin • Simplify the wording used to describe the tariff changes required by specific rules of origin
4. Uncompetitive business finance	<ul style="list-style-type: none"> • Policies should have medium- to long-term coverage to ensure certainty for SMEs • Ensure the right data platforms are in place • Introduce 'de-risking' initiatives through government underwriting to reduce the risk profile and hence the financing cost for auto SMEs • Establish education programs to raise SMEs' capabilities in administration disciplines • Provide business support to ensure appropriate on-going regulation compliance and taxation documentation of SMEs • Promote clustering and whole-of-industry approaches to banks by SMEs • Encourage the practice of utilizing an SME customer's financial standing to obtain improved financial terms • Encourage banks to introduce more innovative products, e.g., bank payments obligations, supply chain financing and associated processes • Promote the recognition of an individual SME's investment collateral,

	such as movable assets, and value of an SME's on-line payment history track record
5. Paucity of infrastructure for investment	<ul style="list-style-type: none"> • Ensure specific policies targeting this area are integrated within the broader policy environment for SMEs covering issues including taxation, labour issues, education policies, etc. • Identify and promote best practice investment approval • Encourage financial institutions to develop a 'One Stop' contact point for loan application approvals • Reduce time required to process SME investment applications by engaging independent industry experts to identify genuine investment proposals from lower grade applications. • Encourage financial institutions to provide the same level of service for SMEs as provided to larger businesses
6. Lack of transparency of business environment	<ul style="list-style-type: none"> • Provide a 'One Stop' government window that can advise on and process all permits, licensing, legal and regulatory requirements • Improve security of intellectual property rights
7. Non-tariff barriers	<ul style="list-style-type: none"> • Review all supply chain steps in the post-production phase to identify and remove unnecessary legislative impediments and non-value-added activities • Promote a level playing field in procurement within all APEC economies • Encourage the avoidance of local content rules and requirements within APEC
8. Small scale and limited resources of SMEs	<ul style="list-style-type: none"> • Establish an automotive industry association to represent auto parts producers in each APEC developing economy • Create and link a network of auto parts industry associations in the APEC region • Encourage alignment of auto part manufacturer clusters to maximise product segment-specific opportunities and information • The APEC Automotive Dialogue should focus on key issues that impact auto component manufacturers, especially in APEC developing economies
9. Poor local industry engagement with large automotive manufacturers	<ul style="list-style-type: none"> • Strengthen government trade promotion agencies to facilitate SMEs' representation and engagement with international OEMs • Facilitate government-led trade delegations of SME auto suppliers • Promote exchange of relevant auto industry information that can benefit local SMEs • Build the capability of SMEs to progress from a basic 'Make to Print' capability to development of individual products and intellectual property
10. Lack of understanding of opportunities available through free trade agreements	<ul style="list-style-type: none"> • Governments and industry associations should assist in the identification and promotion of business opportunities in FTA partner economies

Source: Malaysia Automotive Institute (2015), APEC GVC/SME in Automotive Sector (GSAS): GSAS Study – The Effects of Tariff and Non-Tariff Barriers to Trade to the Automotive SMEs and the Recommendations to Overcome those Tariff and Non-Tariff Barrier's Effects

5. Healthcare Industry Sector

(a) Structure of GVCs in the sector

Healthcare products are highly differentiated, specialized and involve significant barriers to market entry in terms of intellectual and financial capital requirements. These characteristics significantly affect the possibility for SMEs to enter GVCs in the industry.

GVCs in the healthcare industry are deeply affected by more severe regulations and restrictions since the industry is related to public health issues. In other word, governments and trade authorities can more easily introduce protective measures, insisting that their policies are not to restrict trade but to protect public health. This implies that firms may face higher barriers when they enter global markets either by means of exports or in the form of participating in GVCs.

1) Pharmaceutical/biological sector

Figure 14 shows a simplified GVC structure of pharmaceutical/biological product manufacturing. As is seen in the figure, trade issues are involved at almost every procedure of production from

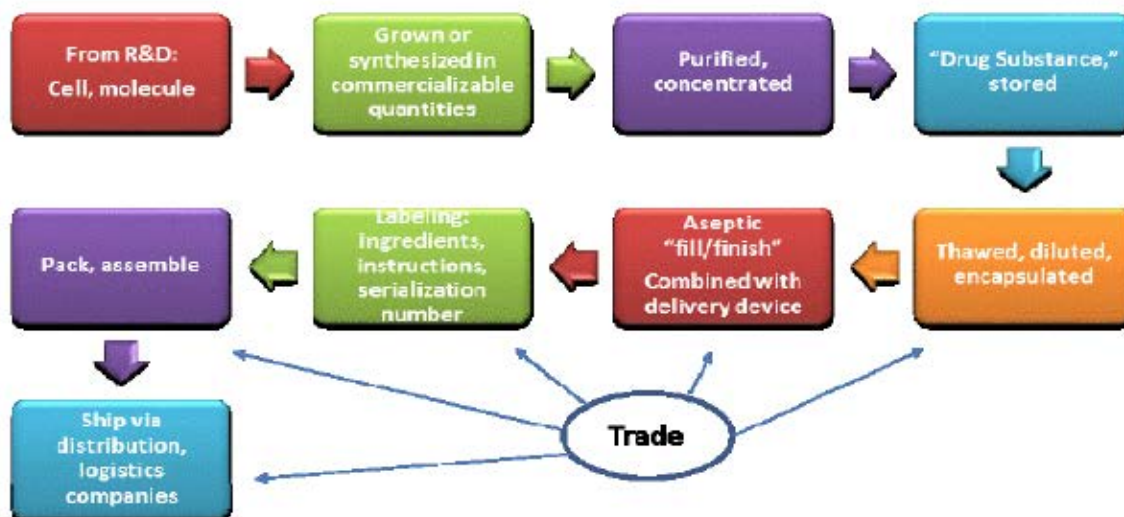
[Figure 10] Simplified value chain of pharmaceutical/biological products



R&D/innovations to distribution of the product to the consumers.

Source: Nathan Associated Inc. (2015), "Policies Affecting Trade in Health Care Products in APEC", a report from the Phase 1 of the APEC Project, 'Promoting SMEs' Integration into Global Value Chains in Major Industries', for review by the United States Agency for International Development.

As laid out in a simplified form for a drug in Figure 14, the healthcare products value chain is characterized by significant investments upstream in primary and applied research, which produces new cells or molecules. It is also a distinct characteristic of the healthcare industry value chain that a product needs approval from domestic regulatory authorities for sale in the domestic market. Manufactured healthcare processes and end-products are subject to internal quality assurance testing. Manufacturing and clinical trials sites are also subject to good practice inspections by external parties. Products are also likely to be inspected and tested by independent assessment bodies to assure conformity with public product regulations and private standards. After release to the market, surveillance is continued to monitor whether products perform as expected.

[Figure 11] Manufacturing steps in pharmaceutical/biologic value chain

Source: Nathan Associated Inc. (2015), "Policies Affecting Trade in Health Care Products in APEC", a report from the Phase 1 of the APEC Project, 'Promoting SMEs' Integration into Global Value Chains in Major Industries', for review by the United States Agency for International Development.

Figure 15 shows the manufacturing stage of pharmaceutical/biologic products. Raw materials must be grown or synthesized in large quantities for commercialization. Then the raw materials are refined and purified into a drug substance. The drug substance is to be processed to the appropriate strength, combined with other materials as needed or lyophilized (a kind of freeze-drying) for processing into pills or capsules. The drug substance then is introduced into a delivery device, at which point it is considered to be a combination drug product. This involves medical supplies from the chemical, textile, electrical, plastics, paper, and/or other manufacturing industries. Drug products are subsequently assembled, labeled and packed. Labeling of drug products is also regulated and required to show what is in a product, how it is used, and authentication information. Then the product is shipped via distribution/logistics channels to end users.

The consumers of drug products include government agencies, hospitals, pharmacies, retail sellers and individual consumers. The terminals of purchase are stores, markets or online. However, consumers in the APEC region are not exposed to the costs of drugs or devices, the prices of which are not market-determined but set or controlled by public authorities. In some cases, consumers rely on third-party healthcare service providers for their purchase of products.

Figure 15 also shows that trades across border are involved in the steps from processing drug substances to shipping and distribution.

[Figure 12] Simplified value chain of medical device manufacturing



2) Medical device manufacturing sector

Source: Nathan Associated Inc. (2015), "Policies Affecting Trade in Health Care Products in APEC", a report from the Phase 1 of the APEC Project, 'Promoting SMEs' Integration into Global Value Chains in Major Industries', for review by the United States Agency for International Development. The figure is adapted from Gereffi (2013)

Figure 16 shows the value chain of the medical device manufacturing sector. Unlike pharmaceutical/biological products, the consumers are typically not individuals but healthcare providers. The manufacture of medical devices requires the manufacture of a host of plastic, textile, metal, mechanical, and electrical/electronic components. Then the components are assembled into final devices, which are packed for delivery.

Like the case of pharmaceutical/biological products, steps in the value chain can be undertaken in one or multiple economies, crossing borders at various steps in the manufacturing and assembly processes. As depicted in the figures above, trade of healthcare products may take place at numerous points along the value chain. Ingredients, inputs, components, supplies, tools and the final drug and device products can be traded across borders. They may cross borders within the manufacturing process. Further, labeling, packing and assembly may happen in different places, and the products are distributed to wholesale and retail outlets in additional foreign markets. Before the products are used by end-consumers, the products may be required to be registered with the domestic regulatory authority.

Thus, consumer access to healthcare products is affected not only by the significant human and financial capital and exacting manufacturing and testing requirements of the industry, but also by the regulatory standards, tariff, and approval processes as well as structure and performance of domestic healthcare systems.

(b) Main Obstacles for SMEs' participation in GVCs

The main obstacles that can hinder SMEs from participating in GVCs are mainly related to institutional factors and protective schemes, such as trade policies and domestic safety regulations. Because of the characteristics of GVCs, which must be engaged in transaction of materials and intermediates across border, trade policies and heterogeneous regulations on healthcare products have a deep influence on production process.

1) Tariffs

Like the other industries discussed so far, tariffs are one of the main factors that affect GVCs in healthcare industries by way of increasing the production costs and weakening the price competitiveness of SMEs. Since healthcare industries tends to require accumulation of higher level technologies, the industry is more like to depend on imports which contains technologies the SMEs cannot acquire with their own development activities. thus, SMEs may give up participating in GVCs because of lack of sufficient capabilities or suffer from a rise of production costs even if they can barely afford the participation opportunities.

2) Non-tariff measures

• Regulatory hurdles

Regulatory hurdles are associated with market access, such as product approval or registration, ingredient disclosure requirements, marketing approval, import licensing, documentation requirements, inspection processes including local testing and clinical trial requirements, consumer protection, religious regulations (e.g. halal certifications), labeling/marketing/packaging requirements, and other variables. Clearing these hurdles can cause an increase in production costs that an individual SME can hardly afford. Otherwise, SMEs may experience difficulties in acquiring information on such hurdles due to their lack of capabilities.

• Lack of adherence to or divergence from recognized international standards

The WTO TBT Agreement states that WTO members shall use relevant international standards as a basis for technical regulations, unless such standards are ineffective or inappropriate to fulfill the members' legitimate policy objectives. This statement resulted in each WTO member adopting international standards as legitimate regulations and forcing exporters that wish to enter domestic market to comply with them. Examples of such standards are conformity assessment procedures, Good Manufacturing and Distribution Practices, ISO's Quality Management System for Medical Devices, electrical safety, etc.

These international standards are sometimes difficult for SMEs to comply with, whether because of SMEs' own lack of capabilities or because of differences between the international standards and domestic ones SMEs must comply with first. In particular, divergence from recognized international standards can force SMEs to bear higher costs because they are forced to disperse their capabilities to cover both standards.

• Localization requirements

In general, localization requirements arise as a result of policies intended to protect and stimulate domestic manufacturing industries. Examples of localization requirements in the healthcare industry include restrictions on foreign investment and equity participation that require companies either to manufacture locally or entrust a local or locally registered company to obtain approvals. Sometimes the transfer of technology or intellectual property is required to access the local market. Other

examples are restrictions on distribution and logistics for foreign investors, insurance reimbursement systems that allow only domestic firms to request annual adjustment of prices registered by related authorities, and price preference by government procurement to national companies.

Localization requirements in themselves block the formation of GVCs, where imports of core parts using a higher level of technologies protected by intellectual property rights are indispensable within the production process. Thus, SMEs may be deprived of opportunities to participate in GVCs at the fundamental level. These localization requirements may affect medical device industries to greater extent than pharmaceutical or biologic industries, because medical device industries are more likely to depend on a higher level of technologies.

- **De minimis**

De minimis refers to the threshold customs value of an individual shipment below which no tariffs are charged on imports. If this ceiling is too low, more goods are subject to import duties than would otherwise be the case. So its effect is similar to that of tariffs, which are related to the price increase of indispensable imports and final products to be exported. Price increases will harm SMEs more than large-sized firms and MNCs.

- **Regulation of trade in remanufactured medical devices**

According to the U.S. Department of Commerce, roughly 16 economies place restrictions on imports of remanufactured medical devices, while 5 economies impose outright bans. Since manufacturing of medical devices requires a higher level of technologies, these measures strip opportunities to take advantage of GVCs from SMEs in terms of absorbing technologies in the form of possible reverse engineering. The resulting failure in enhancing capabilities will result in the exclusion of SMEs from GVCs in these industries

(c) Recommendation from the Sectorial report

The Sectorial report recommends the following policy measures to remove the barriers to SMEs' participation in GVCs and encourage them to actively consider GVCs as the means to improve themselves.

1) Identification of obstacles to converge, reduce or eliminate tariffs on healthcare products

Each member of APEC should facilitate the transit of all goods across borders, including through trade facilitation agreements and trusted trade concepts across the region. Commitment to the adoption of recommendations will help reduce costs or margins and improve the efficiency of healthcare value chains.

2) Undertaking regulatory cooperation to promote healthcare products' supply chain connectivity.

To promote SMEs' participation in GVCs in the industry, addressing non-tariff measures is also necessary. The following are recommended policy measures that APEC and its members can take to achieve the goal.

- Each member should support harmonized guidelines for multi-regional clinical trials being developed by the International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use.

- The members should encourage the adoption of ISO certification for quality management practices and eliminate the need for separate certification.
- APEC should reaffirm its commitment to good regulatory practices in healthcare product markets to minimize time and cost requirements and increase transparency.
- The use of a common standard regarding product serialization in conformance with international proposals should be promoted.
- Member economies should embrace third-party logistics providers in healthcare product value chains to maximize supply chain connectivity.
- Preferences for domestic firms that discriminate against foreign healthcare product suppliers should be eliminated.
- APEC should explore the possibility of complying with the Medical Device Single Audit Program as an additional step toward regulatory convergence.

To carry out the above policy recommendations, further analysis is recommended to understand the impacts of these measures on the accessibility and affordability of innovative healthcare products.

C. Conclusions and Policy Recommendations

1. Conclusions

So far, we have reviewed why it is necessary to encourage SMEs to participate in GVCs and what benefits they can enjoy from participation. The shape of global trade is dramatically changing in recent years through the fragmentation of production processes across borders. This trend is associated with trade of materials and intermediates and hence the formation of GVCs. GVCs require the participation of firms that can make the production process most efficient. Thus, GVCs can give SMEs in developing economies opportunities to participate. By participating in GVCs, SMEs can access global markets either directly or indirectly. In general, SMEs have difficulties in accessing export markets directly due to size disadvantages and limited access to resources, such as physical or financial resources and technologies. However, if SMEs can participate in supply chains of global firms that investment in the local market, they can participate in GVCs led by those global firms and claim their share of the created value.

In the general discussion above, it was explained that SMEs can enjoy more benefits when they participate in GVCs than not. When SMEs participate in GVCs, their share in the total value creation may decrease while the share of imports increases. However, the absolute volume of value added by SMEs can increase because the entire value created throughout the GVCs will be much greater than the operation is limited within the domestic market. Therefore, it could be understood that exports and imports are complements under GVC system rather than substitutes, as is often perceived in traditional trade contexts. This is why GVCs should be facilitated by firms, governments and international organizations like APEC.

While the GVCs should engage with trade of goods produced across the borders, tariffs and non-tariff measures are among the major obstacles for SMEs from being integrated into GVCs. Therefore, it is important for governments to change their perspective on gains and losses of trade and liberalize trade and investment to facilitate GVCs.

Besides protective trade measures, there are other obstacles to SMEs' participating in GVCs in the APEC region. Those obstacles may originate from inherent characteristics of SMEs or external problems such as lack of information, channel to establish linkage with dominant MNCs or access to financial supports. Some of those obstacles apply commonly to SMEs regardless industry they engaged in, while others are sector-specific ones originating from the characteristics and structure of an industry.

(a) Common obstacles faced by SMEs across sectors

In the APEC Workshop conducted in August 2016, the speakers consistently pointed out the following factors as the obstacles to SMEs' integration into GVCs.

1) Lack of awareness and information on accessible GVCs

Lack of awareness of GVCs and information on accessible GVCs are among the main obstacles commonly pointed out. The concern can be viewed from two different perspectives. One is that SMEs does not fully understand why GVCs are necessary for their businesses and what benefits GVCs can bring them. The other is SMEs have insufficient information or knowledge on which GVCs would be the fittest one for their current business structure and how to find appropriate and available route to make connection and integrate into the GVC.

- **Lack of awareness of GVCs**

SMEs usually lack an understating of why GVCs are important and how GVCs can contribute to maximizing value from their production activities. In some cases, they are not even aware of the existence of GVCs in the industry. Without SMEs' full understanding of GVCs, policy measures to promote GVCs can only expect very limited effects. On the other hand, expanding the pool of possible SME participants of GVCs will lead to chances to better optimize the value chain and create market efficiency. In particular, SMEs in developing economies are reported to have relatively low awareness of GVCs.

- **Lack of information and knowledge for integration into GVCs**

Even if SMEs are fully aware of the existence of GVCs and their importance, lack of information or knowledge on which GVCs would be the fittest for their business model structure and how to make integrate into the GVC is another major problem. The sectorial reports suggested a certain level of technologies is required for SMEs to participate in the supply chain. The SMEs in such industrial sectors may be more likely to aware of the characteristics of GVCs since the leading firms in those industries have already established global production structures and are taking advantage of procurement across borders to enhance their competitiveness.

2) Lack of SMEs' capabilities

The insufficient capabilities of SMEs are one of the most fundamental problems. In the sectorial work streams, lack of capabilities was referred to as including low levels of technology, skill shortages, high compliance costs with international standards and difficulties in innovations. Low capability problems of SMEs are more conspicuous in developing economies with the financial burden of improving their capabilities, such as investment for R&D or skills training. Intellectual property issues also affect the capabilities of SMEs with difficulties in accessing technologies protected by intellectual property rights. For example, the ICT/electronics and automotive sectors, where a higher level of technologies is required, emphasized the importance of sharing and transferring technologies and support for development of skills and human resources.

3) Lack of external supports

The external supports that can help SMEs enhance their capabilities and easily become integrated into GVCs are various. They can include provision of sufficient physical infrastructure, improving financial access for SMEs, efficient trade and investment procedure, transparent and rule-based business environment. In some cases, local standards that do not comply with international standards in terms of product quality or business practices may also be obstacles.

The availability of financial resources was commonly pointed out as a problem across sectors. Compared with large firms or MNCs, SMEs usually have limited access to financial resources due to their sizes or lack of credit. Shortage of available financial resources causes SMEs to have difficulties in realizing economies of scale or secure technological capability. This put SMEs in a position unable to respond to orders from leading firms in the GVC, thus left out of GVCs.

4) Protective trade policy

Protective trade measures, represented by tariffs and non-tariff measures, may raise production costs and reduce value-added generated within value chains. As the tariffs are applied at each stage of the cross-border production chains, the cost of the entire production will rapidly increase. That increase will have negative effects in two ways. First, it will increase the import cost of key materials or intermediates. When domestic suppliers are not available, firms will have to depend on import for the procurement of key materials or intermediates at higher costs due to tariff barriers. Then, the increased production costs will be reflected on the final products, and thus the price of the final

products will also rise. That will weaken the competitiveness of final manufacturer in the global market. Non-tariff measures will also have similar influences on production costs and competitiveness. Examples of non-tariff measures include local content requirements, regulations on technical certification and registration, ingredient labeling requirements, import licensing, burdensome documentation requirements, etc.

(b) Sector-specific characteristics of obstacles

In the ICT/electronics sector, technology transfer and intellectual property issues were suggested as affecting SMEs' participation in GVCs. The ICT and electronics industry requires a high level of technologies and skilled workforce at each step of production chains, so that firms without such technologies are hard to participate. Since those technologies and skilled labor workers should be obtained by long-term and cumulative experience and R&D investment, it is not easy for SMEs to be equipped with core technologies.

Besides the obstacles commonly pointed out across sectors, it was noted that a particular characteristic in the textile/apparel sector to emphasize dependence on imported materials and intermediates as one of the main obstacle to SMEs. The sectorial reports in this work streams also shed light on the lack of systemic linkages in horizontal and vertical business structure.

In the report on the automotive sector, the lack of appropriate standards that comply with international standards and the effect of poor business environments on SMEs' capabilities are more emphasized than in other sectors. Like the ICT/electronics sector, which requires firms to reach a certain level of technologies and skills, issues related to SMEs' competence and technology levels are referred to as the main obstacles. Poor local industry engagement with large-sized manufacturers is one of the obstacles that are given more attention in the automotive sector than in other sectors.

In the healthcare industry, protective trade measures are more emphasized as the main obstacles to SMEs' participation in GVCs than in other sectors. In particular, non-tariff measures are the main issue when the obstacles to SMEs' participation in GVCs are discussed. Since the products are closely related to public health, there is more room for authorities to carefully consider the application of non-tariff measures and local regulations on transactions across borders.

Table 3 summarizes the main obstacles to SMEs' participation in GVCs in each sector and the policy recommendations from the respective Sectorial reports.

[Table 3] Obstacles to SMEs' participation in GVCs and policy recommendations

	Main obstacles in the sector	Policy Recommendations
ICT/Electronics	<ul style="list-style-type: none"> - Lack of Information on GVCs - Lack of SMEs' capabilities - Protective trade measures 	<ul style="list-style-type: none"> - Raising SMEs' awareness of and providing necessary information on GVCs - Facilitating technological capabilities of SMEs - Trade liberalization and attracting FDI
Textile/Apparel	<ul style="list-style-type: none"> - Dependence on imported materials - Labor skill shortage - Lack of horizontal and vertical linkages in value chain - Insufficient policy support and poor business environment 	<ul style="list-style-type: none"> - Information sharing - Attracting investments - Trade liberalization and raising SMEs' awareness of its necessity - Capacity building activities for SMEs

Agri-business	<ul style="list-style-type: none"> - SMEs' insufficient awareness of GVCs and their possible roles - Lack of SMEs' capabilities 	<ul style="list-style-type: none"> - Improving SMEs' awareness of GVCs and promoting networks of products - Joint participation of SMEs in high value-added activities - Promoting the establishment of business partnerships between SMEs and MNCs - Enhancing capabilities and promoting technological upgrading
Automotive	<ul style="list-style-type: none"> - Lack of adequate standards for quality and business capability - Poor business environment - Protective trade measures - Inadequate SME collaboration - Lack of awareness of GVC opportunities 	<ul style="list-style-type: none"> - Solving lack of adequate standards for quality and business capabilities - Helping SMEs survive in highly competitive environments - Correcting inadequate SME collaboration and raising awareness of GVC opportunities
Healthcare Industry	<ul style="list-style-type: none"> - Tariff and non-tariff measures 	<ul style="list-style-type: none"> - Identification of obstacles to converge, reduce or eliminate tariffs on healthcare products - Undertaking regulatory cooperation to promote healthcare products' supply chain connectivity

2. Policy recommendations

(a) Recommendation for actions by individual member economies

1) Active implementation of trade and investment liberalization

To achieve the goal, overall government policy for industrial development should be oriented toward GVC perspective. In the GVC architecture, imports of intermediate goods and services are indispensable factors in creating value. Therefore, the governments need to consider a change of perspective so that imports and exports are seen not as substitutes but as complements. This change of perspective will make governments engage in trade and investment liberalization more actively. Protective measures such as restrictions on domestic contents may work as obstacles to SMEs' participation in GVCs and the creation of added value, particularly in developing economies that do not have sufficient producers of quality materials. Therefore, reducing trade barriers, including both tariff and non-tariff measures, is essential to integrate SMEs' into GVCs. Moreover, not only attracting foreign investment but also supporting outward investment by domestic firms seeking comparative advantage should be encouraged. By doing so, GVCs can achieve greater efficiency and maximize value created. To implement this, government should actively participate in trade agreement negotiations and hold meetings between multiple economies.

2) Supporting capacity building of SMEs

Efforts should be made to support R&D and training of skilled workforce to enhance SMEs' own capabilities as well as attract global MNCs that are likely to transfer technologies to SMEs. Since SMEs have few resources to allocate to capacity building activities, particularly in developing economies, governments should sometimes take the lead in developing technologies and improving

skills for SMEs. Moreover, investment or activities that are so valuable that they can maximize value-added for the economy should be attracted. To implement this, investment attraction policies should be analyzed and re-evaluated. The effectiveness and appropriateness of the policies should be evaluated in terms of the relationship between countries from the perspective of creating value-added. Analyses and evaluations of such policies require a thorough understanding of GVCs of the individual industries and the patterns of FDI. Based on such analyses and evaluations, additional incentives to attract investments and activities by MNCs engaging domestic SMEs are necessary.

3) Long-term policies to build social capacity in terms of business ecosystem

A business ecosystem is built on value chains that contain not only the economic relationship between participants but also the cultural environment. In other words, a business ecosystem is a value chain that is enhanced by cultural elements. The interaction between the participants of the business ecosystem creates not only the physical value but also intangible social assets. These social assets then contribute to the sustainability of a business ecosystem. To build a business ecosystem, both physical assets and social assets are required. Therefore, long-term policies to build social capacity from the perspective of a business ecosystem are needed.

4) Enhancing information accessibilities for SMEs

The reports prepared in the sectorial work streams of this initiative consistently suggest that SMEs' awareness of GVCs is still at a low level and emphasize that SMEs suffer from lack of information about the GVCs they need to participate. Therefore, governments should promote SMEs' awareness of GVCs and provide necessary information on accessible GVCs. The objective can be fulfilled in various ways. Building an open and public database of GVCs and managing a matching or partnering program for SMEs to link them to GVCs can be considered. Building a system to provide information on international quality standards or requirements and assist SMEs to meet them is another policy option.

5) Financial Support for SMEs

Financial constraints are one of the main reasons SMEs have difficulties in participating in GVCs. Restrictions on available financial resources force SMEs to be restricted within small production capacities, thus failing to realize economies of scale. This results in SMEs' inability to secure the basis for enhancing their productivities through investment in R&D activities and innovation. The reason SMEs suffer from financial constraints is their small size, lack of credit guarantees and insufficient collateral. Therefore, governments need to enhance financial support for SMEs that are willing to participate in GVCs. Founding international funds to promote the development of SMEs or to provide insurance for them can be examples of solutions to this issue.

6) Improving business environments and building effective administrative systems

In the previous section, the importance of attracting valuable foreign investment that can bring spill-over effects and contribute to the enhancement of SMEs' capabilities was emphasized. To attract potential investors, it is necessary to establish a good business environment. Building a good business environment is based on transparent and effective administrative systems.

Implementing this action depends on the willingness of individual governments. It is recommended that governments should review current administrative systems, remove redundant regulations and offices, simplify approval and registration procedures, and try to eliminate corruption. This can be implemented without the assistance of other countries or international organizations if the government has a strong will. However, few governments are successful in implementing these actions in practice. Therefore, it can be considered that multiple governments should take action to establish international

standards and launch programs to build good business environments and monitor one another through those programs.

7) Establishment and implementation of appropriate GVC-oriented industrial policies⁶

When we consider attracting foreign investment to promote SMEs' participation to GVCs, it is usually assumed that the investment authorities persuade global lead firms to invest in local industries. However, in practice, it is global suppliers, not lead firms, which make many of the new investments that developing economies are seeking to capture. Therefore, the investment authorities should make efforts to attract investment from global suppliers, and investment facilitation policies should be introduced to satisfy the needs of those firms. By attracting global suppliers, local lead firms can rely on broader industry GVCs for a wide range of inputs. This can lower risks and barriers to entry for local firms, provide access to capabilities and scale that cannot be achieved by domestic sourcing, and ensure that outputs are produced using up-to-date technologies.

Moreover, industrial policy should be able to find and target higher-value niches that are suited to the existing capabilities in the GVCs. This sort of value chain specialization assumes an ongoing dependence on imported inputs and services. Reliance on global sourcing means that it assures involvement in leading-edge technologies, standards and industry best practices, even if the entire value chain may never be captured.

(b) Recommendations for collective actions by APEC

To promote SMEs' integration into GVCs, APEC needs to combine the efforts of the members and promote cooperation between them. To achieve this goal, the following actions should be taken.

1) APEC-wide promotion of trade and investment liberalization

In general, trade and investment liberalization is hard to accomplish by unilateral efforts of an individual economy. Moreover, individual governments are often tempted to depend on trade-protective measures when they consider ways to promote domestic industries. However, many researches and empirical analysis suggest that the protective measures generally cannot accomplish the intended purpose, only resulting in weakening the competitiveness of domestic industries. Therefore, it is necessary for APEC to foster a favorable atmosphere toward free and open trade and investment. With the appropriate free trade scheme, APEC should put more efforts on initiatives to facilitate regional economic integration and free and open trade and investment.

2) Cooperation for promoting investment from MNCs

The overall processes of GVCs are mainly created and operated by MNCs that can manage each step of creating value overseas. On the other hand, SMEs have difficulty in accessing global markets because of insufficient capacities. Therefore, cooperation from MNCs is almost indispensable for SMEs to participate in GVCs. It is important not only to provide information to SMEs on GVCs, but also to promote access to wider markets and support SMEs that can form joint ventures with MNCs.

⁶ Extracted and summarized from the contents of Bhatia, Ujal Singh (2013), "The Globalization of Supply Chains – Policy Challenges for Developing Countries", a chapter from "Global Value Chains in a Changing World" edited by Deborah K. Elms and Patrick Low, World Trade Organization.

Launching a matching program between SMEs and MNCs in appropriate GVCs that need cooperation from those SMEs can be one practical solution to this issue. Such a program may take advantage of an international conference, exhibition fare or operating matching database.

3) Supporting capacity building of SMEs

To enable SMEs to participate in GVCs, they should have sufficient capabilities to process orders and meet the requirements from leading firms of the value chains. However such capabilities can be built only by raising the technology level of SMEs, which requires an accumulation of efforts and investments in research and innovation with a long-term perspective. In general, SMEs may not afford to sufficiently allocate their resources to activities that do not produce immediate and visible results. It is necessary to manage APEC-wide programs for capability building of SMEs consistently. Through those programs, methods to share and disperse technologies between SMEs and the firms that possess the IP rights for the technologies should be considered along with harmonizing the interests of original developers and beneficiaries of technologies and compensating developers' investments and efforts for innovation. For this issue, cooperation from relevant fora in APEC including the Policy Partnership on Science, Technology and Innovation as well as the SME Working Group should be encouraged.

4) Development of industrial infrastructure

In addition, discussion needs to be strengthened on how to improve the infrastructure conditions of member economies. Insufficient infrastructure is one of the chronic issues that prevent industrial development in developing economies. SMEs are negatively affected by lack of infrastructure in overcoming the low level of capability. Because construction of such infrastructure cannot be fulfilled by an individual firm or group of private firm, public-private partnership should be encouraged.

5) Cooperation for enhancing information accessibility

To enhance information accessibility, it is necessary to facilitate APEC-wide information sharing on GVC. To accomplish this, APEC may consider holding information sharing sessions on a regular basis through such opportunities as workshops, policy dialogues, or publishing of issue papers on designated themes that are relevant to GVC. Also, APEC can consider collecting information on GVC policy from member economies and establish an open database to support SMEs' accessibility to GVC.

6) Promotion of cross-border e-commerce as a means for digital value chain

Policy measures are encouraged for utilizing e-commerce in line with the digitalization trend of the global economy. E-commerce enables SMEs to overcome physical distances from and obstacles to accessing global markets. By taking advantage of e-commerce, SMEs can participate in GVCs as a lower cost, which can contribute to promoting further and broader integration of SMEs into GVCs. Therefore, APEC may explore how to strengthen linkage between GVC agenda and cross-border e-commerce issues, and promote understanding of the policy implications regarding the development of 'digital value chain'.

Abbreviations

APEC	Asia Pacific Economic Cooperation
B2B	Business-to-business
FDI	Foreign direct investment
FTA	Free trade agreement
GSAS	GVC-SME Automotive Sector
GVC	Global value chain
ICT	Information and communications technology
ISO	International Organization for Standardization
M&A	Mergers and acquisitions
MNC	Multi-national corporation
OECD	Organization for Economic Co-operation and Development
OEM	Original equipment manufacturer
R&D	Research and development
SME	Small and medium enterprise
TBT	Technical barriers to trade
WTO	World Trade Organization

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