Alternative Growth of Asian SMEs

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Abstract

This article analyzes the process of growth of small and medium-sized enterprises in Asian countries. Based on the accumulation of capabilities and resources through subcontracting, OEM or joint venture, SMEs often obtain competitive advantage to lead to growth. The types of growth process vary depending on the stage of economic development, socio-cultural conditions and corporate strategy. The subcontracting and OEM are quite effective approach for SMEs with limited resource to enter into overseas market. Firms can upgrade the technological capabilities and then proceed into manufacturing with own brand.

1. SMEs as a driving force of economic development

Despite the obvious influence of big firms in economy, new industries have often been developed by new firms. As Schumpeter described, innovation is a key for economic development. And innovation is substantially performed by small and medium-sized enteprises (SMEs) which are less constrained by traditional views and practices.

Recently, SMEs are attracting much attention in countries which are eager to create employment and to foster new industries. In 1995 OECD started a project to study the role of SMEs and to suggest new policy for member countries to stimulate economy.

The proportion of SMEs in the economy of Japan, Germany, UK and US are 99.5%, 99.7%, 99.9% and 99.7% respectively in terms of number of enterprises (OECD 1996). This fact implies two roles of SMEs. First, the development of economy as a whole depends on the upgrading of SMEs which occupy major portion of the economy. Without increase of organizational capability of composing SMEs, the economy seems to be hard to increase national welfare. The proportion of employment by SMEs in Japan, Germany, UK and US is 73.8%, 65.7%, 67.2% and 53.7% respectively. As the figures indicate, SMEs offer a large portion of jobs and then income to people.

Second, SMEs can be a driving force of economy by implementing innovations. It is often said that innovation is creative destruction. The firms which are dominant in the industry are not easy to change strategy, practices and organizational culture, since the change often leads to the denial of value and position they hold. On the contrary, SMEs are easier to change them. These two roles of SMEs can be seen in the most of countries historically.

Viewing the roles of SMEs, it is easy to understand reasons why countries need to emphasize the upgrading of capability of SMEs. In the past decade, countries in Asia like Singapore, Thailand,

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Malaysia and Indonesia were successful to achieve high economic growth by utilizing direct investment by MNEs with capital and techonolgy. Some of local firms could grow quite large and diversify their business in growing markets. The direct investment by multinatioanl enterprises (MNEs) into Asian countries contributed to the increase of production and export.

Although it seems Asian countries succeeded, they had to admit the weakness of their own foundations. That is, there are not enough SMEs as a supplier of parts or materials to support operation of large firms or multinational enterprises. Economies are in fact heavily dependent on the investment by MNEs.

Government officials and top managment of companies realize that the economy is still weak in the foundations. Local firms do not have enough managerial resources and capabilities to compete in the international market. They need supporting industry to supply key parts and materials which are at present mainly supplied by multinational companies. This dependence sometimes incurs serious problem in the balance of payment.

So, it is thought that SMEs should be intensified to improve function as a supplier for large firms, otherwise the basis of economy stay weak and local firms can not obtain strong domestic basis for operation.

In this sense, the relationship between large firms and SMEs is cooperative, not separated. They should be hand in hand. Without nurturing SMEs which occupy a large part of economy, the economy continues to be dependent on MNEs. The currency crisis in ASAEN countries in 1997 revealed this weakness.

Vendor Development Program in Malaysia is a typical case that government began to put policy emphasis on fostering SMEs to strengthen the function of SMEs as a supplier. The emphasis of program was put on industries like electronics and automobile. These assembling industries especially need to obtain the support from local suppliers which can supply parts and materials.

Thus, NIEs and developing countries realize the siginificance of nurturing SMEs in order to create solid basis of economic development. It is not easy to become a competitive firm which has strong position in a world market without contribution of SMEs. Some of Asian countries are successful in certain area to create effective cluster of industry such as Malaysian electronic industry.

The second role of SMEs comes into the perspective in ASEAN countries after they achieved high economic growth. SMEs as a new venture or an innovator is increasingly needed. The innovation of information technology makes it easier for SMEs to enter into a market by lowering entry barrier.

Although it is not easy to obtain market opportunity, firms often succeeded in expanding business. In a new emerging market, there often exist more demand than supply. There is a plenty of room for SMEs to obtain a portion of market. There is a surplus of market (Penrose 1959). And specification of product and technology is not fixed but fluid in the introduction stage of product. Under these circumstances, there is an opportunity of success for SMEs.

2. How SMEs find market opportunity

In this paper, we examine the characteristic pattern of growth and organizational capability of Asian SMEs. How SMEs find opportunity of business and increase organizational capability to become competitive in the market? It is important to clarify the pattern of growth of SMEs.

(1) Finding market opportunity

Two roles of SMEs are in the scope of Asian countries. As mentioned above, first role is to be a supplier as the basis of economy. The second one is to be an independent innovator. There exist a number of independent firms in marginal business and tertialy industry. It is possible for local small firms to find a niche market. But an innovative independent firm is still few in its number.

From the viewpoint of economic policy, it is desirable that SMEs can develop their business by their own. With the limited resources of human and capital, how can firms find market opportunity? In the study of strategy, Abell revealed that firm can define its business by using domain concept consisting of three dimensions of customer function, customer needs and technology (Abell 1980). It explains how company can define and expand its business by entering new dimension. The concept of domain focuses on extension of business area compared to own existing business.

As domain concept does not explicitly include the comparison with competitor in a market, we proposed to use the concept of business space which consists of three dimensions of market, customer satisfaction and organizational capabilities (Kimbara1995). Companies can find opportunity in creating own area by examining the three dimensions.

First, market is a kind of product or service where companies supply their product or service to customers. It is normally describesd as product market or industry. Majority of firms in the market compete on such factors as cost, productivity and quality. Market can be classified into several types or segmented market according to customers or products. Besides, there is a market which is not supplied by exisitng companies. Often, new companies can make different segmentaion of market or find a niche market. There is a new emerging market which is not supplied satisfactorily. Above all, market creation is one of the effective ways to obtain the business opportunity.

Second, customer satisfaction is the dimension which customers satisfy their needs by product or service. Customer needs include one on price, product function, quality of product or service, brand, financial convenience, deliverly, easyness to use, etc. When firms produce value such as low cost, high quality, new function, superior design, these values are offered to satisfy the needs of customer. If these values are larger for customer than competitor's, they attract more customers and in turn give competitiveness to firms.

Therfore, companies try to appeal that their product has much value for customers. They try to fill new customer needs or unsatisfied needs. And they supply products or services to satisfy these needs. Walkman developed by Sony reveales the case. Walkeman could satisfy customer needs which were not fulfilled before by existing products. Thus, even when a company starts business in a niche market, it can stimulate the needs in the niche market to grow into dominant segemnet of market. Then it can create value recognized by the majority of customers.

Third, organizational capability is the dimension which gains access to customers. It is unique competence in the form of technology or business system. Company develops new technology which enables new product or service. Product innovation often makes possible for company to get competitive advantage in new product sales. Therefore, product and process innovation are quite useful way to get market opportunity.

Besides, the process or business system innovation generally leads to the reduction of cost or improvement of productivity. This also creates value for customers. For example, Dell Computer innovated the supply system of computer and in turn customer relationship. Likewise, Internet business became possible since information technology developed rapidly. Networking of business or procurement through outsourcing as well are a new way to improve the efficiency of operation. Such innova-

tion in distribution, information, or business system brings about advantage to firms. Thus, Market competition is likely to shift from cost efficiency to differntiation of products and innovation of business system.

We may conclude that opportunity can be found in one of three dimensions when firms are able to recognize the effective different positioning compared with existing one. The competition does not occur on the only one factor such as cost or price. Firms compete on many factors in the dimension of market, customer satisfaction and organizational capability.

(2) Integrating functions

To be sure, it is not enough to find an opportunity for the success of business. It is the beginning of business process. In addition to the discovery of market opportunity, company needs to integrate diverse functions such as production, marketing, distribution, finance and R&D into a coordinated activities which produce a product or service.

Strategy innovation and change of organizational culture led by strong leadership of top management can enhance competitve advantage when they create larger value for customers. Organizational activities should form the value chain so as to produce value for customers. And such activities need to be interrelated with customer need and market. Organizational activities should not be separated from market and cutomer satisfaction.

(3) Roles and opportunity in SMEs

Roles of SMEs in the economy and market opportunity have close relationship. Viewing the roles and opportunity, there are certain characteristics in the behavior of SMEs.

First role of SMEs which forms a basis of economy is largely performed through the large-firm small-firm relationship. SMEs support the industrial development by supplying necessary parts and material to large firms. In this role, SMEs make efforts especially on the operation emphasizing low cost production. In a transaction with larger firm, SMEs often become a subcontractor or OEM supplier of products. Product market is given through the relationship in the sense that SMEs do not have initiative to change the domain by their own will. In this relationship, customer needs are largely on cost and productivity.

Second role of SMEs as an innovator tends to seek new customer satisfaction or new market. To become an innovator, SMEs need to take the initiative of new product development and risk of business, though there is no guarantee of success.

3. Types of SMEs and growth strategy

Regarding the growth of SMEs, classical study by Schumpeter indicates that innovation is the driving force of economic development and small entrepreurial firms often make innovation. In reality, we see a little bit different picture of the economy. First, the economy today are largely controlled by big firms. Second, majority of SMEs are not eager to make innovation. Most of SMEs are passive in the sense of innovation creation. They continue to stay as a small firm owned and managed by a family or an individual.

For example, there are about 2,450 thousand companies in Japan. But the number of companies listed in the stock exchange which are reasonably viewed as large firms are only about 3 thousands. Therefore, it is not wrong to say that most of firms are small in its size. In addition to this fact, 65.5% of manufacturing SMEs in Japan in 1981 was regarded as a subcontractor of big firms (White Paper). So,

majority of SMEs are regarded rather dependent on large firms.

Turned to Asian countries, their economies in the past few decades have developed by intensifying the expansion of production through investment by MNEs. As a result, local firms as a joint venture partner or mere supplier are under the substantial influence of MNEs. Few of local firms are able to become large without utilization of resources and capabilities of MNEs.

Table 1 The ratio of subcontracting SMEs in Japan

Industry	ratio of subcontractor	
	1976	1981
manufacturing	60.7%	65.5%
food	14.5	17.5
textile	84.5	84.9
clothe	83.9	86.5
machine	82.9	84.2
electric/electronic	82.3	85.3
transportation	86.2	87.7

Footmote: ratio of subcontractor = numbers of subcontracting manufacturing SMEs/ number of manufacturing SMEs × 100

Source: White Paper 1987

When we examine the growth of Asian SMEs, their growth is not necessarily what Schumpeter indicated. Surely we see entrepreneurial firms in Asian countries. However, the main process of economic growth relies on MNEs investemnt and the relation with them is most siginificant for the growth of local firms. With limited managerial resources and capability, many local firms cannot afford to grow independently. Local SMEs come into the transaction with MNEs or large local fierms.

Detailed conditions under which SMEs exist are different depending on country, the stages of economic developemnt, socio-cultural environemnt, industrial structure and interfirm relationship. In addition to the Schumpeterian type, we are able to propose alternative growth of Asian SMEs from the observation of experiences in several countries. We recognize different types of growth and process of capability accumulation.

(1) Type 1

First type is subcontracting. According to the definition often used, it is called a subcontractor when more than 50% of sales of SMEs are sold to a larger firm. This type includes small firms which simply produce what they are ordered by larger firms. There is not designing or R&D function by SMEs in a simple case. The another one of this type is small firms which has R&D function by themselves .

Many small firms in assembly industry are in the category of subcontractor to larger firms. So, in this subcontracting type, SMEs follow the operation of larger firms and accumulate resources and skills within a given product market. Most typical case is seen in Japanese SMEs suppliers in the automobile industry. They provides parts or material to large assembler firms. There exist highly developed vertical network among firms involved. And SMEs steadily improved technological capabilities in the form of product quality and productivity in a given business area.

Several features are seen in this Type 1. First, a firm can obtain the growth opportunity with low risk. Second, the firm can save scarce resources in production, R&D and marketing, avoiding risk of business. Third, even when the firm does not have enough capability as an independent competitor in the

market, the firm can enter into the market through subcontracting. Fouth, subcontracting offers the opportunity to acquire up-to-date information and to adapt to customer demands.

On the other hand, we recognize constraints of subcontracting as follows. First, subcontracting tends to become easier when the business is in a growing market. But, it is not easy to take active action to expand sales through subcontracting in a matured or declined industry. The growth of SMEs under subcontrcting relationship is dependent on the growth of business of principal firms. Therefore, there is the limit of growth by SMEs if they continue to maintain the subcontarcting relationship. Second, it is required to keep reliable relationship with principal firms.

We take one sample of subcontractor from Japanese supplier of auto parts. Hirotec is a supplier of doors for cars of Mazda. Hirotec was established in 1932. But the factory was closed during the period of World War II. It started operation again in 1946 and entered into manufacturing of auto parts for Mazda in 1953. At present, Hirotec produces all types of doors for Mazda. The company focused on the production of doors based on reliable relationship with Mazda. Technology was enhanced in engineering and assembling of doors during the period of growth of Japanese automobile industry. In addition to door making, the company today sells door assembling system and mold for door making.

Figire 1 shows setup time of stamping machine for door making and number of shot by the machine per hour. The company put emphasis on the increase of efficiency and hence the reduction of cost. For this purpose, company implemented several steps such as productivity improvement, QC actitivty, realization of automation of operation. As a result, we find there was a remarkable effect in the efficiency. During the period from 1978 to 1991, the productivity in this process increased almost double. Then,

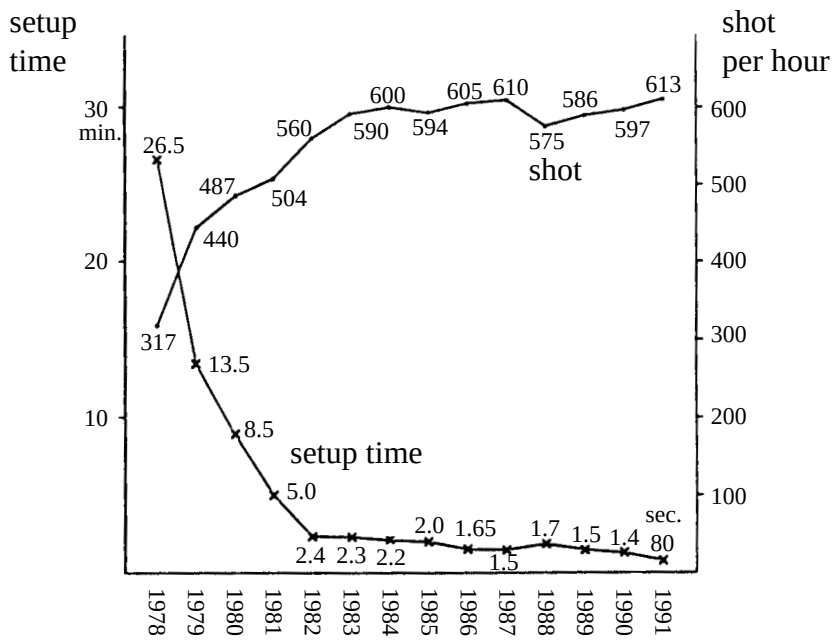

Figure 1 Setup time and number of shot per hour in Hirotec
Sourc: Kimbara, T. 1996. originally from Y. Asaeda, 1991.

the cost per unit improved remarkably. The quality and productivity of the company is ranked to be the top level of the world by US journal. The company could sell assembling system and mold to GM and Saab-Scania. As this case indicates, subcontracting firms can improve productivity, product quality and technology considerably. They can accumulate high level of skills in the specific product or business.

(2) Type 2

Second type is OEM (Original Equipment Manufacturer). OEM is a form of relationship between two firms. It is quite similar to subcontracting. But, OEM is different from subcontracting in the sense that OEM suppliers manufacture products under the buyer's brand.

OEM is usually used to sell products to firms when SMEs want to enter into the transaction in order to achieve the expansion of production volume. OEM is seen in large firms as well as in SMEs. OEM is sometimes used by leading companies as strategic alliance to take the competitive advantage in the market.

OEM is possible when suppliers are skillful enough to manufacutre what customers want. The effects of adopting OEM are as follows. First, it keeps a close touch with a lead user in the indusry who has most highest technological requirements and up-to-date information. This enhances the skill of firms which supply products through OEM. Second, OEM brings about advantageous experience curve and economy of scale to supplier firms. This implies the rapid cost reduction since the production volume becomes, larger than their own alone.

However, OEM has weaknesses as follows. First, OEM is dependent on the order from customer firms. If there is not reliable relationship, it makes the management structure unstable. Sometimes, there exists risk of sudden stop of orders because of policy change by buyer firms. Second, it has a weakness to face indirectly the change of market and technology.

SMEs will grow by using OEM as a means to obtain access to overseas market and expand thier production volume. Typically, they first enter into a market as a low cost and/or low quality supplier of rather simple products. After they learn skill of operation and technological knowledge, they try to expand the product line. When they enter into OEM, the volume of production increases. As a result, they often obtain the competitve cost position if experience curve exists.

The concept of OEM is generally defined as one which includes R&D function. The OEM among large firms are mostly this type. If we distinguish simple OEM without R&D from OEM with R&D, firms accumulate skills and technology so as to shift from OEM without R&D to ODM (Original Design Manufacturer).

OEM was a key for the success of Taiwanese firms in industry like shoes, bicycle, personal computer and IC. As Table 2 shows, OEM export in 1990 occupies 47% of all export of information- related products of Taiwan. Mitac International and Acer, which now hold quite strong market position, could grow by adoptong OEM. They learned technology and gained product information through the experience of OEM. It enables OEM suppliers to aquire learning opportunity and economy of scale.

They could obtain competitiveness in a market and then launch further into ODM (Original Design Manufacturer). They now have own R&D capabilities. In the case of Mitac International, more than 70% of sales comes from OEM/ODM in 1997. With the increase of OEM manufacturing as a key process of industry, it stimulates the increase of firms in other specialized process like design and test in Figure 3.

Many Japanese firms as a preceding example also adopted OEM as an effective way to cultivate over-

seas market and to expand production volume with economy of scale.

In summary, OEM is obviously effective in following points. First, enlargement of production volume through OEM makes cost reduction possible because of economy of scale. Second, there is risk avoidance through OEM. OEM supplier has less market investment cost and risk. Third, it is an useful way to acquire technological information and experience accumulation. Fourth, it is also possible to get market information by keeping close contact with a leading customer. Fifth, OEM makes possible to cultivate overseas market. OEM is an effective way to enter into overseas market.

On the other hand, there are also limits of OEM. First, it is oriented to the mass production of standardized products. As a result, it is not still possible to be competitive in the most recent technology or products. Second, OEM in international relationship tends to rely on key parts from overseas to assemble the products.

Table 2 The proportion of export of information-related products by Taiwan

export by	1984	1985	1986	1987	1988	1989	1990
foreign firm	572(57.0)	708(58.0)	908(44.0)	1,443(39.0)	1,800(36.0)	1,835(35.0)	1,762(30.0)
local firm OEM	402(40.0)	451(37.0)	805(39.0)	1,518(41.0)	2,200(44.0)	2,269(43.3)	2,760(47.0)
local firm Brand	30(3.0)	61(5.0)	351(17.0)	740(20.0)	1,000(20.0)	1,140(21.7)	1,351(23.0)
total	1,004(100.0)	1,220(100.0)	2,064(100.0)	3,701(100.0)	5,000(100.0)	5,244(100.0)	5,837(100.0)

footnote: Local firm OEM means OEM export by local firms. Local firm brand means own brand export by local firms.

source: Kawakami, M., 1998

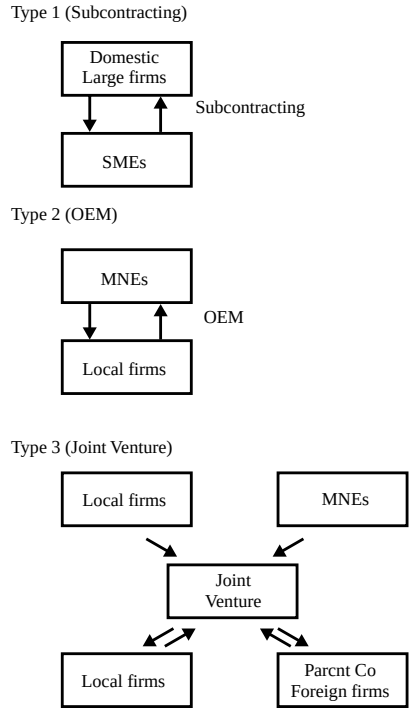

Figure 2 Types of strategy

(3) Type 3

Third type is joint venture which is an organization jointly owned by two firms, local firms and MNEs in the case of international operation. As one form of direct investment, joint venture is a dominat way which government seeks to keep control on the behavioe of MNEs.

In accepting direct investment by MNEs, host country government prefers to choose joint venture ownership which enforces the participation of local capital into the ownweship to a certain degree. Through a joint venture which is one of most effective way to transfer technology and management skill to host country, a host country partener can learn much on management and operation. It is evident that local firms could accumulate capital and then expand a business in a new product line or new market. Although SMEs can use type 3 independently, type 3 is often combined with type 1 or type 2.

4 A cluster of value chain

The dynamics of economy revealed that SMEs as a subcontractor or OEM supplier could obtain growth opportunity . The relationship with large firms as a supplier of parts or materials can increase experience and capabilities of SMEs. Some create new competitive position as a result of accumulation of experience and organizational technological capability. Also, they often become an innovator and a leading company in a specific market or segemented market.

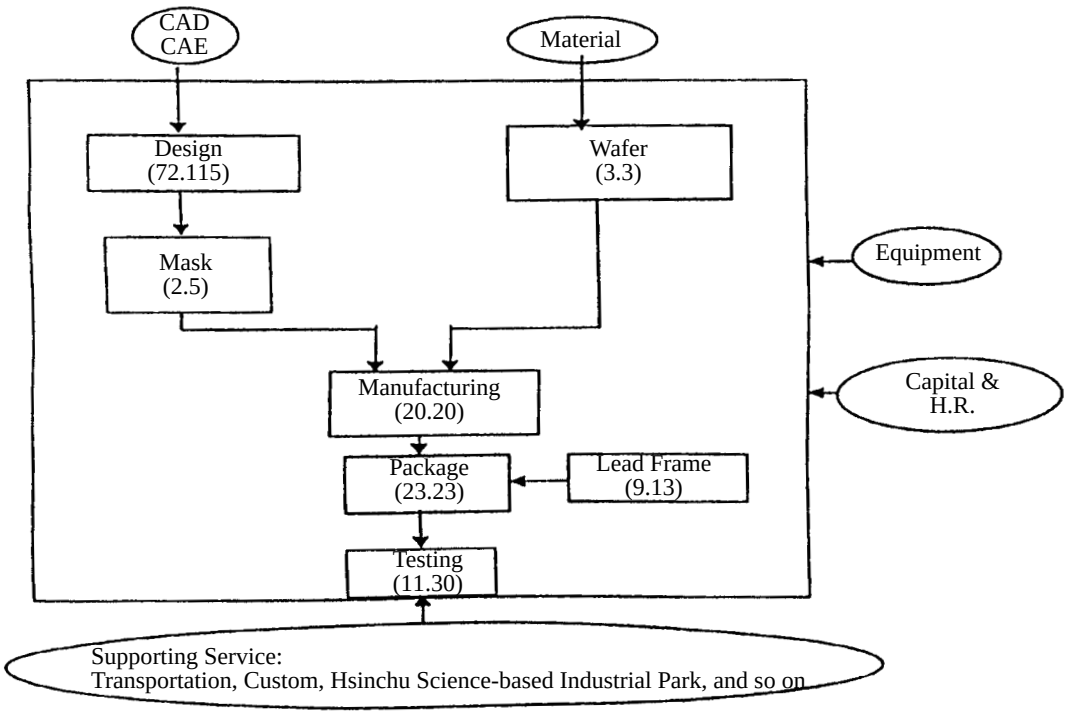

Figure 3 A Process of IC Industry and Number of Firms in Taiwan
footnote: figures in the parenthesis are number of firms engaged in 1997, 1998
Source: Taiwan Industrial Technology Research Institution (June 1997, December)

When region or nation increase the number of companies in the specific industry, it creates the cluster of value chain. Value chain is the chain of functions or activites. Value chain consists of primary activities and support activities (Porter 1985). Primary activities are inbound logisitcs operations, outbound logistics, marketing&sales, and service. And support activities are technology development, procurement, human resource management and firm infrastructure, namely, general management.

Value chain is the concept to indicate the aggregation of functions which firm performs. When there are a number of value chain, it is defined as a cluster. This cluster includes the division of labor in the industry. Division of labor implies the division of process of business which is implementated by different organizations.

A cluster comprises a number of value chain of individual organizations . When a cluster is made of a large number of value chain, it creates productive bed for interaction for innovation. The nature of cluster varies, depending on the industry, division of labor, technological characteristics and availability of resources. Type 1 in Figure 2 is likely to build vertical division of labor under a few big assemblers. In this cluster, a number of firms, which have access to the market and take initiative to develop products or take business risk by their own will, are limited. This implies the less flexible structure of cluster to the change of market conditions. On the other hand, firms have rather horizontal relationship in type 2. A number of firms have access to the market and take own risk. They tend to have more flexible structure of cluster.

The importance of cluster are now clearly recognized by government officials and researchers. The success of Silicon Vally, where many venture firms in information technology gather and start innovations, is a typical case of cluster of industry. Though Silicon Vally is quite obvious in its impact on the US economy, we may point out several similar cases in other countries as well.

The case of Hsinchu Science -Based Industrial Park in Taiwan shows good example of cluster. There were many semicinductor and computer firms gathering in that park. It promoted Taiwan as production basis of IC and personal computer industry. The flexbility and efficiency of cluster depend on division of labor, value chain, and organizational capability of firms. The structure of Taiwan IC industry is shown in Figure 3. In this industry, manufacturing is expanding largely through OEM. Then, other process like design and test are expanding radically. The increase of firms strenghthens the competitive advantage of Taiwanese IC industry.

Also, Italy became famous since Italian economy heavily relys on SMEs and holds relatively strong competitive position into the world market. Italy has many traditional industries which have value chain in such industry as knit wear, chocholate, bicycle, leather ware and glass ware.

In Japan, we also find good example of cluster. Small firms in Ohta-district, Tokyo was often regarded as a case of a cluster. Traditional industries which exist all over the country also have complex value chain.

5 Conclusion

We examined types which are seen in the growth of SMEs in Asian economy. Each type has unique pattern of growth, organizational capability and role in the economy. They are closely related to the strucutre of the economy, socio-cultural conditions and stages of economic development. It also define the nature of cluster of industry. Vertical division of labor in the cluster is likely to bring higher efficiency but less flexibility to the change of external conditions.

The conclusion we could obtain from the analysis can be summarized as follows. First, in view of role of SMEs in economy, it is needed to give appropriate support to nurture them. It is necessary to give support to SMEs to upgrade technology and product quality along the growth of market. On the other hand, it is important to prepare environemntal conditions for the growth of new buiness with entrpreneurial concept and mind. There should be a mixture of policy emphasis on innovation promotion and continual improvement of skills and product quality.

Second, SMEs and large firms should be hand in hand in the economy. It is not separated. It can make strong value chain together.

Third, cluster of value chain of SMEs in the region or industry makes the sources of competitveness and innovation.

Fourth, It is necessary for a region or country to stimulate the accumulation of value chain to create such cluster when it tries to have competitive industry.

As this paper points out, there are different patterns of grwoth of SMEs. The actual development of SMEs in Asian countries often takes an unique path under constraints of resources and capabilities which are different from Schmpeterian model.

Most of Asian economies strongly need the foreign direct investment with technology and capital to promote the economic development. Subcontracting and OEM are effective means to achieve this purpose.

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