

## **Human Capacity Building in SMEs: Japanese Experiences and Regional Challenges**

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### **Abstract**

Although most people are familiar with large companies such as Toyota, Sony, and DoCoMo, it is the small- and medium-sized enterprises (SME) that drive the Japanese economy. SMEs account for 99% of the companies and 71% of the labor force in Japan. For the most part, many Japanese SMEs have benefited from the “pre-employment formal education” of workers in the labor market. In general, Japanese workers across the occupational spectrum are highly literate and numerate. Moreover, SMEs affiliated with the vertical *keiretsu* (“supporting industries” for corporate groupings such as Toyota, Toshiba, etc.), have benefited from the “post employment training” technical assistance of the large companies. At the shop floor level, the key word here is “skill formation”—that is, the ability of workers to acquire skills by performing work activities (1) under supervision, and then demonstrating they can perform (2) without supervision, and finally they can (3) teach other workers how to perform the work activities. A key advantage of Japanese companies, then, has been the ability to continuously improve worker skills allowing them to follow a path of “industrial upgrading” so they can meet their competitive challenges.

Globalization is a new trend increasing the demand by companies for “knowledge workers.” In this connection, the diffusion of electronic commerce (e-commerce) is putting pressure on the pre-employment formal education system to also develop the computer literacy of students. Although Japan got online to the Internet in the mid-1980s, the formal education system has only recently become active in teaching students computer skills with the adoption of the government’s “e-Japan strategy,” a national plan to become an international player in the “new economy.” Facing stiff “mega-competition” and the diffusion of electronic commerce, Japanese SMEs are finding they need workers who have not only the necessary physical skills, but also the mental skills to manipulate symbols and information. Employees, especially line managers and technical staff, for example, must work in virtual groups/teams, production is spread over global production networks, encompassing multiple time zones, countries, cultures, and languages, and the knowledge/service side of a product requires “people-skills.” At the shop floor level, then, post-employment training is now emphasizing “human capacity building”—that is, “the process of equipping individuals with the understanding, skills, and access to information, knowledge, and training that enables them to perform effectively.”

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The regional challenge for Japanese SMEs is to achieve a competitive edge in the global economy by integrating the total management of their firms, cultivating “intra-preneurship” (i.e., within firm entrepreneurship), and upgrading R&D and production technologies. One example of this changing face of Japanese SMEs is the concept of “cell production”—that is, high product variety and small-lot production, using workers trained in multiple tasks. Through these activities, Japanese SMEs are beginning to learn how to cope with the challenges of globalization and create for themselves a competitive edge.

“Small- and medium-sized enterprises (SME), an indicator of economic development, underpin growth through creating jobs and improving living standards. Despite their adeptness and flexibility in coping with market fluctuations, these ventures are now faced with rising competition from international giants and the attendant challenges. There is a pressing need to develop the competitive edge of SMEs through various approaches” (CTPECCHRD 2002). In this connection, this paper focuses on the “human capacity building” experience in Japanese SMEs with an eye towards addressing some of the regional challenges facing PECC (Pacific Economic Cooperation Council) member economies.

## 1.0 SMEs IN JAPAN

Weighing in with a gross domestic product (GDP) of 511.84 trillion yen in FY2000, the Japanese economy is the second largest in the world and represents over half of the combined economic activity in the Asia-Pacific region. By sector, the agricultural sector accounts for 2% of GDP, the manufacturing sector 35%, and the service sector 63%. Nearly 99 percent of these companies are SMEs (METI 2001).

### 1.1 Small- and Medium-Sized Enterprises

The Japanese government defines SMEs as establishments capitalized at less than 300 million yen and employing less than 300 people. However, SMEs in the wholesale sector are establishments with capital of no more than 100 million yen or a workforce of less than 100, SMEs in the retail sector are establishments with capital of no more than 50 million yen or a workforce of less than 50, and SMEs in the service sector are establishments with capital of no more than 50 million yen or a workforce of less than 100.

**TABLE 1: SME Definition**

SME	CAPITAL ¥ mil.	NUMBER OF EMPLOYEES		SECTOR DISTRIBUTION %
		Medium	Small	
Manufacturing	300	<300	<20	32.6
Wholesale	100	<100	<6	5.6
Retail	50	<50	<6	38.2
Service	50	<100	<6	23.6
Total Number of Establishments (0000s)				5,088

**SOURCE:** JSBRI 2001

**NOTES:** The manufacturing sector includes the primary industries (mining), construction, and utilities (electricity, gas, and water).

Small enterprises are defined as establishments with less than 20 employees. In the commercial and service sectors, however, they are defined as establishments with fewer than six employees (JSBRI 2001).

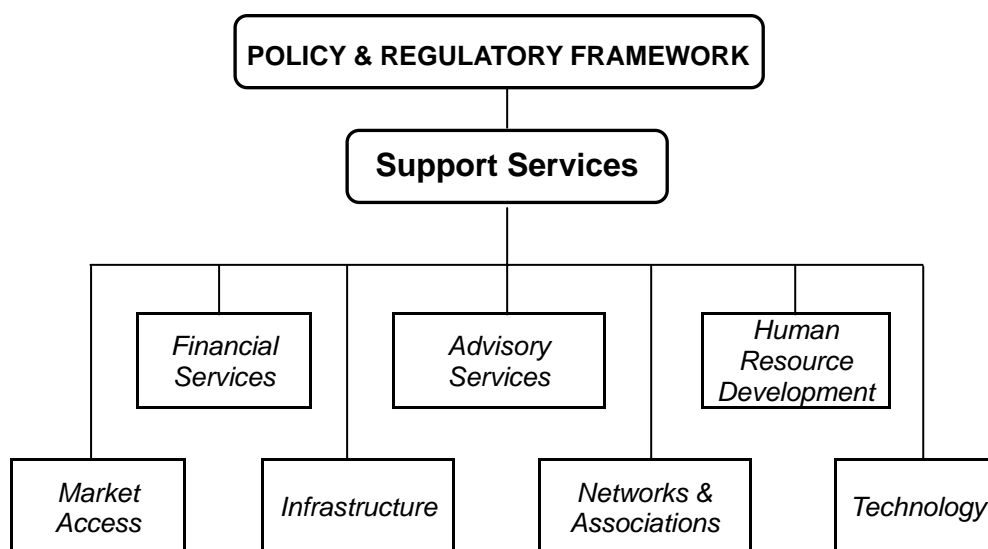
There are slightly over five million SMEs in Japan, with 33 percent operating in the manufacturing sector, 38 percent in the retail sector, 23 percent in the service sector, and six

percent in the wholesale sector. These SMEs account for around two-thirds of GDP, mainly through export business activities. For example, manufacturing SMEs shipped 51 percent of their manufactured goods, the wholesale sector 62 percent, and the retail sector 73 percent. In addition, SMEs employ 81 percent of the 67.4 million strong labor force in Japan (METI 2001; MHLW 2002). The basic characteristic of these SMEs is that they are often family owned and managed, they produce high quality, low cost goods in a timely fashion, but they are weak in R&D and marketing (JSBRI 2001).

### 1.2 SME Promotion

The importance of SMEs to the economy but their characteristic weaknesses has long been a concern of policy makers. Figure 1 shows the common types of support services required by SMEs: financial services, advisory services, human resource development, market access, infrastructure, networks and associations, and technology (UNDP 1997).

**FIGURE 1: Model of SME Development**



SOURCE: UNDP 1997

**NOTES:** **Financial Services** = Commercial Banks, Development Banks, Venture Capital, Savings Associations, Credit Association, Informal Lenders, Other; **Advisory Services** = Business Centers, Service Centers, Research Services, Consultants, Tech/Trade Information, Equipment Leasing, Raw material Procurement, Environmental Services; **Human Resource Development** = Management, Firm Development, College/University, Vocational Training, Continuing Education, Executive Courses, Mobile/On-the-Job Training; **Access to Market** = Export Market Promotion, Government Procurement, Subcontracting, Joint Ventures, Franchising; **Infrastructure** = Industrial Estate, Technology Park, Export Processing Zone, Industrial District, Growth Triangle, Business Parks, Business Incubator; **Networks & Associations** = Chamber of Commerce, Trade Association, Cooperative, Professional Society, Trade Information Net, Entrepreneurial Club, Electronic Mail; **Technology** = E-commerce, R&D Grants, Environmental Protection

A variety of government agencies provide SMEs support services across all the above areas. The Small and Medium Enterprise Agency in the Ministry of Economy, Trade, and Industry, takes the overall lead in promoting SMEs. It is organized into three departments:

(1) director-general's secretariat, (2) business environment department, and (3) business support department. These departments essentially conduct research and develop policies to promote SMEs and leave the implementation of policies to a network of National Support Centers and the Japan Small and Medium Enterprise Corporation.

- The National Support Centers for SMEs is tasked with developing the business environment and give SMEs and venture firms a one-stop access to human resources, technology, knowledge and information, and other business resources.

There are three types of support centers. First, eight **SME/Venture Business Support Centers** extend comprehensive support to those who plan to start up business and SMEs considering public offering of stock, and provides financial and technical assistance and a high-level consulting service on management, finance, and legal matters. Second, **Prefectural SME Support Centers** 54 locations implement SME support projects through the prefectural governments to smooth the obtaining of business resources such as human resources, technology, and information in response to the diversified needs of SMEs. And third, 251 **Regional SME Support Centers** located in large municipal areas support small-scale enterprises that plan to start up a business or aim at business innovation, so they can easily receive advice on their various concerns, and provide over-the-counter consultation, information, and etc.

- The Japan Small and Medium Enterprise Corporation (JASMEC) is tasked with implementing business support programs providing a range of services for SMEs including financing, investment, credit insurance, management guidance, professional training and providing mutual relief.

The JASMEC is responsible for promoting SMEs in nine areas: (1) Promotion of new business ventures, (2) Guidance and financing for upgrading projects, (3) The Small Business Credit Insurance System, (4) The Machinery Credit Insurance System, (5) Human resource development, (6) Offering information services, technical upgrading and support for internationalization for SMEs, (7) Mutual relief system for small-scale enterprises, (8) Mutual relief system for the prevention of bankruptcies in SMEs, and (9) Support for restructuring of the textile industry.

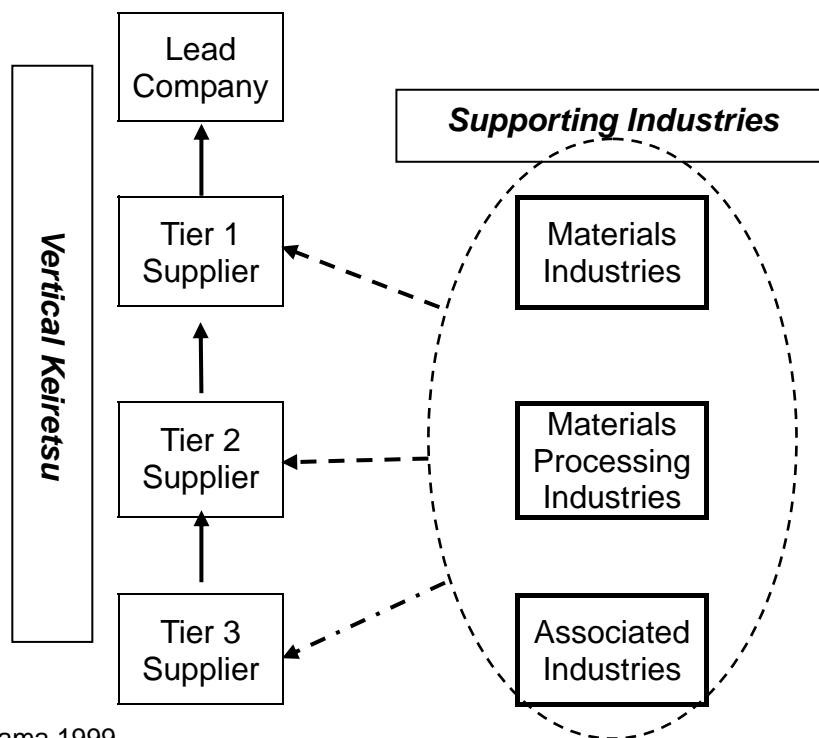
Other quasi-government agencies assist in more specific areas such as the Japan External Trade Organization (JETRO) in domestic and overseas business promotion, the New Energy and Industrial Technology Development Organization (NEDO) in research and commercialization of industrial technologies, and the Japan Finance Corporation for Small Business (JFCSB) to supplement other funding sources or fund innovative business plans.

Among the peak business organizations, the Japan Chamber of Commerce and Industry takes the lead in championing the cause of SMEs by (1) representing local opinions in government policy, (2) supporting SMEs (e.g., issuing business documents, guaranteeing loans, etc.), (3) provide opportunities for business people to develop their skills (e.g., seminars, etc.), (4) gathering and effectively utilizing information, (5) promote regional development, (6) development of human resources, and (7) offering computerization and network services. The National Federation of Small Business Associations partners SMEs to pool business resources.

Many of these support services are commonly found in other countries; however, the

special relationship between large companies and SMEs in Japan is quite instructive. The two common types of SMEs in Japan are subcontractor firms, arranged into vertical *keiretsu*

**FIGURE 2: Supporting Industries**



**SOURCE:** Mukoyama 1999

**NOTES:** **Materials Industries** = ferrous metals, non-ferrous metals, petrochemical (e.g. plastic resins), etc.; **Materials-Processing Industries** = foundry, forging, metal stamping, powder metallurgy, plastic mould injection, etc.; **Associated Industries** = dies and molds, machine tools, founding and forging machinery, industrial furnaces, etc.

(corporate groupings), and independent firms, such as those in the supporting industries. Another large category is local industries and firms—that is, those specializing in products of their locality or region, retailers, and builders—but is not discussed in this paper.

A vertical keiretsu is an intra-industry grouping with several layers of suppliers organized around a lead company, such as Toyota Motor, Hitachi Ltd. and other large producers. Many Asia-Pacific economies try to emulate the vertical keiretsu organization found in Japan. For example, the Thai Board of Investment’s BUILD (BOI Unit for Industrial Local Development) scheme and the Economic Development Board in Singapore’s LIUP (Local Industrial Upgrade Program) scheme come close to emulating this clustering of SMEs, but they both fall short of bringing into the foreground the important functional role of the supporting industries. Supporting industry refers to the cluster of companies in the materials industries, materials processing industries, and the associated industries contributing to the manufacture of parts and components. SMEs embedded in this business environment can systematically address their business needs.

Using the support services illustrated in Figure 1 as a baseline to evaluate the industrial clustering of SMEs in Japan, we can reveal how SMEs can reduce a large amount of their business uncertainties. First, the lead company provides capital funding through

acceleration of shipments, transfer pricing, and etc., all of which is based on the expected cash flow of future transactions—that is, money is priced at its actual expected return rather than the tradition in Japan for it to be based on assets, especially land. Moreover, regional and city banks are more flexible in lending to SMEs affiliated with a major *keiretsu* company. Second, the lead company provides technical (quality control, industrial engineers) and managerial assistance by sending staff to the SME or, conversely, accepting seconded staff from the SME. This facilitates solving practical issues found in daily business activities rather than paying the high cost (monetarily and time) of hiring an external consultant. Third, the lead company is usually in a better position to scan for best practice and adopt it to improve productivity. These practices are incorporated into the lead company's total quality and environmental management system, offering suppliers a low cost, low risk way to adopt proven human resource development practices. More important, finally, is that as the lead company increases its access to domestic and international markets, the SMEs are able to grow their business in good times but buffer themselves from downturns in the economy by diversifying markets. In this regard, the persistent recession in Japan has exposed some of the demerits of this “closed” business system; however, there are still lessons to be learned that compete with public sector policy and program solutions. I elaborate on some of these lessons by narrowing my focus to the human capacity building aspect of the SME support services model.

## **2.0 HUMAN CAPACITY BUILDING**

Human Capacity Building is the “process of equipping individuals with the understanding, skills, and access to information, knowledge, and training that enables them to perform effectively” (UNDP 1992) in an information society. Berg (1993) elaborates on this definition to highlight three main activities:

- Organization strengthening: the process of institutional development
- Procedural improvements: general functional changes or system reforms
- Skill enhancement: general education, OJT, and professional deepening in crosscutting skills

I present below these three dimensions of the human capacity building process as they are played out over the pre-employment education and post-employment experiences of SME workers in Japan.

### *2.1 Pre-employment Education*

The Japanese education system is based on a two-track approach. The first track consists of a “6-3-3-4 Formal Education System”—that is, six years of primary school, three years of junior high school, three years of senior high school, and four years of college.

We can gauge the depth and breadth of the human capital formation process through the literacy and enrollment rates. The literacy rate in Japan is nearly 100 percent. Since the beginning of the 20<sup>th</sup> century there has been almost no differences in school enrollment based on region (urban vs. rural) and gender (see Table 2). This is a legacy of the evolution of education in Japan. Rather than emphasizing tertiary education, the government decided to build a universal education system accessible to all, starting with primary school education

and then over the century, expanding this accessibility to secondary school. Consequently, today, approximately 46 percent of high school graduates continue on to college. This strategy has been bearing fruit in the post-war era. Japanese students in Grades 4 and 8 have consistently ranked in the top three countries in the world over the recent years on an international test for mathematics and science (NCES 1997). Although SMEs have difficulties in recruiting the best students, the equalitarian formal education system produces a highly literate and numerate workforce.

**TABLE 2: Formal Education System**

<b>TRACK 1</b> Formal Education	<b>Elementary School</b>		<b>Junior High</b>	<b>Senior High</b>	<b>Junior College</b>	<b>4-yr. College</b>
Age range	6 – 12		13 – 15	16 – 18	19 - 20	19 -
	<i>Primary</i>		<i>Secondary</i>		<i>Tertiary</i>	
School Enrollment	Total	%Female	Total	%Female	Total	%Female
1970	99	99	86	86	31	---
1980	101	101	93	94	31	20
1990	101	101	96	97	31	24
2000	101	101	102	102	46	42
International Test Scores	Math	Science	Math	Science		
Grade 4	3 (597)	2 (574)				
Grade 8	3 (606)	3 (571)				
Grade 12			---	---		
<b>TRACK 2</b> Vocational Education			<b>CoVoSch</b>		<b>VoTPro</b>	
			<b>Technical College</b>			

**SOURCE:** UNESCO 2002; NCES 1997

**NOTES:** School enrollment data for fiscal year 1999 (i.e., 1999-2000); **CoVoSch** = Continuing Vocational School; **VoTPro**= Vocational Training Program;

The second track consists of a number of vocational training institutions allowing students to opt out of the formal education system and acquire more specialized skills. Students between the ages of 16 and 20 who had not completed primary school can enroll in a Continuing Vocational School, which prepares them for semi-skilled jobs. Students who have graduated junior high school or high school can enroll in one of 44 Vocational Training Programs qualifying them for a skilled job. Graduates of this program may also re-enter the formal education system track. High school students pursuing positions as technicians can enroll in one of the 62 Technical Colleges consisting of three years of senior high school education plus two years of junior college education. All of these institutions build a safety net to catch students, for whatever reasons they do not make normal progress through the formal education system, to make a productive contribution to society.

The vocational education system in Japan is not simply a case of institution building to address social issues. Underlying this system is to link to the “world of work” based on a strategy of plan, do, check, and action (i.e., PDCA Cycle). The Plan phase is anticipating the skill needs in the labor market. The Do phase is the implementation of the vocational training schools/programs described above. The Check phase is a national skills test (*gino kentei*) covering over 300 skills in 133 trades. The Central Association for Vocational

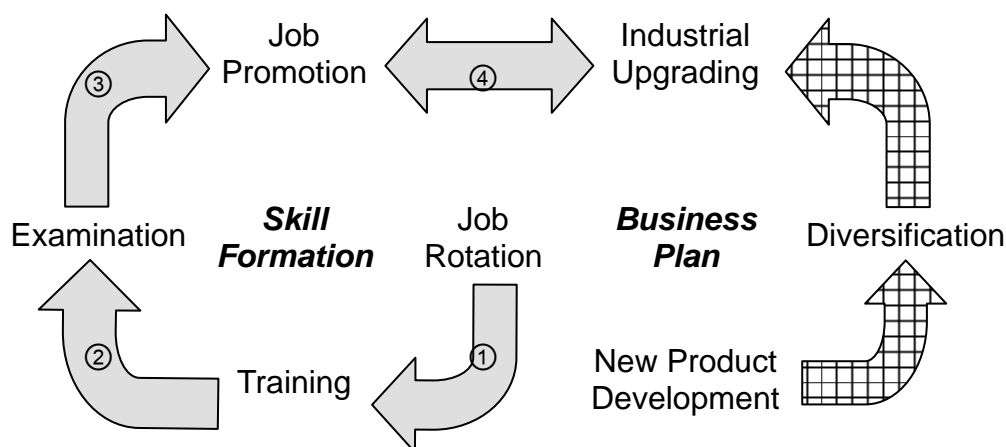


Ability Development prepares the tests and the affiliated associations in each prefecture administer it. In addition, national administrative agencies (e.g., medical practitioners, authorized accountants, first grade architects), local governments, and local organizations (e.g., chefs, nursery school teachers, and second grade architects), and industry associations (e.g., real estate agents, travel agents, etc.) sponsor professional skills examinations. The Action phase is meant to close any gaps between worker qualifications and job requirements not anticipated during the Plan phase. A key component is the Institute of Vocational Training established by the Ministry of Labor (now called the Ministry of Health, Labor, and Welfare) in 1961, to conduct vocational research, develop curriculum, and produce textbooks. This process takes us back to the Plan phase in order to make further incremental improvements.

## 2.2 Post-employment Training and Education

A key strength of Japanese medium-size and large companies is the process whereby workers acquire skills over their lifetime through post-employment training and education. At the shop floor level, the key word here is skill formation—that is, the range of usual or routine work experiences and the ability to conduct unusual or unplanned operations (Koike 1990). SMEs have been less successful than large companies in continuously improving worker skills, but for those embedded in the *keiretsu* groupings have leveraged worker skills to follow a path of “industrial upgrading” so they can meet their competitive challenges (JSBRI 2001).

**FIGURE 3: Human Resource Development and Industrial Upgrading**



**SOURCE:** Tachiki 1990

There are four key elements in post-employment training: job rotation, training, examination, and job promotion. First, job rotation is the practice of periodically reassigning employees to different task or business activity. Line workers rotate among different tasks within their work area or across work areas. Managers rotate among different business activities by-either product, geographical area, or function (e.g., accounting, quality control, etc.). These work experiences give employees an intimate knowledge of the “total manufacturing” process. In addition, by periodically rotating employees among different

task or business activities, they forge an extensive network of interpersonal relations, adding a social dimension to the corporate culture.

Second, training consists of personnel transfer, on-the-job training (OJT), and training-by-position. Up to 86 percent of training in SMEs consists of OJT. The skill level of employees is simply evaluated by whether they can perform their work activities (1) under supervision, and then demonstrate they can (2) perform it without supervision, and finally they can (3) teach other workers how to perform the work activities. Where the technical know how is not found within the company (or corporate grouping), SMEs can turn to a number of peak organizations to obtain it. For example, in the area of quality control, the Union of Japanese Scientists and Engineers (JUSE) and the Japan Standards Association (JSA) have been instrumental in introducing statistical quality control and statistical quality process to industry. The Japan Management Association (JMA) has been a channel for introducing human relations in management. And the Japan Productivity Center for Socio-Economic Development (JPC-SED) has been active in introducing western productivity methods to Japan. SMEs use a line-training method to diffuse throughout the company the know how learned in off-OJT training programs. An employee can informally train colleagues she/he has an immediate line relationship or more formally through small group activities, such as quality control circles.

Third, employees must demonstrate proficiency in a skill through an examination. Most large companies have an internal examination system; but, SMEs tend to depend on the Ministry of Labor's national skills test (see section on vocation training). Most companies provide a nominal monetary reward or pay increase to encourage continuous learning. And fourth, this skills formation process then leads to job promotion (Tachiki 1990). As employees improve their skills and experience job advancement, the company can relatively smoothly move up the technological ladder and introduce new products. Take the case of the television. The transition from black and white television to color television requires the introduction of new technologies and production methods. Most companies today would attempt to recruit engineers from the external labor market. In contrast, Japanese human resource management practices take an average skilled worker, trainings her/him up to technician status, and among the most talented encourages them to acquire the qualification of an engineer. When Japanese electric goods manufacturers were ready to take on the manufacture of color televisions they could draw on their internal pool of skilled expertise. This process of industrial upgrading has been a major factor in the competitiveness of Japanese companies.

### **3.0 GLOBALIZATION**

There are many definitions of globalization but for our purposes I refer to it as the socioeconomic consequences of the flow of goods, people, money, and information across national borders. In this regard, the diffusion of electronic commerce (e-commerce) is leading to changes in the industrial structure, corporate relationships, and the organization of work in Japan.

#### *3.1 Rise of the ICT Industries*

Globalization is creating new growth industries, resulting in changes in the industrial

structure of the Japanese economy. The information and communication technology (ICT) sector, for example, is based on the utilization of electronic equipment (equipment with built-in processors for digital information). From this perspective, the core definition of the ICT sector includes the telecommunications and broadcasting industry, which uses electronic equipment to transmit information, and the data processing industry, which uses electronic equipment to process data efficiently. This would also include both the service sector and the related equipment-manufacturing sector of each of these industries (MPMHPT 2002).

**TABLE 3: Information Technology Infrastructure**

	IT as % of GDP	IT Hardware Production, US\$M	IT Hardware Exports, US\$M	PCs per capita 0000s
<b>Japan</b>	2.06	53,727.73	26,753.25	286.94
Asia Pacific	1.81	147,257.30	126,349.40	30.72
United States	4.14	85,085.21	37,967.00	517.07

**SOURCE:** International Data Corporation 1999; International Telecommunication Union 2001; Reed Electronics Research, 2000 as cited in Tachiki et al. 2002

**NOTES:** IT is defined as “the revenue paid to vendors (including channel mark-ups) for systems, software, and/or services:

Japan has been late in getting “online,” however, the ICT industry in 1999 totaled 108.9 trillion yen, which accounted for 11.4% of total real domestic output by all industries. Average annual growth rate (1989 – 99) was 6.3%, faster than wholesale, twice as fast as construction, electronic machinery, and transport equipment. This figure is lower than the export-oriented industries; however it puts the ICT industries ahead of the construction industry for the first time. In short, the ICT industries are beginning to increase its significance in the industrial structure of the Japanese economy, requiring a shift in human capacity building that resonates with these changes (MPHPT 2001).

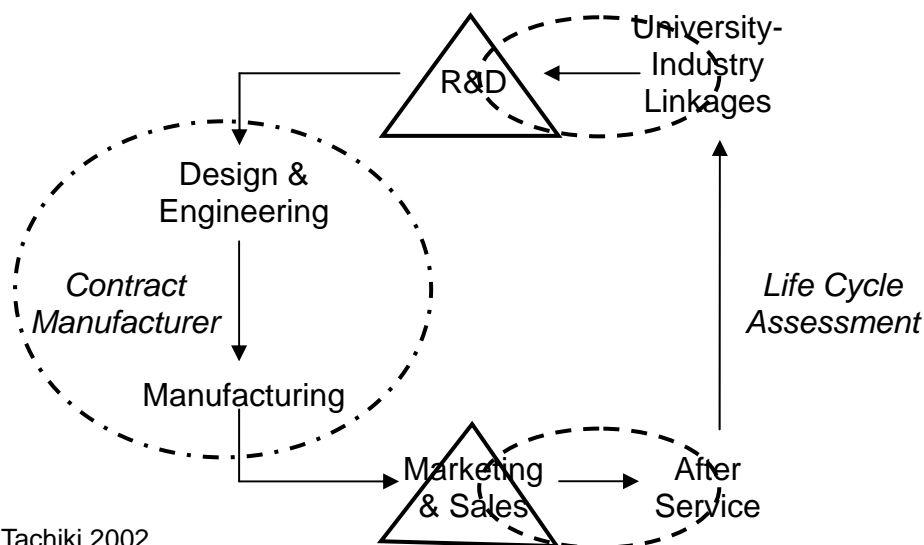
### 3.2 *Evolving Value Chain*

Globalization is exposing Japanese SMEs to mega-competition, leading them to reorganize and relocate their business activities. For large companies, these decisions are worked out in their business plan—an organizational document outlining a company’s policies and goals and the means for achieving those goals (Tachiki 2000). Very few SMEs have a business plan, but for those embedded in industrial clusters with a lead company, over the life of a product, they are subject to the rationalization activities of the lead company. This is the story of total quality management. A recent cost-cutting method is to outsource different business functions. Alternatively, other SMEs are strengthening their R&D to develop new products. Although these trends would attenuate existing manufacturer-supplier ties, mega-competition and high factor input costs (materials, labor, capital) are forcing many SMEs to seek other business options or go bankrupt.

For a select number of the SMEs, however, they are able to acquire capabilities—organizational, technological, market access—beyond their organizational boundaries (Borrus et al. 2000). This brings into relief the notion of global production networks. Global Production Network (GPN) refers to the spread of production across

borders that cuts across different stages of the value chain and may or may not involve equity

**FIGURE 4: Evolving Value Chain**



**SOURCE:** Tachiki 2002

**NOTES:**  $\triangle$  = core corporate functions;  $\text{---}$  = outsource functions

ownership. More SMEs are beginning to reorganize their domestic operations and relocate some operations overseas. This is done either by segmenting their product line and relocating overseas the low valued-added ones and/or segmenting their production process and relocating each segment to the most efficient production site. The large surge of SME foreign direct investments to China suggests they are reorganizing and relocating production (Tachiki 1999). From a human capacity building perspective, this implies that policies, institutions, and human resource development may require a more regional solution in the future.

### 3.3 Organization of the Workforce

Globalization is changing the occupational structure and content of work. The typical occupation in the post-war era has been a blue-collar job in the manufacturing sector. Nevertheless, employment has steadily declined in production occupations from 39 percent in 1970 down to 33 percent in 2000. Conversely, employment in professional and technician occupations has increased from six percent in 1970 to 13 percent in 2000. In addition, employment in clerical, sales, and service occupations have also increased. These aggregate trends are consistent with the rise in demand for “knowledge workers” as Japan shifts towards a “new economy” based on the Internet (Tachiki et al. 2002)

Behind these changes in occupational structure is a change in the organization of work. SMEs are finding they need workers who have not only the necessary physical skills, but also the mental skills to manipulate symbols and information. Employees, especially line managers and technical staff, for example, must work in virtual groups/teams, production is spread over global production networks, encompassing multiple time zones, countries, cultures, and languages, and the knowledge/service side of a product requires “people-skills.” This means greater flexibility in the place and length of work, leading to more non-regular

work opportunities—that is, part-time and temporary work. In 1999, a revision of the Temporary Employment Law reduced restrictions on employment agencies in dispatching workers to

**TABLE 4: Employment by Occupation and Work Status**

	1970	1980	1990	2000
<b>ECONOMICALLY ACTIVE POPULATION (0000s)</b>	53,259 (50,940)	57,251 (55,360)	64,133 (62,490)	68,369 (64,460)
<b>OCCUPATION</b>	%	%	%	%
Professional, technician	5.8	7.9	11.0	13.3
Administrative and managerial	2.6	4.0	3.8	3.2
Clerical	14.8	16.7	18.5	19.9
Sales	13.0	14.4	15.0	14.1
Service	7.6	9.1	8.6	10.5
Agriculture etc.	17.3	10.3	7.2	5.0
Production etc.	38.7	37.5	35.4	33.4
Other	0.2	0.2	0.5	0.6
<b>WORK STATUS</b>			%	%
Part-time			15.2	15.4
Temporary			---	7.6
Dispatched			1.1	4.0

**SOURCE:** ILO 2002; MHLW 2001

**NOTES:** Part-time workers are defined as persons working an average of 1 – 34 hours per week. The figures in parenthesis indicate the percentage of short-time workers among employees.

companies on a short-term contract. Consequently, in 2002, the number of non-regular workers quickly rose to 27.5 percent of the workforce, especially in SME with less than 99 employees (29 – 35%). In pace with these changes, then, human capacity building efforts will have to go online.

#### 4.0 SELF-SUSTAINING ENTERPRISES

Responding to the globalization of the Japanese economy, in the Small Business Research Institute's *White Paper on Small and Medium Enterprises in Japan* (2001), the Japanese government encourages SMEs to move from subcontracting relationships with the major large companies to becoming “self-sustaining enterprises”—that is, to achieve the capacity to “stand on their own two feet.” The document is strong on rhetoric but there is some evidence of changes in policies, institutions, and human resource development in Japan.

##### 4.1 Policy Reform

Recognizing the growing importance of the ICT industries in the Japanese economy, in the summer of 2000, then Prime Minister Yoshiro Mori inaugurated a 20 member “IT Advisory Council,” headed by Sony Corporation Chairman Nobuyuki Idei, with

representatives from the private sector, academics, and government, to make policy recommendations for the 21<sup>st</sup> century ([www.kantei.go.jp](http://www.kantei.go.jp)). The advisory council recommended that Japan's information technology (IT) policies should stand on four pillars:

- **High-Speed Network.** The primary objective is to create a high-speed network with the following objectives. First, optic-fiber networks reaching 30 million families within 5 years. Second, open access at a competitive price. Three, protection of privacy and security
- **E-Commerce.** Recognizing the shift from brick-and-mortar business models to the use of virtual space, propose using Internet to increase the B2B market by 10 times and the B2C market by 50 times
- **E-Government.** Make government more accessible to citizens by (1) conduct public administration business online, (2) disclose more public information online and (3) government procurement transparent and online
- **E-Learning.** First, promote computer literacy, with a 60% connection rate by 2005. Second, strengthen IT education in K-12, post-secondary education and general public and third, increase the number of Japanese and foreign knowledge workers with advanced degrees

This major policy statement set the tone for the first revision in the Small and Medium Enterprise Basic Law in the past 27 years, which was enacted in December 1999, to highlight three new basic principles to encourage “developing and growing a wide range of independent SMEs for greater economic vitality” (METI 2002).

- Supporting self-help efforts for business innovation and start-ups.
- Strengthening of management base.
- Facilitating apt responses by enterprises for abrupt environmental change.

The Ministry of Economy, Trade and Industry and the Small and Medium Enterprise Agency have jointly developed these policies, and follow-up and implementation is tasked to the JASMEC(see the section 1.2 on SME Promotion).

#### 4.2 *Institution Building*

Although Japan got online to the Internet in the mid-1980s, the formal education system has only recently become active in teaching students computer skills with the adoption of the government's e-Japan strategy, a national plan to become an international player in the “new economy.” Schools and companies have done an excellent job in preparing workers for an industrial society; however, with their capacity to respond to the emerging shift towards information society is less distinguished. In the wake of the *IT kakumei* in Japan, the education system now faces the challenge of improving the low information literacy—that is, the ability to use information and communications equipment—rate of students. The record to date is rather dismal. The personal computer penetration rate is 14 per school at the elementary level, 34 at the junior high school level, and 44 at the high school level. Consequently, Japanese schools have made modest progress in accessing the Internet for educational purposes, where it is 49% for elementary school, 68% for junior high school, and 80% for senior high school. Encouragingly, two-thirds of the teachers can operate computers, but discouragingly only one-third can teach by computer (MEXT 2001).

Moving to the vocational school level, Japan has a well-developed training system; but

the curriculum is geared towards certification in 33 skill areas of which it-related skills are not represented nor are there many schools dedicated IT training. JASMEC operates the Institute for SMEs Management & Technology (ISMET) at nine locations throughout Japan. The main training courses are (1) Personnel training of SME support organizations (capacity building), and (2) Fostering SME business managers and supervisors through exemplary companies, “frontline” expertise, and innovative curriculum

At the company level, since the 1990s, the diffusion of the Internet to Japanese companies has increased from less than 10% to 96% for “enterprises” (>300 employees) and from 6% to 45% for “establishments” (<300 employees). Among large companies (>1000 employees), 90% have installed a LAN (local area network) and 40% had constructed an intranet system. There is a movement towards more online business; however, for SMEs it is still a small percentage of overall business activity.

## 5.0 REGIONAL CHALLENGES

The challenge for SMEs operating in the Asia-Pacific is to achieve a competitive edge in the global economy by integrating the management of their business across national borders. Japanese activities in the region could be one foundation to build capacity for human resource development but only in cooperation with the PECC economies.

### 5.1 Japanese HCB Activities in Asia

Existing international human resource development programs sponsored by Japan include the Japan International Cooperation Agency (JICA); Japan Overseas Development Corporation (JODC); Association for Overseas Technical Assistance (AOTS); Overseas Vocational Training Association (OVTA); Japan International Training Cooperation Organization (JITCO); Pacific Resource Exchange Center (PREX); Asian Productivity Organization (APO).

The Japanese government has been active in promoting human capacity building of information technology (IT) that allows the flow of goods, people, money, and information. For example,

- People = Asian Common Skill Standard Initiative for IT Engineers and University based on the “Information Technology Engineer Examination” used in Japan since 1970; Mobility in Asia and the Pacific (UMAP) to support student, teacher, and staff exchange programs in the region; AUD/SEED NET (ASEAN University Network/Southeast Asia Engineering Development Network);
- Information = ASEAN SchoolNet Pilot supporting the e-ASEAN Task Force activities; Asia e-Learning Initiative to create an “Asia e-learning network” to promote effect skill development and enhance industrial competitiveness; Japanese Funds-in-Trust for Promotion of ICT/IT in Education for All used to facilitate ICT in education for teachers;

At the company level, Japanese companies transfer *process technologies*, such as just-in-time/kamban production system, quality control/assurance methods, and human resource management practices.

### 5.2 Regional Cooperation for HCB

A sharper focus is needed to prioritize and allocate existing resources (money, time, human, space) to build the human capacity of SMEs. APEC arranges human capacity building action plans by themes: policy environment, human resource development, financing,

technology, market access, and access to information (APEC 2000; 2001; 2002). PECC, however, should take the facilitation of the flow of goods, people, money, and information across national borders by SMEs as its point of reference. This will bring regional activities for integration closer in alignment with progress in trade and investment liberalization and facilitation (TILF).

PECC should build on its founding strength based on a trilateral cooperation among government, private, and academic sectors. Each contributes a significant piece of the puzzle to the human resource development picture. Academics bring curriculum development and teaching skills; the private sector provides the technology (machinery, management know-how); and the government is empowered to set policy and institutional framework.

These two simple points could form the basis for human capacity building emanating from the Pacific Economic Cooperation Conference.



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