Report of the Study Meeting on Creative Entrepreneurship: Value Creation

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This report has been edited by Prof. Tan Wee Liang.

Integrated Summary

INTEGRATED SUMMARY

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BACKGROUND

It is well acknowledged that entrepreneurship is a key driving force for national productivity competitiveness. Yet it is not the existence of new business start-ups that contributes to innovations and higher value-added. These results arise when the enterprises innovate and exploit opportunities. New start-ups may account for a fraction of these entrepreneurial developments. Yet many innovations arise from firms that continue to be entrepreneurial. These originated as start-ups but have built entrepreneurial teams, continued to seek and exploit new opportunities and infuse entrepreneurship in their corporate ranks.

Value creation distinguishes mediocre corporations from great ones like Hewlett Packard, 3M and Kao from others that eventually disappear from the corporate firmament like Westinghouse and ITT. Within enterprises, there is a need for creative entrepreneurship and value creation. Some enlightened corporations have fostered value creation within their organizations by providing opportunities for innovation, intra-organization venture financing and ownership in employee-initiate projects. More needs to be done in this area to motivate the involvement of incumbents in a corporation through tangible and intangible means.

The APO study meeting on Creative Entrepreneurship: Value Creation was held in Taipei to examine the value creation process, the elements that facilitate value creation and approaches that can encourage it in corporations and employees, and policy considerations that may lead to greater innovations in APO member countries.

THE VALUE CREATION IMPERATIVE[1]

The need for SMEs to focus on value creation is even more critical in these days of globalization and change. In the days before the knowledge based economy, firms could afford to pay less attention to value creation. They could get by with the products/services they had to offer. It was less of a critical issue in the days of relative stability in the business environment. However, it has become a fact of life that in the 21st century, the state and rate of change is a constant. Firms that engage in value creation have been known to enjoy a share price premium over less innovative firms. Engaging in value creation processes has enabled some companies to become leaders in their respective fields.

Value creation takes various forms. It includes inventions, innovations and processes that firms engage in that create value for the firm and for society. Value is created when the outcomes of the firms' activities (inventions and innovations) make a positive contribution to the firms' economic agenda and provide benefits to society. Society in turn benefits when customers, communities and other stakeholders find usefulness (utility) in the products, services or processes the firms provide. A new venture

[1] See Tan Wee Liang in second resource paper for further details.

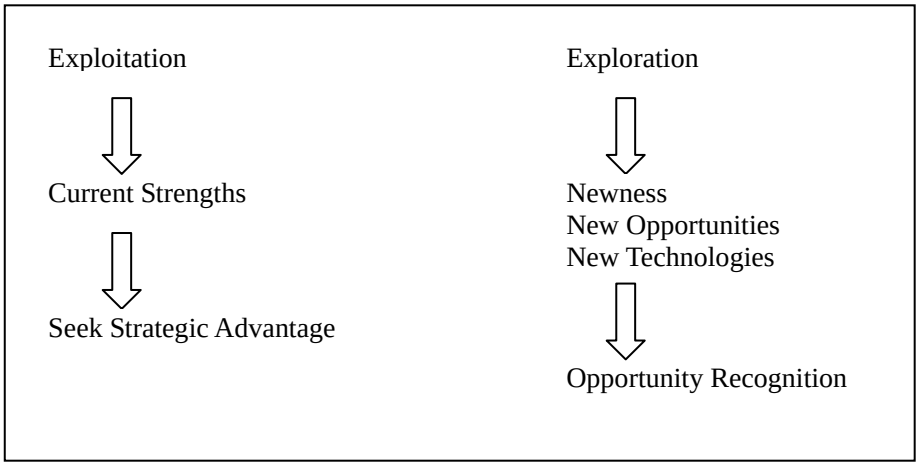
could create value through its new computer operating system as Bill Gates did when he produced Ms DOS.

Value creation can take place in new business startups and technology-based enterprises, in growing SMEs and in large corporations. SMEs are familiar with value creation at their startups because they would not have any customers if they did not create value and offer it to their customers. Unfortunately, many of them after surviving the startup phase engage in incremental value creation in the forms of existing market extension, product improvement/enhancements, customers' relationship interface and quality improvements. They need to engage in all forms of value creation working with others or by themselves. In addition, they need to decide whether to focus on narrow or wide scope of employee involvement.

Table 1: Forms and Means of Value Creation

Incremental →			**Radical**					→
Productivity Improvements	**Market Expansion**	**Product Refinements/ Enhancements**	**New Products/ Services**			**Business Model Innovations**	**Internationalise**	
ncremental changes in operation, production,	Marketing & Sales	Marketing dept	In-house developments -R & D unit - team	Cooperate	Acquired from other companies	Transform the organization	Self	Cooperate

SMEs need both exploration and exploitation. They might only focus on their existing activities and leverage on their competencies and not explore new opportunities or ground. They only worry about new opportunities when the product/service life cycle of their offering is on the decline or when the market potential for them is at its peak and competition may be stepping into the fray.



NATIONAL EFFORTS AT FACLITATIONG VALUE CREATION

Innovations, Incubators and Financing

To encourage value creation, national efforts need to be made to motivate new startups, innovations and assist value creation in existing enterprises. To foster idea

generation and business innovations, competitions could be utilized. In the Republic of China, value creation is engendered through competitions among the brightest brains in universities such as the Technology Innovative Competition (TIC), Young Entrepreneurs of the Future (YEF), TIC 100 Technological Innovation Award, and WEWIN Entrepreneur Awards[2]. They have led to positive benefits: facilitating teamwork, combining theory with experience on the part of the participants, enabling entrepreneurial guidance and the transfer of experience from mentors to teams and learning from the experience, channeling of knowledge and resources, and increasing the exposure of new firms.

These efforts need to be taken in conjunction with the provision of an enterprise eco-system. The elements of the enterprise eco-system in the Republic of China comprise the venture capital industry, financing for SMEs with growth potential, incubators and government policies and regulations. The venture capital industry has been growing to fund innovation and value creation in the semiconductor, opt-electronics, communications (e.g. mobile phone technologies and manufacturers), biotechnology and information (monitors, motherboards, scanners, wifi equipment for the home) industries. A number of the venture capitalists have evolved new forms of financing. IncuVestor is one such venture capitalist in the Republic of China. It encourages value creation through co-entrepreneurship.[3] It pioneered a new entrepreneurial finance model combining venture capital and incubator functions. This model meets the unique needs of the situation in the country where incubators cannot invest in tenant firms while these firms need the seed financing. At the same time, there is little seed financing by venture capitalists. The other handicap with traditional incubators is the tenants do not receive any advice from incubator staff as they are not entrepreneurial and do not function as venture capitalists in giving advice and monitoring. There is also insufficient staff to help the tenant companies. Frequent incubator staff turnover also reduces the efficiency of incubators.

The new model of business incubation, called the IncuVestor® model, is a combination of venture capital and incubator, where the unit acts both as investor and venture capitalist, integrally involved in the tenants. The manager of the IncuVestor® units will be trained to work along the entrepreneurs so that IncuVestor® & Incubatee are co-entrepreneurs [Co-Entrepreneurship].

Facilitating Value Creation in SMEs

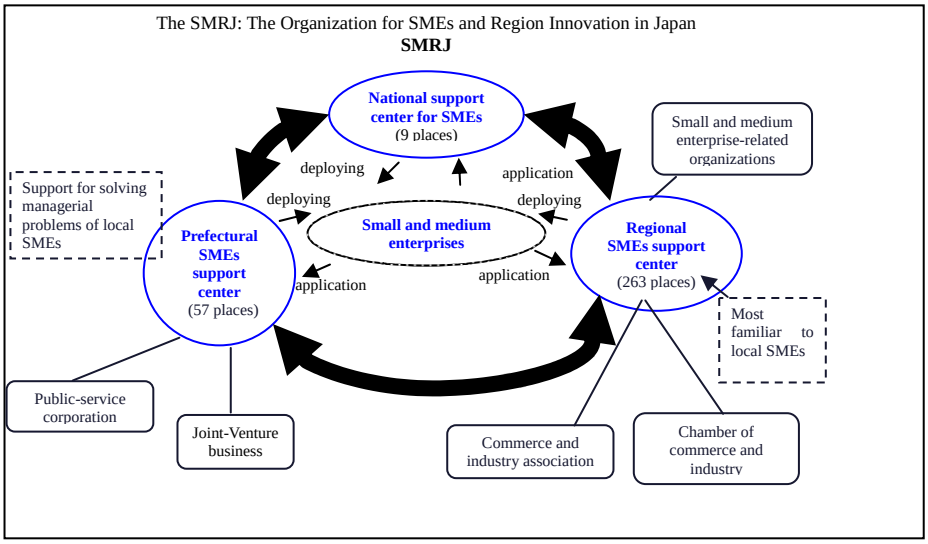
SMEs seeking to create value need to be customer focused vision, to engage in continuous innovation, and to focus on quality. They need to develop effective leadership and to cultivate human capital. They may need to build and sustain a brand. Achieving velocity and virtuosity through knowledge are critical. They need to overcome impediments SMEs seeking to be innovative may face:

- Lack of financing
- Lack of education & training for entrepreneurship
- Negative cultural & social attitudes
- Burdensome regulations
- Inadequate infrastructure
- Inefficient government programs & guidance
- Undeveloped R&D transfer mechanism

[2] See Benjamin Yuan in the fourth resource paper for fuller details.
[3] See Lee-Lin Lee in the fifth resource paper for fuller details.

Policy makers should seek to promote access to financing, facilitate firm entry & exit, deploy government support programs to address financing, entry and exit, and encourage an entrepreneurial spirit in society. They need to give greater priority to basic research, work on the effectiveness of government funding, make use of competitive funding and evaluation of projects, address the new challenges in intellectual property regimes and remove barriers and regulations. They need to provide assistance provided to SMEs to enable their value creation activities.

In Japan, there are approximately 330 Public-Sector Business Support Centers for SMEs/Venture businesses in Japan.[4] Each center is intended to give advice on diverse management issues faced by SMEs/Venture businesses, who are tackling high-level management tasks such as public offering, fund-raising through direct financing, and introducing new business area etc.



Business experts are the main resource of these national support centers. The experts' areas of expertise span the following areas:

- Corporate Policy and Business Planning
- Entrepreneurship Development
- Financial Management
- IPO: Initial Public Offering
- Production Management, Kaizen, 5S , JIT , Quality Control
- Logistic, Physical Distribution, Material Handling
- Marketing Management
- Personnel Management, HRD & Training
- IT/Internet/Intranet
- Technology Development & Research

The centers provide three types of the expert services:

- Advice over the counter

[4] See Okuyama in the third resource paper for fuller details.

- Lectures and Seminars
- Hands-on Support by deploying experts
- When a SME/Venture business make a request, a center will deploy experts equiped with knowledge and capabilities appropriate for that SME.

There are a good number of successes with Japanese SMEs moving along the growth path to a listing on the Japanese stock exchange. To enable SMEs to create value, they need funding for upgrading, training, branding, R&D, etc. They will benefit from facilitation through experts/consultants in the areas of venture investments, networking opportunities, incubation, testing & R&D facilities. Governments should provide infrastructure such as self-contained industrial estates for SMEs or industry sector clusters.

The participants felt that the role of governments should be restricted to policy and funding, not to participate directly in everyday operations. Governments should finds ways to leverage on existing resources e.g. implement policies involving industry, and academia. There should be greater coordination between central and local government machinery where implementation is concerned: policies must be in synchronization.

In setting policies, governments should remove obstacles (e.g. license application), give awards, and leverage on existing resources (e.g. training, testing and R&D). They should avoid having too many rules, getting involved in operations or building new systems from scratch.

The meeting also recommended some funding principles proposing that there be more 'lenient' sources of funding that are simple and quick to access addressing financing for innovative ideas. Governments should also establish incubators and develop a vibrant venture capital and angel industry to support value creation.

Governments should also enable manpower development for SMEs particularly in the areas of technology and business management with the training be provided by existing training providers such as universities. Incentives should be provided to SMEs defray the training costs.

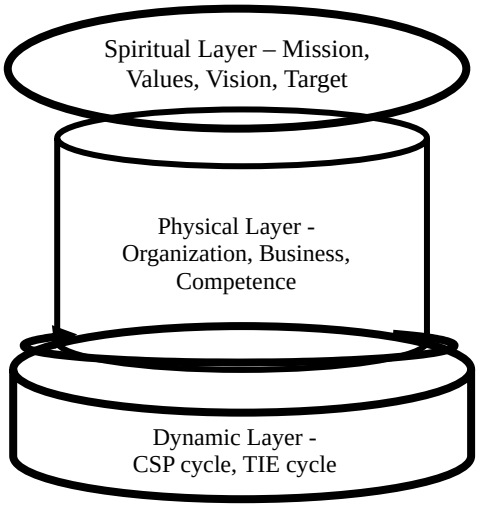
Another area that governments could work on is access to market information such as market barriers, export terms, competition and substitutes.

Corporate Entrepreneurship

Turning to the larger corporations, innovation and value creation is possible but it may require greater discipline, if the intention is for the value creation to be undertaken by all the rank and file in the corporation. Even if such efforts were limited to the middle managers, there is a need for the whole organizations elements to be knit together towards a common understanding of the goals of firm. The members of the company need to understand share the values and philosophy that will enable the company to attain its goals of innovation

In the Republic of China, Jackson Chang of Inventec developed his company as it grew over the years continuously managing resources to evolve to fit the changes of environment to become even stronger. It involved linking the three layers of the firm as depicted in the model below: the spiritual layer, the physical layer and the dynamic layer. The mission, vision, target and common values represent mutual consensus for all individuals in the enterprise organization and represents the spiritual layer. In the dynamic layer, processes and operations that enterprise organization normally applies plus performance measurement system and the knowledge management system that enterprise regularly adopts are bases of the dynamic layer. In the dynamic layer, processes and operations that enterprise organization normally applies plus performance measurement

system and the knowledge management system that enterprise regularly adopts are bases of the dynamic layer. An enterprise will be able to get benefits by leveraging the benefits of integration of these three layers in management and business. To facilitate this integration and growth, there is a need for the policy makers to ensure that the growing enterprises learn the best practices from each other. There is a continual need to professionalize the organization and to modernize management practices.



CONCLUSION

SMEs should collaborate, pool resources, work together in the areas of R&D, bidding for major government projects and overseas joint ventures. Mutual interests/partnerships with universities/research centres, chambers and trade associations would enable them to create value. SMEs must learn and innovate. To this end, they must seek to implement relevant best practices, bench mark and measurement their progress against leaders in their fields. For this purpose, they may need to educate and train their employees. SMEs must adopt/upgrade technology, tap into available government funding for this purpose and engage in better financial management so that they can grow and expand. They will need to grow competence and capability so as to export and internationalize. They also need to introduce necessary organizational changes.

The meeting suggested the APO projects be conducted to study the capabilities & training needs/gaps of SMEs, share best practices of value creation with APO member countries, and to formulate and recommend government policies/initiatives that support SME development and growth.

To assist SMEs with organizational changes for value creation, APO Value Creation seminars could be organized to introduce SMEs to the benefits of value creation. These seminars could cover product innovation, product improvement, process innovation and new technologies. The APO could consider training programs targeted at SMEs in the necessary value creation skills such as branding and technology scanning and adoption. The APO should design a training program that can be diffused across the APO member countries so that NPOs can train owner-managers of SMEs to reconfigure their organizations to suit new environments and to align their firms for value creation activities.

Resource Papers

ORGANIZATION EVOLUTION AND BUSINESS DEVELOPMENT (THE CASE OF IAC)

Jackson Chang
Inventec Appliances Corp.

INTRODUCTION

Evolution of Species and the Human Race

Whenever we talk about evolution, the most memorable name in our brains would be Charles Darwin. Darwin's theory of evolutionary selection holds that variation within species occurs randomly and that the survival or extinction of each organism is determined by that organism's ability to adapt to its environment. He sets these theories forth in his book called, "On the Origin of Species by Means of Natural Selection, or the Preservation of Favored Races in the Struggle for Life" (1859) or "The Origin of Species" for short.

For all of the revolutionary history of species, it has taken millions and millions years for evolution from plants to reptiles, then to mammals, and finally to human. The reptiles had keen senses and well-developed brains that endowed them with complex behaviors. So they spread over every continent and diversified into numerous species. Mammals are more intelligent than reptiles because of their cortex. Science has discovered that an animal gains an ability to predict the future if it has a cortex on the brain. With ability of prediction, the animal can behave more intelligently. The human brain has a relatively much larger cortex than that of any other mammal, therefore it has a massive memory capacity. It is constantly predicting what you will see, hear, and feel, mostly in ways you are unconscious of.

Humans have a large cortex which enables prediction and a powerful memory system. As a consequence, we can learn a lot of structure of the world within our lifetimes, and we are the only animal that may communicate with many other humans via languages. The combination of a large cortex and ability to use language has led to the spiraling success of our species.

There are no other species that are more intelligent than humans on the earth. So humans are able to control, manage and utilize most of the available resources. Compared with ambition of humans to improve life and fulfill vision or dream, the evolution speed of humans is relatively too slow to overcome all limitations on humans to achieve what human being wants to do. From my perspective, an “organization” also evolves like the human race. It gathers humans together to work and perform more efficiently. The acknowledgement of “organization” as an evolution of the human race is conceptually acceptable. Certainly some animals also have very premature styles of organization but they can not compete with human organizations.

Evolutions of Species and Human

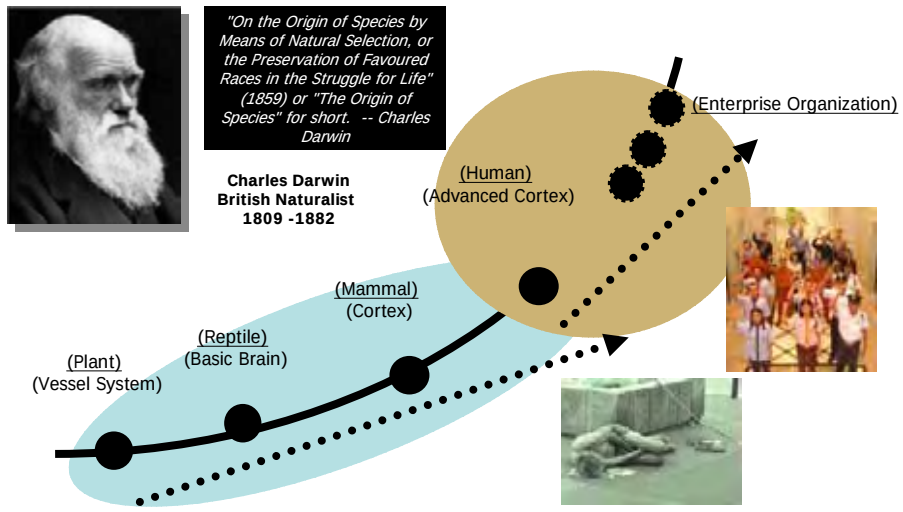


Figure 1 : Evolutions of Species and Human

Re-evolution of Human: Enterprise Organization

An enterprise, mainly in pursuit of economic merits, is a kind of organization that perfectly matches the criteria of evolution - the survival or extinction of each organism is determined by that organism's ability to adapt to its environment. The critical surviving factor is nor strength but fitness for enterprise as well. However, fitness of an enterprise is very often a factor for helping this organization to become strong. And if the enterprise is strong, the power and ability to manage more resources would also very probably give this organization a better position to adjust it to fit the environment changes. So whenever talking about re-evolution of human – evolution of enterprise, it is a very normal way for an enterprise to grow to become strong, and continuously manage resources to evolve to fit the changes of environment to become even stronger and stronger.

According to the surveyed information by Fortune Magazine (USA) and Common Wealth Magazine (Taiwan) about manufacturing sectors in the United States and Taiwan, there are some characteristics of industry can be seen from them.

- In year 2003 in the U.S., revenue and profit of the top 10 companies are 19.2% and 21.6% of all the top 500 companies in manufacturing sector. These ratios raise to 20.1% and 22.7% respectively in year 2004.

- In year 2003 in Taiwan, revenue and profit of the top 20 companies are 35.5% and 53.3% of all the top 1000 companies in manufacturing sector. These ratios raise to 38.0% and 54.5% respectively in year 2004.

The revenue and profit data reveal the following interesting characteristics:

- The winners take lion shares of the industry revenue pie.
  The top 10 companies stand for 2% in number of the top 500 companies in the U.S., while they have about 20% of the revenue share in total. In Taiwan, the situation becomes more critical. The top 20 companies also stand for 2% in number of the top 1000 companies in Taiwan, while they have more than one-third (33%) of the revenue share in total.

- The winners take even more shares in profit pie than in revenue pie.
  The top 10 companies stand for more than 20% in profit share among the top 500 companies in the U.S., while the top 20 companies stand for more than 50% in profit share among the top 1000 companies in Taiwan. The ratios are higher than the revenue shares respectively.

- Revenue and profit shares are increasing of the top companies among the industry.
  The ratios of revenue and profit shares of the top 10 (in the U.S.) and the top 20 (in Taiwan) increase from year 2003 to year 2004. We see this is the tendency that the stronger is becoming stronger and stronger.

There are many weak points for humans. For example, every human has to sleep no matter how long it takes. Another example, a human can not present simultaneously in two different places. The enterprise which gathers many individual persons is able to compensate almost all the weak points that any single human has. For example, the enterprise organization can operate 24 hours a day and 7 days a week without any interruptions based on management arrangement. The enterprise can operate in different locations. If we consider the enterprise as an unit when compared with the human, this unit actually has drastically overcome almost all limitations on a human. Therefore it is rather clear that we could recognize that an enterprise evolves just like a human from evolution point of view.

All animals compete for foods and sustenance of lives. Humans have many advantages on intelligence, especially the usage of language to share and accumulate experiences with the other humans. As a result, humans control and manage a biggest share of resources available on the earth. The stronger companies in the industry are in similar situations comparable to humans among all animals. The stronger companies have the lion shares of revenue and profit. Hence they control and manage major portion of economic resources available in the industry and the society.

Necessities of Evolution for Enterprise Organization

Growth is the very way for any enterprise to survive and becomes strong. It is not guaranteed that growth is always safe. However the sustaining ability is normally higher when the scale of enterprise organization becomes bigger. The scale of an organization means resources it manages, or the revenue it generate, or the profit it makes. However when the scale of organization becomes bigger, it always has the problem of lower efficiency for internal communication. To overcome the communication problem, company normally put more resources on management. As a consequence, the management cost becomes higher in parallel with the fact that scale of company becomes bigger.

There are some very common phenomena happening in today's organization.

- Resources are distributed in different locations and scale of resources is bigger and bigger.
- Values of humans vary in a bigger span than before. Values variation becomes a very critical issue in management of organization.
- Market demands enterprise organization being more flexible, speedy and innovative.

One can see that it is a paradox that enterprise (normally) has to grow to some suitable scale for long term survival, but there are problems of communication, which stems from resources distributions, value variations and market challenges at the same time as the enterprise scale becomes bigger. This is a charm for any enterprise from small to big. If the enterprise is able to overcome this problem, it will successfully evolve from weak to strong. On the other hand, the enterprise may fail in the process of survival if it can not overcome the mentioned problems. No matter how the enterprise performs, there is no other choice for an enterprise but to evolve. Among many, healthy growth is a very common way of evolution for survival.

THE KNOWLEDGE ECONOMY AND ENTERPRISE EVOLUTION

Before going into physical plan and execution of evolution for enterprise, it is worthy of understanding about characteristics of knowledge economy, which have been addressed and explained by Peter Drucker in many of his articles.

The characteristics observed and summarized by Peter Drucker are:

- Technology development decreases the dependence on traditional production factors
- Digital network releases restriction and influence of time and distance
- Values of multiple dimensions erode foundation of standardized and centralized management style
- Market requirements of personalization urge innovation and flexibility
- Disappearance of boundary of countries and emergence of global village
- Environment preservation has become a common regulation of all human society

The points mentioned by Peter Drucker are quite general. However we may classify these characteristics into three categories. Using these categories, we may have a much clearer picture how an enterprise evolves to match the trends in the knowledge economy.

- Production factors: These factors include the two trends technology development and digital networks. Technology development decreases the enterprise dependence on traditional production factors and digital networks releases restriction and influence of time and distance. We may consider technology development and digital networks as production factors in helping the enterprise evolve to become more efficient in communications and to achieve better management results on distributed resources. Enterprises with investments on adoption and application of technology development and digital

networks will be able to differentiate themselves from the other companies which do not have implemented them.

- Demand factors: The factors include three trends: "Market requirements of personalization urge innovation and flexibility", "Disappearance of boundary of countries and emergence of global village" and "Environment preservation has become a common regulation of all human societies". Enterprises have to confront these three factors in order to capture market and adjust to environment changes. Products or services provided by enterprises with innovation and flexibility based on global and/or regional consideration and environment preservation requirements should gain greater acceptance by customers in contrast to other products and services that do not.

- Transfer factor: In the knowledge economy, "Values of multiple dimensions erode foundation of standardized and centralized management style" in an enterprise. It is important for an enterprise to recognize and acknowledge the different values from individuals inside the organization. A skillful management style is needed to establish the necessary processes to transfer and consolidate the different values among the people in the enterprise towards effective enterprise execution. The balance of care of the individuals' different values and management of the consolidated execution momentum is not an easy task. Certainly there is no unified single solution to resolve this issue. However every enterprise has its specific flavor in keeping the balance. Enterprise able to handle the transfer factor well through its management style has a better chance to be successful in enterprise evolution.

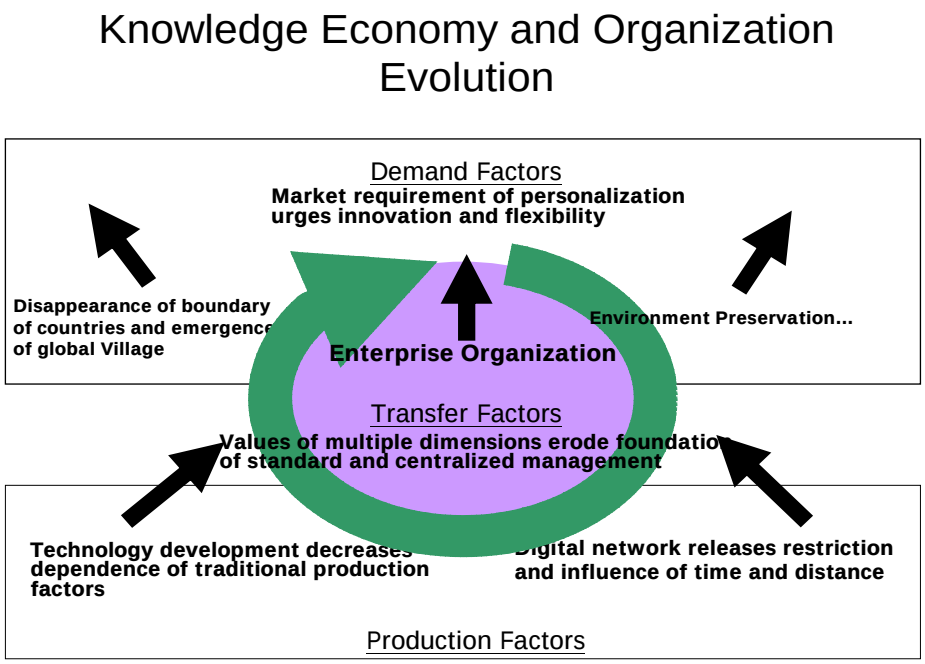


Figure 2 : Knowledge Economy and Organization Evolution

As a result, we may summarize that as an enterprise evolves it has to cope with the trends of knowledge economy, which can be classified into production factors (that organization has to adopt and apply), demand factor (that organization has to match and capture) and transfer factor (that organization has to manage and balance).

BUILDING UP A MODEL OF ENTERPRISE ORGANIZATION

Five Forces

Before building up a model of the enterprise organization, let us view the industry environment first. In general, the most important party for any enterprise is its "customer". The customer receives products and/or services from enterprise by return of revenue. An enterprise is able to make profit from revenue by keeping its operation efficient and competitive. The customer is the one whom any enterprise should pay most of its attention to. In addition to "customer", "supplier" is also another key party for any enterprise. The enterprise obtains materials or information from suppliers and introduces value-added by transforming them into products and services to be provided to customers. According to Michael Porter, there are other parties, for example: competitors, newcomers and the replacement, representing forces influential to the industrial environment and hence the enterprise. The customer, supplier, competitor, newcomer and the replacement firm are five major forces that shape the industrial environment and affect the enterprise.

Core of an Enterprise Organization – Physical Layer

Under the industrial environment, the enterprise is formed by many individuals who are unified together to have business transactions with the others by providing products and services. With revenue as the base of business, the enterprise is able to support operation expenses and pay salaries to individuals by squeezing profit out of revenue.

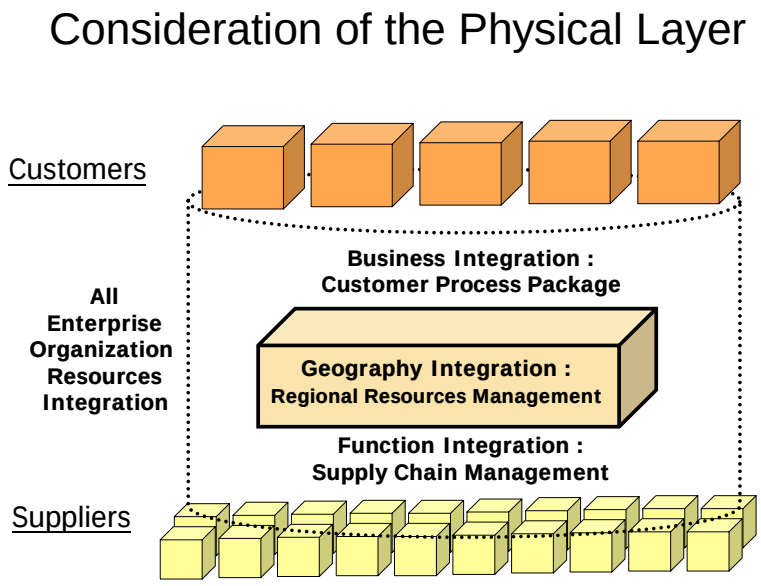


Figure 3 : Consideration of the Physical Layer

The profit earned is different for different enterprises. The better (or stronger) enterprises could make more profit than the other worse (or weaker) ones. Certainly the success or failure of an enterprise is related to opportunity and fortune. However, every enterprise is inevitably dependent on its competency. Good opportunity and fortune can enable enterprise to survive and grow, but the key factor for long term sustainability is competency of enterprise.

Therefore core of any enterprise could be: (1) the organization itself – it is mainly about the configuration how individuals are organized and managed, (2) the business that enterprise owns to have relationships with the other parties in the industrial environment, and (3) the competency that the enterprise uses to generate profit (or added value) to pay for operation expenses and individuals' salaries. We consider these three aspects as the core of any enterprise, and under the term of "physical layer" of an enterprise.

Mutual Consensus of Different Minds – Spiritual Layer

No one can ignore the importance of mutual consensus with the other humans in an enterprise. As long as enterprise gets bigger, the communication efficiency would become lower and the value varieties distribution becomes wider because different resources and different mindsets expand with scale of individuals. However the enterprise could still manage the differences by integrate on the spiritual level. A successful enterprise is normally able to appeal for individuals' consensus by a clear definition of mission for the organization, vision to the future, target of the organization. Even more, it can also unify value varieties of individuals into common values for all.

The mission, vision, target and common values represent mutual consensus for all individuals in the enterprise. Since participation of individuals in any enterprise is not solely and simply for money or financial purpose, the spiritual layer, which can evoke good wills of individuals so as to consolidate different minds to achieve a mutual consensus, stands for a very significance spiritual foundation of the enterprise to act in the environment.

Territory that enterprises could reach - Dynamic Layer

The strength of an enterprise is not only determined by the physical layer but also determined by the spiritual layer. Moreover it also has very close relations with the dynamic layer. In the dynamic layer, processes and operations that enterprise normally applies plus performance measurement system and the knowledge management system that the enterprise regularly adopts are the bases of the dynamic layer. Two enterprises with the same physical layer and spiritual layer might have very different business results if their dynamic layers are different. The enterprise with very proactive and dedicated atmosphere in processes and operations, or with interactive performance measurement system, or with very organized and efficient knowledge management system, should have much better business results than the other without good processes and operations, or performance measurement system, or knowledge management system.

Drawing on my managerial experience, I have decided to divide the dynamic layer into two Levels. The first level we call the CSP Cycle (Core Competence – Strategy and Execution – Performance Measurement) which applies as the internal management activity for any enterprise. The second level is called TIE Cycle (Company Target – Industry Analysis – Value Chain Evolution) which refers to the enterprise's approach to industrial competition/cooperation in its industrial sector.

The Three-layer model of enterprise organization

In summary, the three-layer enterprise model is presented here. It includes: physical layer (organization itself, business and core competence), spiritual layer (mission, vision, target and common values), and dynamic layer (CSP cycle and TIE cycle). With physical layer in the middle, with spiritual layer on the top, and with dynamic layer in the bottom, an enterprise will be able to get benefits by leveraging the benefits of integration of these three layers in management and business.

Model of Enterprise Organization

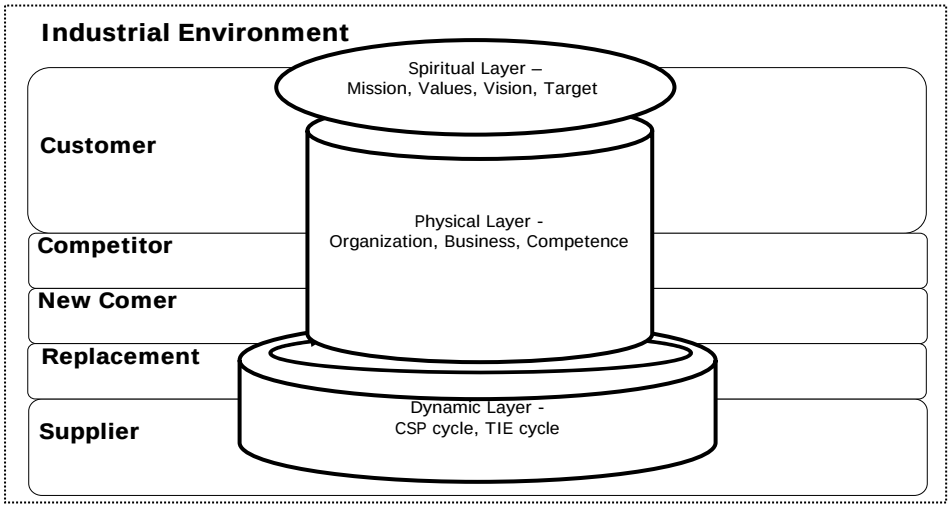


Figure 4 : Model of Enterprise Organization

Consideration and Implementation of the Physical Layer

The basic reason for any enterprise to exist in the world is to create added value in the value chain. Any enterprise that does not add value will not last long. An enterprise can create value by generating "efficiency" in either its internal operations or its transactions with the other parties in the value chain.

If the enterprise is in the manufacturing sector, it is normal that it might have many (i.e. hundreds or thousands of) suppliers. If the enterprise is in the service sector, it is also normal that it might have many (i.e. hundreds, thousands, or even millions of) customers. In dealing with a very complicated matrix of such a big number of suppliers or customers, it is a key challenge for any enterprise to keep competitive by enhancing its operation and transaction efficiency based on its management.

The applications of updated IT tools, such as computer, communication and networking facilities plus many data processing and operation management software, certainly will help to improve the operation and transaction efficiency. However more important determinant factors are management processes of organization. The IT tools are only used to help management processes. They are the supporting factor influencing success or failure of efficiency improvement.

One characteristic of current enterprise organization is that the resources distribution becomes wider and wider over different locations as the business scale grows. More resources are expanded in different locations to best utilize the advantages of resources strengths in different areas. As mentioned in the above, resources expansion will bring in the problem of communication efficiency. With greater expansion, the total operation and transaction efficiency will naturally become lower and lower if the organization has no better measurements and approaches to remove the barriers of communications among different locations, different departments and different levels of individuals.

The purpose of constructing an enterprise is mainly for serving customers, so it should be designed to simplify transactions with customers and increase the efficiency of operations for products or services provided to customers. Under such consideration, some customer friendly approaches, such as: single contact window for any customer, customer oriented process package designed specifically for any customer, EDI or other web based information services…etc., should be put as priority items during the development of the enterprise.

To enhance the operation and transaction efficiency with many suppliers, it is also necessary to have a good supply chain management system. Some major approaches are: qualification of new suppliers, maintenance of qualified vendor list (QVL), improving program of supplier quality, improvements on cost and delivery, and implementations of vendor managed inventory (VMI) … etc.

In addition to interactions with external parties, such as customers and suppliers, there are complicated information, materials and goods interactions within the enterprise. These interactions are normally managed by some fixed flows normally called processes. In considerations of resources in different locations and different enterprise organization parties, the processes will become much more complicated when they are extended from one location and/or one party to many locations and/or many parties. For any single process, it would be very common to have more than one functional unit to be involved with.

There are some basic styles of constructions of enterprise organization. The first style of them could be geography oriented organization which layouts its individual divisions or departments based on regional distribution considerations and has headquarter to manage and integrate all regional resources in different geographic locations. This style of organization is very popularly applied in some sales and service oriented enterprise organization for convenience of serving customers directly. The second style could be function oriented organization which partitions its resources into some units based on individual functions. Each function will manage and be responsible for a part of the whole process for generating value. It has an integration unit on top of some function units as a command and management center. This style of organization could be adopted in organizations in more stable business or industry. The third style could be product or service oriented organization which divides its resources in direct supports to products or services. Each business unit is responsible for a category of products or services by integrating resources with different functions or distributed in different locations. The fourth style could be customer oriented organization which arranges its resources based on needs of individual customers. There are customer (account) based resources and processes for serving each customer. For any enterprise, the construction style could be mixture of some of the above basic styles. It is totally depending on trade-off and decision of enterprise to determine the most suitable combination.

As an enterprise, IAC has resources in Taiwan, China and the other countries, has activities of ODM (Original Design Manufacturing) and OBM (Own Brand Marketing) in

the manufacturing sector, and has more than 20 ODM customers and more than 3 million OBM end-users, the style of construction of organization is currently a mixture of the above four basic styles. IAC has its regional resources in Taiwan, China and the other countries managed and integrated under geography organizations. However it has function organization to integrate resources of same function in different geography organizations. It also has business (product and customer) organization to integrate business and functional resources, which are needed for the specific business, in individual function organizations and geography organizations. From any customer point of view, the customer could contact a single business window for its requirements, then the business window would integrate all necessary function and geography resources to support the customer needs. It makes the interactions with customer being very easy. From supplier point of view, it has a limited number of functional contact windows no matter where the geography location is. It effectively alleviates the burden of communication between suppliers and IAC. From internal operation point of view, business integration organization takes the lead in managing resources arrangement to meet customer's requirements. The function and geography organization are positioned to support business integration by supplying the resources they have managed.

As per the description above, the physical layer includes: organization itself, business and core competence. In addition to the organization explained, we will address more details about relationship between business and core competence later.

A Physical Layer Of Mixture Of Basic Styles And Its Characteristics

In IAC's physical layer, there are four steps mixed and well integrated in a three dimensional structure (See Figure 5 below). From bottom toward the top, the four steps are: infrastructure step, functional resource step, business development and corporate development step. The infrastructure step includes: PMD-performance management and development (of human resources and administration), IS&T-information system and technology, and FIN-finance. This step is a base to support all operations of the enterprise. The functional resource step includes: ENG/TEK-engineering and technology development, SCM-supply chain management, QM-quality management, and MFG-manufacturing system. The step includes functional pools for different types of resources which would be used for the business development. The business development step includes: all business development units which are customer oriented or product oriented based on strategy consideration and customer style. The business development units are windows to customers and center of daily business operations to integrate the resources of the enterprise and suppliers. The corporate development step includes: IAM-investment and alliance management, and RBC-risk assessment, business audit and crisis management. This step is mainly focus on oversee of business strategy plus operation results, and investment plus alliance with the external parties.

With all the above four steps included in three major geography organizations, and with function integration organization to integrate all function steps in individual geography organization, and with business integration organization to integrate business steps and function resources steps in all geography organizations, all resources inside IAC are highly integrated from three dimensions (geography, function and business) to serve the needs of simplifying operation complexities with customers and suppliers. Meanwhile it also keeps great flexibility and efficiency in management inside the organization. It was constructed like a magic cube with stable processes to produce high quality products and services. However it also maintained in a very dynamic way to cope with the changes of industrial environment.

Characteristics of this kind of implementation of physical layer have covered some important perspectives that are necessarily considered in any organization. The characteristics should be visionary, macroscopic, efficient, executable, and sustainable in keeping enterprise organization not only to survive safely in short term but also grow healthily in long term. Certainly these characteristics are revealed and enhanced based on continuous devotions in improvements of processes and details inside the organization. There is no short cut in building a sustainable enterprise in a very short period of time.

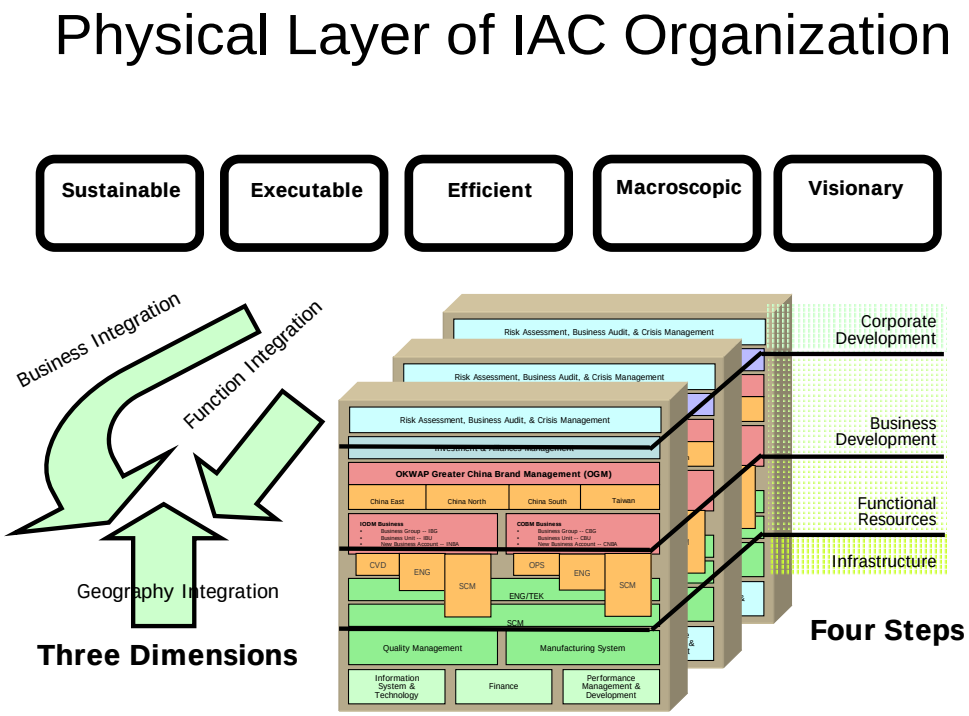


Figure 5 : Physical Layer of IAC Organization

Consideration And Implementation Of The Spiritual Layer

As stated above, a successful enterprise is normally able to appeal for individuals' consensus by a clear definition of mission (for the organization), vision (to the future), and target (of the organization). Even more, it can also unify value varieties of individuals into common values for all. So in implementation process to build the spiritual layer, it is quite necessary for the organization to reach a common consensus and understanding the following items.

- Mission - the basic purpose of survival and stay of this enterprise in the world
- Vision – the ideal picture of enterprise for all individuals to strive for from long term point of view
- Target – the short term and middle term object that enterprise should achieve based on its resources and strategy consideration

One more critical point for a successful organization to sustain for long time is "the common values" of all individuals. It must be clearly understood that vision and target could be changed based on growth of organization and influences of environment…etc., but "common values" among all individuals could not be easily changed. If there are no "common values" among all individuals, the cohesion of this organization will be a problem since all individuals can not reach a common base of measurement and judgment which is quite necessary to support an organization to act.

The process of building up the spiritual layer also include a "loop of five step engagement" in addition to setting up of mission, vision, target and reaching at "common values" inside the enterprise organization. This "loop of five step engagement" consists of :

- Gathering Individuals – how to apply the influence of spiritual factors to put together individuals from different places and work in the organization
- Unifying Individuals – how to organize the individual into a team in creating opportunities and values of the enterprise efficiently
- Strengthening Individuals – how to enhance the working capability of individuals and hence the whole team by deploying challenges and trainings
- Rewarding Individual – how to give and share physical and financial feedback from performance results of the enterprise to individuals based on principles of fairness and sincerity
- Honoring Individuals – how to give and share spiritual honor or credit of organization in order to stimulate all individuals inside the organization

The "loop of five step engagement" with all individuals is a very helpful thought and practice for an organization to leverage the spiritual layer as a key influencer in integrating capabilities and unifying actions of all individuals.

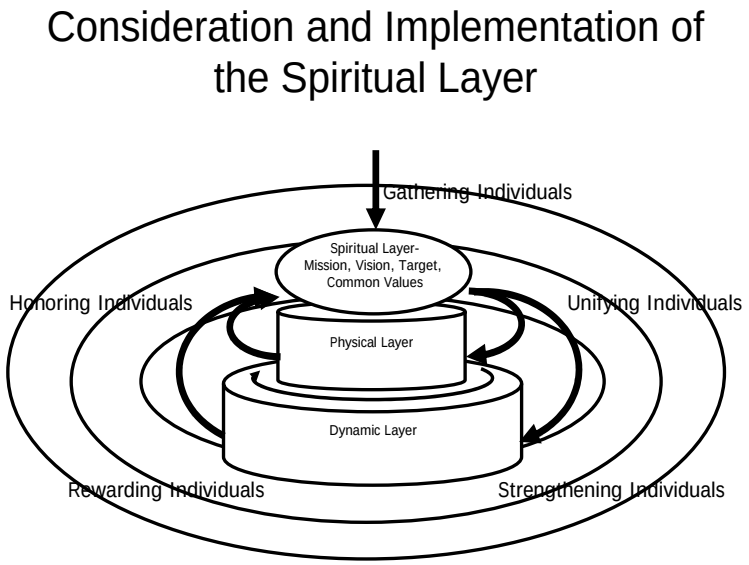


Figure 6 : Consideration and Implementation of the Spiritual Layer

Consideration and implementation of the dynamic layer

The strength of an enterprise is not only determined by the physical layer but also determined by the spiritual layer. Moreover it also has very close relations with the dynamic layer. In building up the dynamic layer which is determining territories that an enterprise can reach, there are two levels of cycles of improving activities are suggested as constructing bases. The first level is called CSP (Core Competence – Strategy and Execution – Performance Measurement) cycle which is applied as the internal management improving process for enterprise organization. The second level is called TIE (Company Target – Industry Analysis – Value Chain Evolution) cycle which is applied as the industrial competition and cooperation improving process for industrial environment.

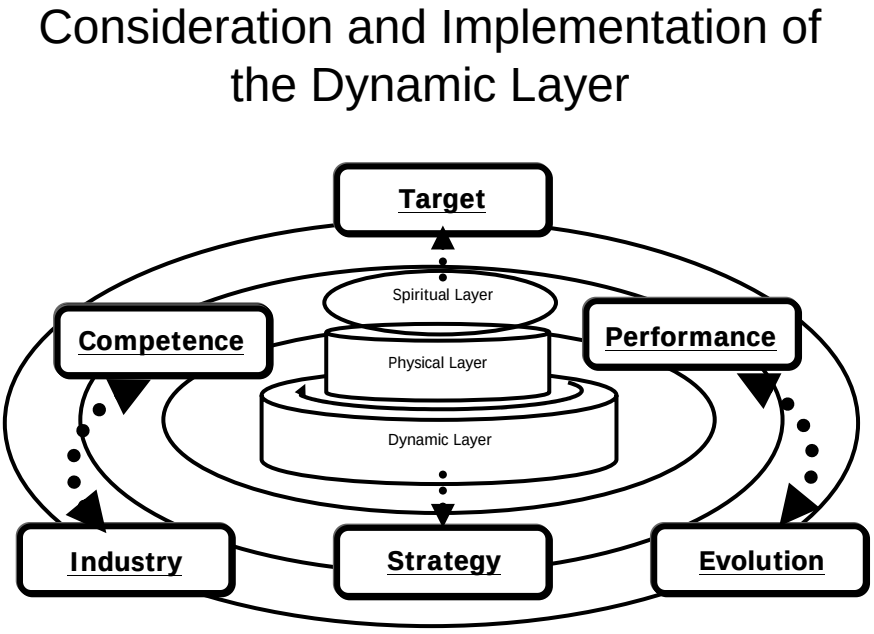


Figure 7 : Consideration and Implementation of the Dynamic Layer

CSP Cycle

It is very often that a complicated system can be configured by a simple set of basic elements. For example, no matter how complicated a computer is as of today, the hardware portion could always be expressed by an intellectually integrated set of logic gates: ANDs, ORs and INVERTERs. Or even more basic, it could be counted by numbers of transistors used in forming this computer. Another example is about current production line. No matter how sophisticated a product would be, it is generally could be produced in a production line by disassembling the very complicated production processes into many smile and basic steps. These basic steps could be well executed by workers without major design knowledge of this product. However the workers just need some necessary training before working in the production line to produce a complicated product.

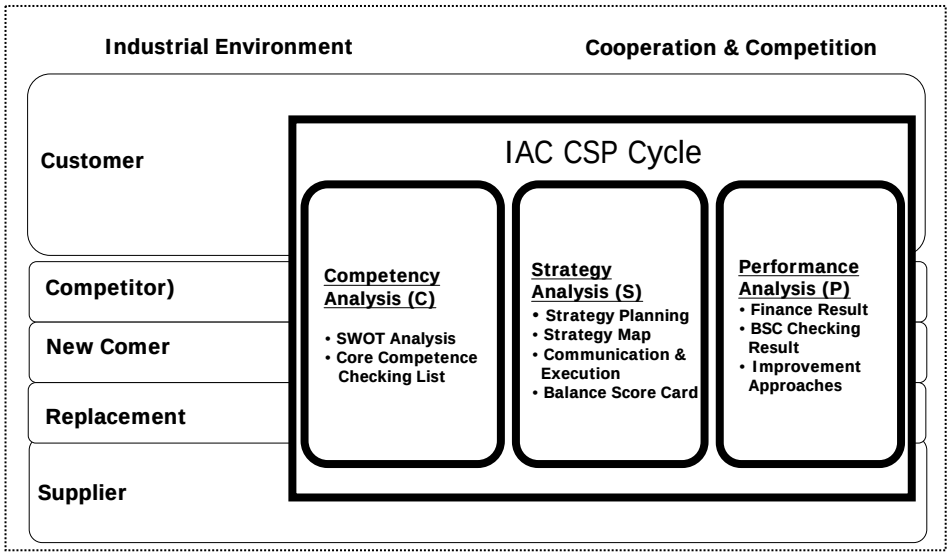


Figure 8 : CSP Cycle

This situation has been quite similar in daily operations of an enterprise. There are many management approaches and skills disclosed in management courses and books, such as: TQM (Total Quality Management), PDCA (Plan, Do, Check, and Action), six-sigma…etc. From the my experiences on management improvement for organization evolution for the past 5 years, the CSP cycle has been introduces and widely adopted in management improvement for all units inside IAC organization.

As an enterprise existing in the industrial environment, it has been influenced by customers, suppliers, competitors, new comers, and replacements from time to time. So it has to cooperate with its alliances and compete with the others for survival. Under such a competitive industrial environment, the very basic conditions for an enterprise to compete are its "competence". Through accumulations of competences, the enterprise is able to make its efforts on defining its "strategy" and put strategy into execution. Finally, the enterprise should also evaluate its "performance" based on the results of strategy and execution. The competence, strategy and performance are three major components forming the CSP cycle. Deployment of CSP cycle should have (1) "Competency analysis" including SWOT (Strength, Weakness, Opportunity and Threat) analysis and core competence checking list, (2) "Strategy analysis" including strategy planning, strategy map, and strategy communication and execution, and (3) "Performance analysis" including finance result evaluation, balance score card for checking result evaluation, and improvement approaches for competence and strategy. The CSP cycle is a continuous circulation for all units and the entire enterprise to improve its strengths in the dynamic layer. The enterprise will be able to reach much wider territories through circulation of CSP cycle applied in the organization.

TIE Cycle

Corresponding to the CSP cycle which is mainly applied for the management enhancement of the operations inside the enterprise, the TIE (Target, Industry analysis, Evolution of value chain) cycle is more suitable for the engagement enhancement with alliances in the industry. The capability of enterprise could be enhanced through the practice of continuously paying attention to monitor its target, and to track the environmental information by proceeding industrial analysis, then finally to make the necessary adjustments on alliances or organization.

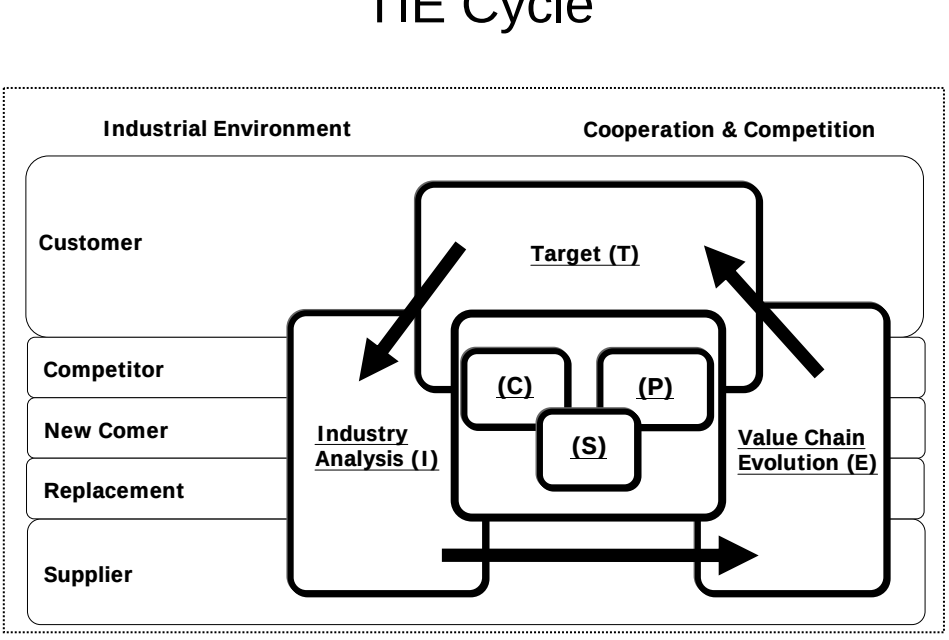


Figure 9 : TIE Cycle

BUSINESS DEVELOPMENT AT IAC

The Industry Smile Curve

The "Industrial Smile Curve" measures competence of an enterprise by its added value generated in the industrial value chain. An enterprise should keep its growth and sustain its position in the industrial by continuous transforming it organization in order to move to regions with higher value-added in the value chain. As of situation of supply-over-demand at this moment, especially for the information and communication technology (ICT) industry, the upper stream of value chain (with high research investment and consequently with ownership of more intellectual property rights), and the lower stream of value chain (with services and distributions and consequently with effective brand value in the market) are two regions having higher added values than the middle stream of manufacturing only. The "Industrial Smile Curve" was discovered and proposed to the industry by Mr. Stan Shih who is founder of Acer Group.

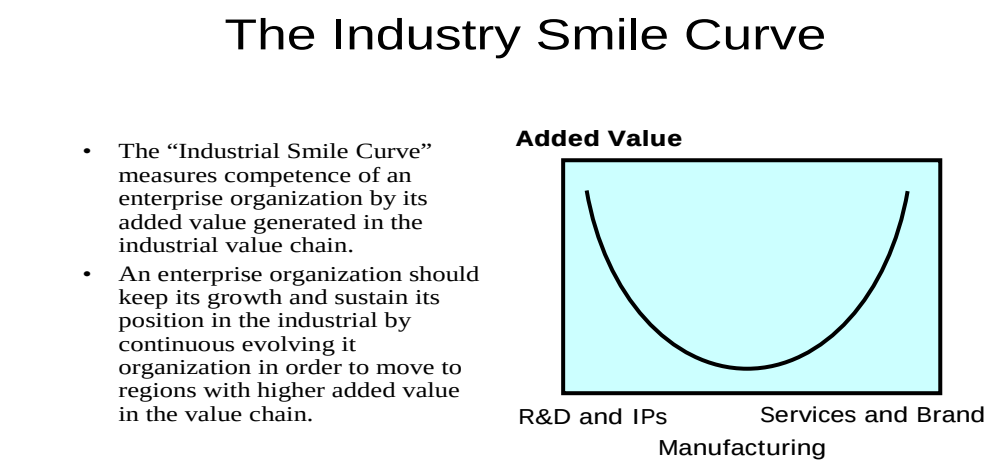


Figure 10 : The Industry Smile Curve

The "Industrial Smile Curve" has been very fit in explaining the paradigm shifts and moves of ICT industry, especially but not limit to the companies in Taiwan, for the past twenty years.

Business Models of IAC

Historically, IAC has been the ODM (Original Design and Manufacturing) business for many global brands since the period when it was a division of its mother company. The enterprise became an independent legal entity from year 2000 and has continuously kept its business relationships with its ODM customers. However, noting the "Industrial Smile Curve", IAC has considered future of the enterprise and redefined its business models to shift the whole organization to regions with higher values-added.

IAC now has implemented two business models for the past five years to position it for long term sustainability. The two business models are: IODM (Integrated ODM) and COBM (Community Own Brand Marketing).

The IODM business stands for about 85% of its total revenue in year 2004, while the COBM stands for another 15%. IODM business has the characteristics of bigger scale but lower growth margin. In contrast with the IODM, the COBM business has the characteristics of smaller scale but higher growth margin. However, with COBM business model, IAC has been able to invest more of its investments on research and engineering to support its own brand business growth. The IODM, in the other side, has propelled IAC organization to get better position in supply chain management and to achieve higher operation efficiency. Certainly it has not been easy to manage two different business models in a well balanced situation. But the value generated by balancing these two business models is much more visible than keeping only the ODM business model for the enterprise.

To prevent conflicts with its customers, IAC promotes its COBM products only in Greater China area and rolls out only cellular phones up to now.

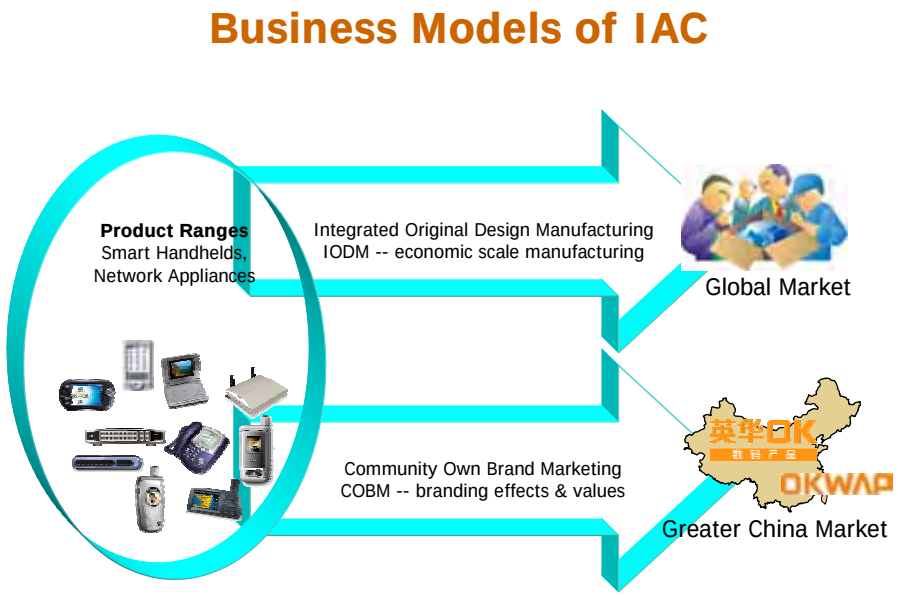


Figure 11 : Business Models of IAC

Product Range and Category

There are two product ranges of IAC: Smart Handhelds and Networking Appliances. In general, there are four major areas in the ICT (Information and Communication Technology) industry, they are: Computers, Communications, Consumer Electronics and Networking Products. "Smart Handhelds" are a product range covering parts of computers, communications and consumer electronics. It is now the most popular product range which has yearly growth between 15-50 % in average for different product categories. "Network Appliances" are a product range under Networking Product area but converged with technologies from computers and/or communications.

The product categories in Smart Handhelds, with which IAC have involved, are: PDAs, WiFi Phones, PHS Phones, GSM/GPRS Phones, Smart Phones, MP3 Players and GPS Navigators. The product categories in Networking Appliances, with which IAC have involved, are: Consumer Routers/Switches, Wireless Access Point, IP Phones and Analog Telephone Adaptor.

The Smart Handhelds and Network Appliances are actually shares many common technologies and resources in the product design even they are quite different in application areas. The common technologies and resources cover component level, engineering capability level and IP level. It is quite important and useful for an enterprise to pay attention to keep "focus" on its core competence. The diversification of products based on focused core competence represents the degree of efficiency of an enterprise in managing its resources.

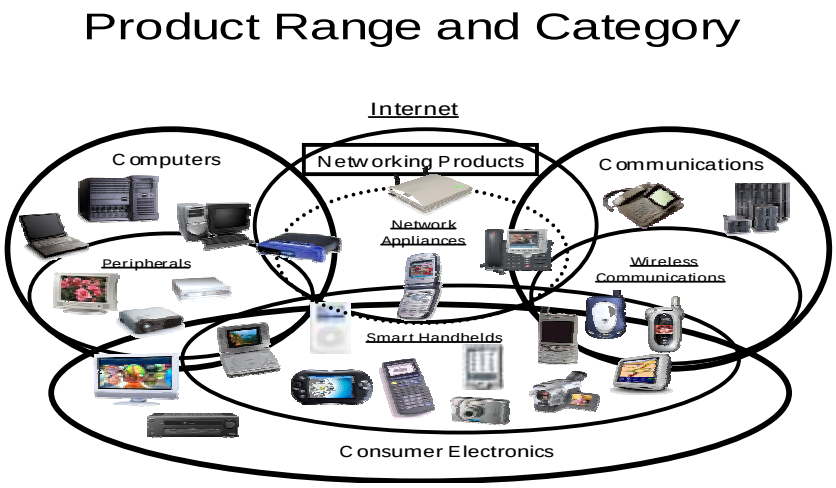


Figure 12 : Product Range and Category

IAC Core Competence

The core competence of IAC could be expressed in three dimensions.

Integration for Highest Total Efficiency

- Multiple Locations, One Management System
- Specific Process Package Designed for Customer
- Concurrent Development and Supply Chain Management under One Customer Focus Team
- One Stop, Total Solution

Expertise on Most Innovative Access Terminal

- High Ratio of Engineering Resources for Customer Value Creation
- Full Line Technology in (Wired and Wireless) Smart Handheld and Network Appliance

Management for Best Customer Relationship

- Field Knowledge and User's Experience in Greater China
- Service, Speed, Flexibility for Customer's Satisfaction

IAC leverages its first core competence (of resources integration capability) to differentiate from the other competitors for speed and cost. It also leverages its second core competence (of product innovation capability) to differentiate from the others for product values. Finally it leverages its third core competence (of customer relationships) to differentiate from the others for service and flexibility.

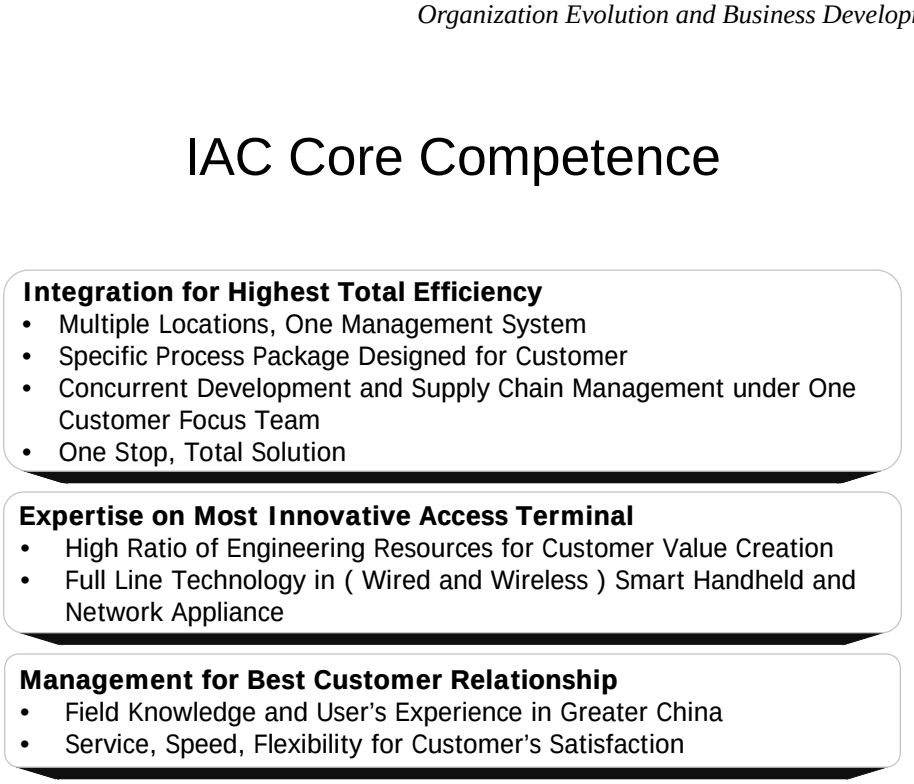


Figure 13 : IAC Core Competence

Global Operations

The global operations of IAC at this moment include 6 main facilities and other offices in 5 cities of Taipei, Shanghai, Nanjing, Silicon Valley and Dallas. The total production floor space will be 280,000 square meters by end of 2005. The employee number is over 15,000 with more than 1,700 engineers. Compared with the resources in year 2001 – total production floor space of 80,000 square meters and employee number of 2,500, the resources of floor space increase 250% and the resources of employees increase more than 500%.

Revenue Growth and Shipment Quantity

The revenue of business of IAC grows from year 2001 to year 2004 very remarkably. The compound average yearly growth is about 130% for the period of 2001 to 2004. The business scale of 2.5B US dollars in 2004 has enabled IAC to be the 23rd largest company in the manufacturing sector in Taiwan. IAC was ranked as the 43rd in year 2003. It is estimated that IAC will have another 20% growth in revenue in 2005 compared with 2004.

The shipment quantity of IAC products in 2003 was about 20million pieces in total, while it has grown to 26M pieces in 2004. It is forecasted that the shipment quantity will reach the peak of 30M pieces in 2005. Among the shipment quantity of 26M pieces in 2004, there are 19.5M pieces were for IODM business and the other 6.5M pieces for its COBM business.

Organization Evolution and Business Development: which is the higher priority one?

Every businessman would certainly know the importance of the business

development to success of an enterprise. However it is likely that not all businessmen understand the importance of organization evolution to sustenance of an enterprise. So it is not surprised that the average life of small and middle enterprises in Taiwan is only 13 years. It is also not a question that the average life of the big enterprises in the United States is merely 40 years. Long term survival is not an easy task. However growth is a very normal way for enterprise to become strong to survive for most of the enterprise organizations. I would conclude that organization evolution for any enterprise is equally important with the business development. It would be best if the enterprise to have both of them continuously implemented and improved without any interruptions.

From statements and descriptions above, I have already shared the experiences in managing organization evolution and business development of IAC in the past five years. The main reason for the success of IAC is because of its organization evolution achieved in parallel with the business development. The growth strategy of IAC is to grow based on its core competence. Growth without focus on core competence has no long term value to enterprise organization. Certainly the core competence could be gradually expanded into the other areas with a stretch strategy. However it is not a situation of only seeking for short term opportunity, but is a situation of long term investing on evolution of our enterprise.

THE VALUE CREATION IMPERATIVE

Prof. Tan Wee Liang
Singapore Management University

INTRODUCTION

In the days before the knowledge based economy, firms could afford to pay less attention to value creation. They could get by with the products/services they had to offer. It was less of a critical issue in the days of relative stability in the business environment. However, it has become a fact of life that in the 21st century, the state and rate of change is a constant. Firms that engage in value creation have been known to enjoy a share price premium over less innovative firms. Engaging in value creation processes has enabled some companies to become leaders in their respective fields. This paper explores the need for value creation, the organizational systems that need to be in place for this to take place and the role that management can play in effecting the changes that may be needed for value creation to take place.

What does value creation entail?

Corporations are familiar with the value creation processes at their origins because at that point in time, they needed to justify their value propositions in order to find places in the market place. This form of value creation occurs at the business creation phase of the firm's growth cycle. They needed to create value in the form of a new product/service to survive as a new venture.

As the firms grow in size past the survival phase, the need for value creation changes because the value proposition in the original product or service may suffice for the initial years. The demand for their products/services would grow along the product life cycles and in tandem with their marketing efforts and capacities. It should not be surprising here as the developing firms (the survivors) would be focused on extending their productivity services to the new customers or to new markets. Value creation at this point would involve incremental changes in the form of

a. Extensions of their existing markets
b. Product improvement/ enhancements
c. Customer relationship interface
d. Quality considerations

However, to have sustained or rapid growth, value creation must assume other forms: new products and or services. To achieve this, the firm might engage in research, development and design activities. From among these new innovations, the firms aspire to pick a number of winners that can be commercialized.

Some firms could adopt another alternative approach to conducting their own research and development. They acquire another firm or business that has the innovations that it needs. In this way they seek to create value through acquisition. Of course, they could also license the technology from others.

The firms might need to re-examine their business models. The term "business model" came to the fore in the heyday of the dot.com craze. However, the term and concept has application outside of the high technology industry. It has been called "strategic innovation" and "business model innovation" by Hamel (2002).

Table 1: Forms and Means of Value Creation

← Incremental →			← Radical →					
Productivity Improve-ments	**Market Expansion**	**Product Refinements/ Enhancements**	**New Products/ Services**			**Business Model Innovations**	**Inter-nationalize**	
Incremental changes in operations, production, etc.	Marketing & Sales	Marketing dept	In-house developments - R&D unit - team	Cooperate	Acquired from other companies	Transform the organization	Self	Cooperate

The need to re-examine business models becomes critical when the external environment is rapidly changing with not just new competitors but changes at industry levels. If the industry is shifting to new standards, new processes, new ways of doing business or being decimated, the firm has to evaluate whether the way it has been configured and delivering what it perceives as value to its customers is relevant for the future. In essence, the firms need to redefine/ reinvent themselves.

Another way to create value is to take a radical step which is no longer as radical as in the days before globalization, venture overseas. This is depicted in Table 1. It could be done by themselves or in cooperation with others. Venturing overseas is risky for SMEs as they are limited by their size and resources. It also comes with the risks associated with overseas ventures: country and political risks over and above the usual business risks.

Choice of approach: Broad or narrow value creation

In addition to forms of value creation, there is a need to consider the parts of the firms should engage in value creation. Firms could embrace value creation throughout the corporation. This approach [the wide approach] would require an entrepreneurial approach to corporate management, and an infusion of entrepreneurship throughout all levels of the organization. Kao (1997) argues that this requires the firm envisioning itself as a community of entrepreneurs. He defines entrepreneurship as the process of doing something new and/ or different to create wealth for oneself and adding value to society. Other systems would need to be in place though to support this fostering of entrepreneurship intra- organizationally. The elements critical to this approach include ensuring that there are values accepted by all that support the entrepreneurial vision; that the organizational culture, reward systems and evaluation are aligned to the goals.

The narrow approach to value creation is valid and may be what the corporations decide upon. Here the firms may engage in specific strategies that only selected units of the firm may be involved. The product development or market development strategies to value creation are some examples of the narrow approach familiar to most companies as these approaches are related to the customer-driven approaches recommended in much of the business literature.

Closeness to the customer and responsiveness to their views and needs are essential to crafting and designing new product/ service offerings. There may be a need to introduce a system for collecting customer intelligence. The customer intelligence, thus, needs to be integrated with the efforts of the firm to create value. Possessing customer intelligence without a means to consider the potential usefulness of their views is insufficient. It is through sensitivity to customers' current needs and anticipating their future and latent needs. The availability of customer relationship management computer-based systems permits the creation of the customer interface, the mining of information and marketing coordination.

Apart from value creation through the customer interface that leads to new innovations, there is also value creation that comes through the increased customer satisfaction, customer loyalty, product enhancement and service improvements.

In the sub-contracting sector of the electronics industry for example, firms who are sub-contractors have practiced value creation through closeness with their customers. At times, they pre-empt their customers' new demands prior to the customers' specifying their needs. They anticipate, for instance, that their customers would be upgrading to a new line of circuits and begin planning and designing a production line that can accommodate the needed processes and components. In this way, they have added-value services to offer their customers. Hence, the narrow focus on customers can in itself lead to value creation for the firm.

The choice whether to adopt a wide approach to value creation is predicated upon the observation that creativity and innovativeness is unevenly spread throughout an organization. Further, it enables the pooling of the efforts of many. Taking into consideration the cumulative effects of the many employees, it also makes sense to capitalize on the ideas of all, rather than limit it to the top management.

The human relations school of management would favor the wide approach as would some entrepreneurship academics such as Kao (1997) and Pinchot (1985). They advocate harnessing the potential in the workforce in a corporation allowing them to innovate in processes, products, services and improvements. The merit of this approach has been lauded in companies such as 3M, Virgin group, American Express Travel Related Services and Inventec, to list but a few. Opting to apply the wide approach would require commitment from top management to enlist the workforce and to put systems in place that we discuss in the next section.

Steps needed in the implementation by firms

After deciding the scope, steps need to be put in place. The steps are the same in generic terms whether the company opts to adopt a wide or narrow approach to implementing value creation. If the approach is a narrow one, the comments in this section shall apply only to the unit or team involved. If it is wider then they shall apply to the other units being included or the organization as a whole.

Vision: One needs to know what is intended or envisioned as value and how it is to be created. The unit's or organization's members must have the theory/ idea that top management intends for them to aim at indicated to them. Without this vision, it would be difficult for the unit/s organizations to confirm to expectations. An example of a vision for the business development unit that is responsible for seeking value creation by adding new units through acquisition is the unit is to seek new businesses with technology that the company does not yet possess but that will enable us to grow in the future into new areas and contribute to the firm's rate of return on investment. The firms ought to stipulate the performance measure that comes about from pursuing the vision. This could take the form of a specific rate of return on investment [ROI] or a measurable requirement that may be subjectively perceived, for example, that after a year, the review committee would have considered that the unit had made advances in specified areas.

Philosophy and values: In addition there should be guidance in broad terms what, why and how the value creation should be carried out. If the whole firm and the employees at all levels are to be involved then the document will set out the rationale for the type of value creation efforts welcome. The methods of these are stipulated. For example, "The

company expects and encourages all employees to contribute through ideas and innovations. It is through ideas and innovations that we will remain competitive. Any ideas or innovations that add value to our business activities are welcome. The innovations can even be simple process changes. We welcome them because the value created by one person when aggregated with the rest becomes a total value added that makes for our firm's competitiveness. So if any of us has an idea that can make a difference, however minute, it may be in your assessment, we will consider."

Values are needed as they are values that undergird the vision and philosophy. If value creation by all is desired then value creation values need to be identified.

Reward systems: Individuals in the organization need to be appropriately rewarded. If the motivation systems pay no heed to their value creation efforts, it is difficult to imagine that efforts, commitment and sharing of innovations with the company. Nor need the rewards systems by solely financial in nature.

Training: There may be a need to equip the relevant workforce in the area of skills and mindsets. If value creation is to be undertaken by all, the entire organization needs to understand what is involved. Different units and workers would require different skills sets.

Explore versus Exploit

The objective behind the systems put into place by the firm remains the same: value creation. We began by outlining the forms that value creation can take. Now we reprise our discussion by grouping all that we have said under two categories. These two categories of activities and agenda can be considered two alternatives or complementary halves.

The first is exploitation. SMEs must learn to exploit the advantage they have. In this regard, it means they should find ways and means to capitalize in the niche product service, capabilities and unique business arrangements. For example, if they have succeeded without branding their products / services, they ought to consider doing so if that leads to greater value being created out of their current offerings. Another SME might have done well producing its bread and pastries that are well liked. However, to create greater value there may be a need to professionalize and systematize a chain of bakeries or franchise to others (See story of Break Talk in box).

BreadTalk made its debut on the Singapore stock exchange in late 2002 a year after its inception. George Quek, the founder and managing director of the bakery chain, had taken the traditional bakery and transformed it into a branded chain of boutique bakeries.

Each BreadTalk has the urban, clear glass, clean cut look punctuated subtly with detailing of contrasting colors of artworks, unique to each locale. George introduced BreadTalk's signature "see thru" kitchens allowing customers to view their chefs at work and to allow their chefs to showcase their expertise upfront. He adopted a modern retail identity, elevating bread buying into a totally uplifting experience. Each bakery's layout engages the customers through the eye before the aroma of freshly-baked bread hits the olfactory nerves.

When the BreadTalk concept was first introduced in Singapore, there were skeptics who predicted that the fad would fizzle out just like the 'bubble tea' phenomenon. However, in a short span of three years, the bakery chain opened more than 20 outlets in Singapore, making it one of the most recognized local brand

names. Not only had BreadTalk mushroomed all over Singapore, it has gone international through franchises.

Interesting note: he sharpened his skills in Taiwan. In 1982, Quek left Singapore for Taiwan to further his art education at a well-known institute there but he found he could not afford the $6,000 enrollment fee. With his remaining money, he set up a single pushcart stall selling dragon beard candy in a Taipei department store. Dragon-beard candy is a snack handmade by stretching flour and melted sugar or Chinese version of cotton candy. Initially his business did not do well. Without money for a ticket to return to Singapore, he persevered. After trial and error, he modified his sales pitch, marketing, flavors and presentation accordingly. Two years on, the single cart outlet expanded into four more with sales over $240,000 a month. He then ventured into selling Singapore hawker food to the ever-adventurous Taiwanese' tastebuds. More Details on his entrepreneurial journal can be found at http://www.stoneforest.org/chutzpah/george_quek.html

Focusing on exploitation requires the SMEs to examine the elements of their business and to strategically seek out those aspects that make up their competitive advantage. Having done so, they should exploit them. Such behavior would also require the SMEs to also take into account the external environment, competition and their own capabilities. There may be a need to time their efforts and develop internal resources needed for any such changes.

Exploration on the other hand requires the SMEs to step outside of their usual, ordinary or traditional areas of business. Here they need to embrace the unknown and peer into new areas, experiment and learn. It is only through such exploration that companies learn that they are able to adapt new technologies to the products/knowledge that they currently possess to create new value. Trek 2000 was such a case. Henn Tan has been a distributor of flash memory. Desiring to go beyond selling and distributing the flash memory, he went to learn about encryption and the universal serial bus creating his own version of the thumb/hard disk drive. That development was a success but he needs to extend beyond that and that calls for further exploration.

In Taiwan a textile company Haojey has also used brand-building as a key to its success in textile industry. It coupled branding with explorative innovation and R & D.

Haojey Co. www.haojey.co.tw is one company that has succeeded in pushing its fiber products, marketed under the "Texcare" brand, to markets all over the world, especially Japan through its branding efforts.

Haojey was founded in 1979. It was one of Taiwan first manufacturers of high-performance fibers. The company had first-mover advantage in the market by partnering with Japan Asahi Kasei, which authorized Haojey to be its sole distributor of functional fibers. However, Haojey realized it needed to expand its business and product lines with competitors entering the field. It had been competing in a "sunset industry." It realized early that making low-value products sold at inexpensive prices is no longer a viable strategy. It decided to embark on R & D and also building its own brand of products. Brand-building has been the key to its success. It began to create value for customers as well as the company by making innovative products, backed by solid research and development effort.

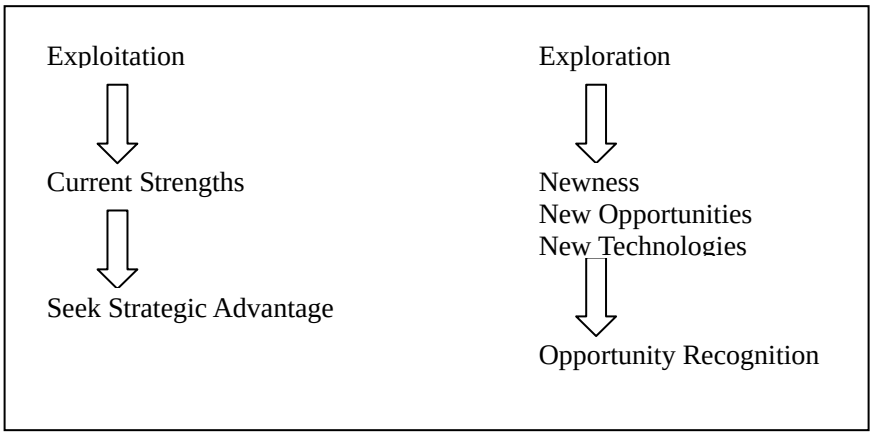
Today Texcare products are distributed to various parts of the world. Garments made of Texcare fibers are especially popular in Japan, as consumers are drawn to

their high quality and competitive prices. When they started, it had a disadvantage competing with brands from European, North American and Japanese multinationals.

Two products stand out: Texcare nano-silver antibacterial fiber and Texcare antibacterial cool and dry fiber. The antibacterial fibre enhances the comfort and durability of garments. The fiber is made with nano-technology. The fiber antiseptic and moist-wicking features allow the absorption and expulsion of body sweat, and keep the consumer safe against infrared rays, ultraviolet rays and static electricity. The fiber is also equipped with anti-abrasion functions, allowing it to retain 99.99 percent of its antibacterial agent even after being washed for 50 times.

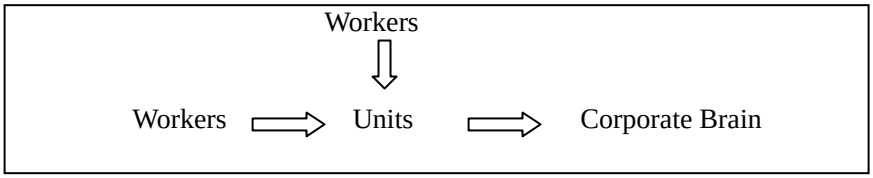
Texcare antibacterial cool and dry fiber contains an antibacterial agent that protects the skin from invasion by airborne bacteria. The synthetic fiber is moist-absorbing, perspiration-repelling and odor-resisting. Applications range from nightwear, underwear, uniforms to sportswear such as T-shirts and polo shirts. Haojey also makes shoe lining for several world-famous brands, with Chen citing Nike and New Balance as some of its indirect clients.

All the value creation efforts address either exploration or exploitation. The figure below illustrates:



SMEs need both exploration and exploitation. All too often, they only worry about new opportunities when the product/service life cycle of their offering is on the decline or when the market potential for them is at its peak and competition may be stepping into the fray. If a SME tries to explore when it has reserves or is doing well, the efforts would be met with resources and funding. However, should such efforts be embarked upon when things are not doing well, there's less likelihood that exploration efforts would be sustained over a long period because there most probably would be other matters requiring attention – e.g. to staunch financial bleeding.

The firms should not engage in exploration only when current strategic offerings have been exhausted. Instead it should be a simultaneous affair. Both areas should be of concern to SMEs that desire to grow. The management teams should alternate their thinking between exploitation and exploration. Exploration should engage others in the organization to act as the SMEs brain (See diagram below).



The human brain has 10 billion to 100 billion neurons. The choice lies in the firm whom it wished to form its neutral networks; that is a decision to be undertaken by the top management

The role of top management

The top management is integral to the success of any value creation efforts in a firm. Entrepreneurial firms suffer from one shortcoming when they are growing and dynamic – they are over reliant on the founder/CEO for all new value creation efforts. The tendency is for all new creative efforts, business deals, new innovations to be initiated by the entrepreneur. The leader who is the fount of new ideas and projects can also be the bottleneck. There are possible reasons for this:

- The entrepreneur's knowledge, know-how and technology
- The entrepreneur's contacts, networks, continued learning and scanning of the business, technological and social environments wherein lies the opportunities for value creation may be limited. These limits would in turn limit the number of ideas and the extent of value creation.
- The entrepreneur's drive and effort in this area might diminish over time as they get complacent, grow old or have a change in motivation. The entrepreneurial drive may slacken.

Any entrepreneurial firm needs to watch its top management. The entrepreneur is responsible for corporate leadership, its succession and the building of the top level team. For the reason the Asian Productivity Organization runs its Top Management program to help infuse organizations with the skills and expertise needed in their top leaders. The emphasis on top management is not unwarranted. They make decisions on direction and the commitment of resources to value creation.

CONCLUSION

Value creation as an idea is also known as value innovation among other labels including corporate creativity, continuous innovation etc. The crux of the matter is the need for the initial entrepreneurial characteristics that were present at the firms' inception/ startup to continue. Entrepreneurship should not end with the startup or survival. Firms should seek to continually create and add value. Who should be involved and the necessary activities are some things we have discussed in this paper.

Active things SMEs should consider doing:

- Anticipate the future – decide never to be complacent but scan the business environment and horizon for what may lurk ahead
- Think and operate across functions – here there is a need to create cross-functional teams and encourage all managers to think holistically rather than of their own functional area
- Expand and utilize social capital – network actively. Examine the social capital resources available to the firm through its employees' social networks. The networking could need to new ideas, projects and value creation.

- Empower their employees to innovate and create value – they should be mandated to think of ways to exploit the competencies that exist within the firm and to explore new areas.
- Challenge paradigms and pre-existing thinking – the entrepreneur, his team and the employees should refuse to be satisfied with the status quo.
- Seek to maximize their advantages, seek opportunities and above all engage in strategic thinking.

References:

Hamel, G. 2002 *Leading the Revolution*. New York: Plume Books.

Kao, R. W. Y. 1997 *An Entrepreneurial Approach to Corporate Management*. Prentice-Hall: Singapore.

Pinchot, G. 1985 *Intrapreneuring* 1985 New York: Harper & Row.

VALUE CREATION IN SMES/VENTURE BUSINESSES THROUGH EXPERT'S HANDS-ON SUPPORT

Tetsuya Okuyama
Innovation 21

INTRODUCTION

Since 2000 the public-sector business support centers for SMEs/venture businesses have opened in Japan. Now there are approximately 330 public-sector business support centers for SMEs/Venture businesses all over Japan. The effectiveness of the support by those centers has been appreciated among the SMEs/venture businesses. Especially the hands-on support by the business experts has been creating much management value for SMEs/venture businesses.

This paper would like to introduce the major activities of the public-sector business support centers for SMEs/venture businesses, the system of the hands-on support and the management of the experts.

I have been engaged in the national support center as a project manager from the establishment of that center in 2000. This paper is written based on my experience of the establishment and the management of the centers.

SMES CAN CREATE VALUE THROUGH PUBLIC-SECTOR SUPPORT

The Public-Sector Business Support Centers for SMEs/Venture Businesses in Japan

There are approximately 330 public-sector business support centers for SMEs/Venture businesses in Japan. Those centers are categorized into three types: nine national support centers, fifty-seven prefectural support centers, and approximately 263 regional support centers. Those centers provide the same support services all over Japan, but the scale and level of support are a little different.

Each Center is intended to give advice on diverse management issues faced by SMEs/Venture businesses who are tackling high-level management tasks such as public offering, fund-raising through direct financing, breaking into new business areas etc.

In this paper, especially I will focus on the activity of the SME/Venture Business Support Center (National Support Center).

Business Experts are the Main Resource of the National Support Centers

National Support Centers are deployed in nine blocks across the country, and carry out support to venture businesses looking to public offering or support for addressing high-level management tasks such as management strategies involving patenting and overseas operations. Those National Centers are staffed with twenty-nine project managers and over 1,200 business experts from the private sector who are knowledgeable about overall business management of small/medium businesses.

Many types of experts and specialists such as accountants, technicians and consultants are available at all times as advisers to provide appropriate and careful advice on wide-ranging matters relating to management, technology, funding and the law.

The Expert's Areas of Expertise

Over 1,200 business experts who are registered in the national centers all over Japan have expertise in the following areas.

- Corporate Policy and Business Planning
- Entrepreneurship Development
- Financial Management
- IPO: Initial Public Offering
- Production Management, Kaizen, 5S, JIT, Quality Control
- Logistic, Physical Distribution, Material Handling
- Marketing Management
- Personnel Management, HRD & Training
- IT/ Internet/ Intranet
- Technology Development & Research

Over 1,200 business experts have various management licenses such as CPA, lawyer, SME management consultant and so on. Of these the most numerous are SME management consultants.

Three Types of the Expert Services

The centers provide several kinds of services to SMEs/Venture businesses. The major three ones are as follow:

1. Advice over the counter
   Each center opens two or three counters for advice by the experts every weekday from nine a.m. to five p.m. The experts can give advice on management, technology, funding and the law concerning SME/Venture business.
2. Lectures and Seminars
   The experts in each center give lectures and hold seminars on management, technology, funding and the law concerning SME/Venture business in the center's office and other places.
3. Hands-on support by deployment of expert.
   When a SME/Venture business makes a request, a center will deploy experts equipped with knowledge and capabilities appropriate for that SME to provide hands-on support.

Hands-on Support to SMEs/Venture Businesses

When a SME/Venture business request a support, the Center deploys experts equipped with knowledge and capabilities appropriate for that SME/Venture business, for a long continuous period. The outline of the hands-on support system in the National Center is as follows:

1) Outline of the hands-on support system

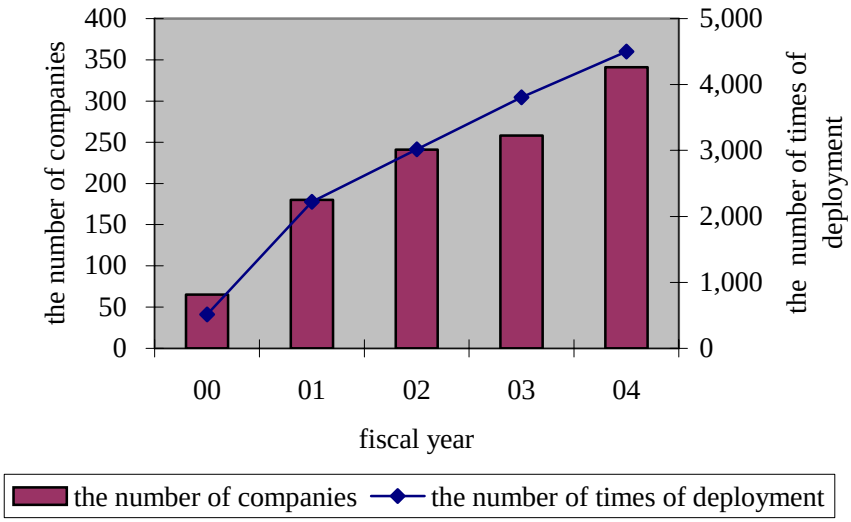
a) Hands-on support period is six months to two years, and the frequency of expert's visits is 1~2/times/month.
b) More than one expert can be deployed to a company. Total support time of deployment for a company is 12, 36 or 48 times/12 months, period depending on the type of advice.
c) Fee-based service, where one-third of the costs incurred in hands-on support will be charged. ¥16,700 per time charged to the company, (no transportation expenses).

d) Fee for advice paid to an expert is ¥50,000 per time.

2) The latest trends in hands-on support

Both the number of the times of expert deployed and the number of the companies to have received experts are increasing every year as shown in the graph below.

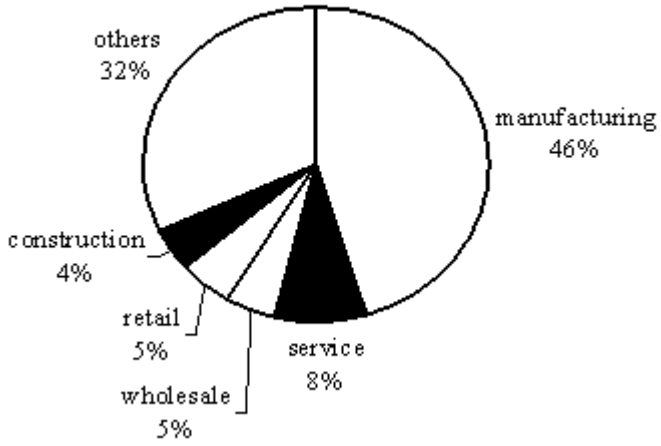
To whom has been the expert deployed? Almost all are small enterprises. Hands-on support will be provided, when venture businesses intends to go public, when old enterprises wish to change their business, when solving concrete management subjects, and being faced with financial problems.



The latest tendencies of hands-on support are 1) The number of deployments has increased sharply, exceeding 4,000 deployments in FY2004, 2) The request for new business planning, marketing and production innovation support is increasing, 3) Requests for support when going public is also increasing, 4) Requests for support by middle- sized companies is increasing.

The proportion of industry sectors to have received hands-on support as follows:

Over 360 SMEs/Venture businesses have received deployment of experts in FY2004. Those companies belong to various business sectors. Of these the most numerous is the manufacturing as shown below.



The type of hands-on supports given by the experts is shown in the table below. The most numerous type of advice provided relates to production.

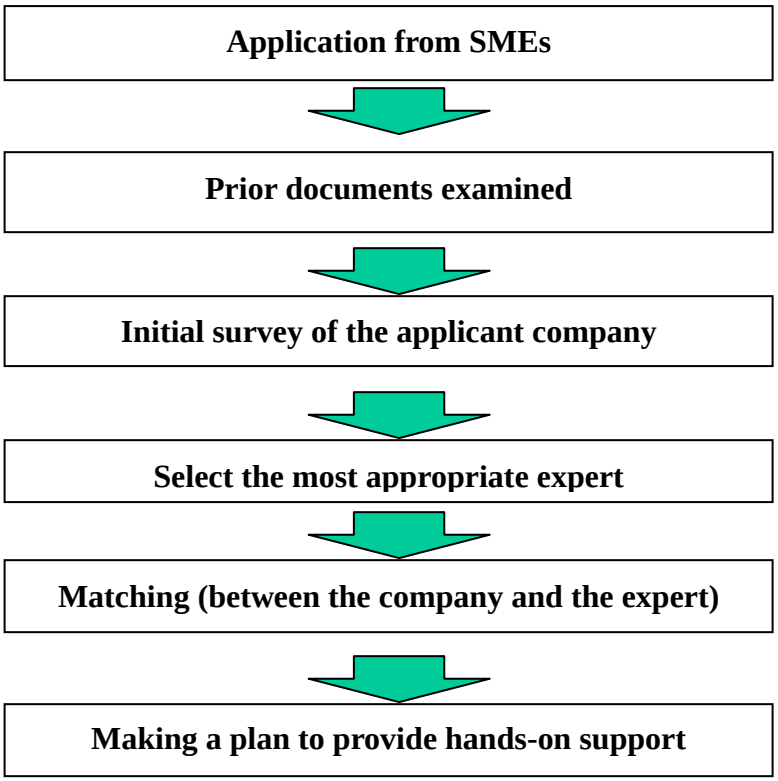
No.	Type of advice	Number of times dispatched
1	Production	1,546
2	Sales/Marketing	1,438
3	Business Plan	1,272
4	Product/Technology Development	486
5	Finance and Accounts	392
6	Personnel affairs	372
7	IPO/Fund Raising	265
8	IT/Information Systems	215
9	Store/Factory	173
10	Management Strategy	133
11	Judical Affairs	99
12	Multi-store Development	55
13	Globalisation	44
14	Industrial Property/Patent	38
15	Logistics	34
16	Assess the SMEs support's needs	22
17	Cooperation between companies	21
18	Revitalization	8
19	Environment	4
20	Others	22
Total		6,617

3) The project management system of hands-on support

The national center has the project management system for providing hands-on support.

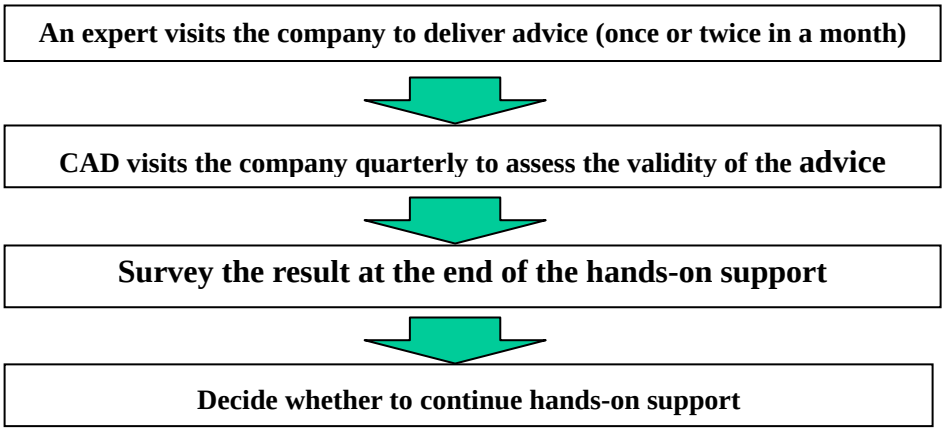
By applying the project management system to hands-on support, the center

has been able to provide the high quality support that SMEs appreciate and are satisfied with. The introduction of the hands-on support can be explained by the flow chart shown below.



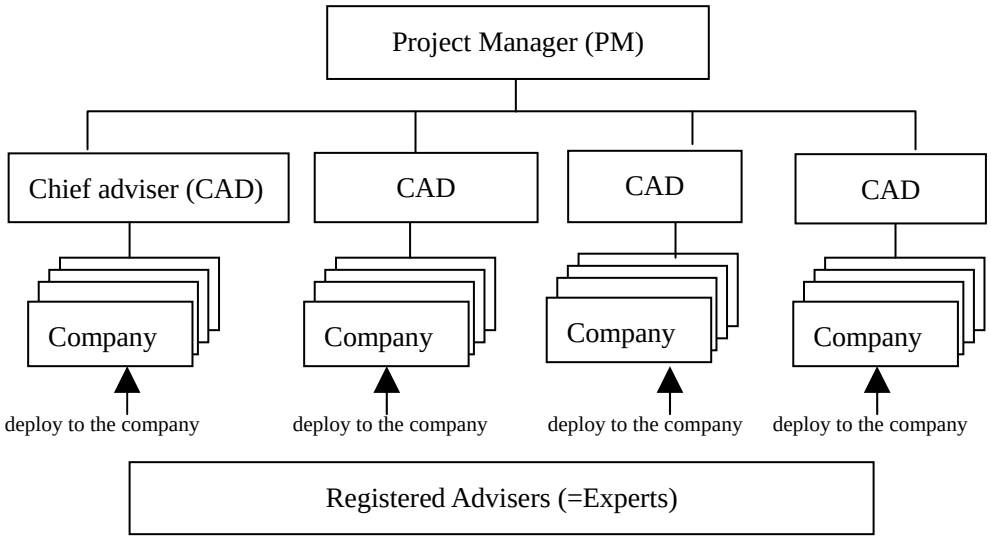
Providing Hands-on support

The Implementation of the hands-on support is as follows.



4) Double layered management

In order to apply the project management system for the hands-on support, the center has a double layered management system consists of project managers and chief advisers. Each center has between five and fifteen numbers of chief advisers who are appointed from the experts. The chief adviser, which is abbreviated to CAD, is directly in charge of the company the expert is deployed and listens to the requests and claims from both the companies and the experts.



Also in each center there are a few project managers, which is abbreviated to PM, who have been recruited from the private sector by advertisement in newspapers etc. In all the national centers, there are twenty-nine PMs at present. The expertise of the PMs are as follows: 18 (management), 8 (technology), and 2 (sales and marketing).

The PMs manages CADs and coordinate the support activities for SMEs. However, they are responsible for the experts' activities at the SMEs/Venture businesses and at the center. Their major mission is finding promising companies that are appropriate for a business start-up or management innovation. The PM identifies such companies from firms who apply for support, and from those who participate in the lectures and seminars the PM gives, and so on. The PM coordinates opportunities for developing new customers, and matches the SMEs with venture capital funds to support the development of new markets. The PM consistently supports promising companies to succeed in business. As a result the PM selects and then spreads the most successful methods for SMEs as national support models.

Case study : "Support by five experts has made AZIA Co., Ltd. possible public offering"

As a case study, the successful support of an IT company in Tokyo will be introduced.

AZIA Co., Ltd.
Line of business: Development and sales of software
Headquarters: Shinagawa-Ward, Tokyo
Capitalization: 88.9 million yen
Founded: April 1994
Annual sales: 380,000,000 yen
Employees: 21
CEO: Akira Eto

1) **From failure at former business to spin-out entrepreneur in the Internet arena**

AZIA is an IT company that first enjoyed a good reputation in the market for its independently developed CRM (customer relationship management) software. It successfully went public in the Green Sheet Stock Market in January 2003 in the shortest preparation period. The Green Sheet Stock Market is a market started in July 1997 for transaction of stocks of companies not traded on the main stock markets. The public offering was possible as it was provided with the overall support of a National Support Center.

After dropping out of college, founder-president Akira Eto, was engaged for some ten years in the planning and overseas marketing of electronic musical instruments at a midsize audio equipment maker. Eto left the company in 1997 when it faced bankruptcy and set up AZIA Co., Ltd. with a capital of 10 million yen. He is what is called a spinout-type venture entrepreneur, because he resigned from one company to startup another company.

For some time after start-up, the company was engaged in a business entirely different from its current business. But the bubble economy collapsed, and a slumping economy ensued. Eto's business was hard hit and could never earn the revenue as he wished, and the business failed. Then, he began production of Web sites for others, and moved into the Internet business. In the latter half of the second fiscal term, he started up an Internet business, which began to post a profit in the third term.

He expanded the business into software development and started creating software principally for large companies on a contract basis. With the experience and know-how acquired in this business, he began developing original software, which currently is the company's mainstay.

The company's products are designed to provide an environment for development of applications for sales and marketing. In such an environment, application software used for e-commerce, customer management and portable terminals is divided into components by function, which can be developed systematically via the Web. A system can freely be edited using languages such JAVA and XML over the Web.

2) **Comprehensive support from National Support Centre experts for the public offering**

Ever since Eto started the current business, it has been his intention to go public. As he had so far preferentially used management resources to strengthen technical capabilities, he had been unable to build an internal structure for going public. When he learnt of the hands-on support program provided by the Center, he applied for support in August 2000 to overcome this problem.

The Support Center proceeded with support focused on expert deployment. During the first year, the Center helped draw up a roadmap leading to the public offering. The Center also helped draw up a business plan and deployed an expert in public offering. Two months later, the Center investigated how competitors were applying for patents for software they had independently developed, and deployed a patent lawyer with the intention of patenting a business model. In the second year when product development was starting to move ahead well, the Center deployed an expert to support IT sales and marketing, and studied how to check product marketability, develop a market and carry on operating activities. The Center also prepared a model contract to be signed with sales agencies and had it checked by a lawyer, who was also deployed by the Center. As a final support for the public offering the Center deployed a public consultant on social and labor insurance to review the company's rules and regulations. Thus, the Center deployed cumulatively five experts in a continuous manner for roughly two years.

3) **Public offering was made a reality in less than three months and at a low cost**

In November 2002 AZIA applied for public offering in the Green Sheet Stock Market. As sufficient preparations had been made in advance with the help of experts from the Center, the application passed examination without any problem, and AZIA Co., Ltd. went public in January 2003. Thus, the public offering was made possible in less than three months of application- the shortest time on record.

President Eto says: "Supported by the Center we were able to go public in a very short time and at a very low cost. It enabled me as president to comply with my commitment to go public before company staff."

Public offering in such a short time was made possible because the president and all employees had been aiming to do so since the beginning of start-up, never lost hope even when the company was going through difficult times, and carried through their original objective.

The greatest reason for their successful public offering is found in the fact that their software own developed was accepted (in the market) and the company was evaluated as being a company of high growth potential. Just like AZIA, many software companies start developing software on a contract basis with the intention of eventually developing their own software. Only a few achieve great success. Too many cases have been reported where companies failed to finance development costs or failed because they developed products that did not satisfy market needs.

When the economic bubble burst in the late 90's, the number of orders AZIA received for software development dropped significantly. Unit prices ordered lowered and unexpected costs were incurred in dealing with post-delivery troubles. All such things worsened AZIA's business results and kept AZIA in difficulties. However, AZIA never gave up development of its own products. The resulting products were given a high evaluation as a source of growth potential. All this tells us that the management decision that developing business using AZIA's own products was indispensable to growth.

Key Points of Successful Experts' Hands-on Support

1) **Successful advice by the expert**

The hands-on support is mainly conducted through expert's advice to SMEs. Success of hands-on support depends on how the expert gives effective advice to

the SMEs.

There are several key points of successful advice. First, the expert must decide the best decision support theme for the company. When a SME makes a request to the Support Center, sometimes the support theme of their request is not always the most appropriate. The Support Center and an expert must gain insight into the management of the company, and will propose the essential and most important support theme. Second, before the experts give advice to make solutions, the center and the expert have to make effective plans and goals of the support, based on an understanding and solving management problems peculiar to the company. Third, in order to attain fruitful results, the experts also collaborate with the management, the employees and the Center. Finally, the expert's enthusiasm for advice is essential.

2) **Project management of hands-on support**

The hands-on support by the Support Center is based on the Project Management System that has been originally developed in the National Support Center. The Project Management of hands-on support starts from making "the Hands-on support Plan" based on the initial survey, and the matching with the management and the expert.

Selecting the most appropriate expert and CAD for the company is very important for the success of the support. The expert and CAD must have much experience of supporting in SMEs in the industrial sector that the company belongs to, and they have to be able to get along with the senior management of the company.

The PM takes responsibility for selecting the most appropriate CAD and the expert in charge of the company. When the PM cannot find an appropriate expert from the list of the registered experts in the Support Center, PM has to look for a new and appropriate expert.

In order to know the status of the management of the company and the progress of the support, the PM, CAD and the expert make use of the system of reporting and communication. While the support is in progress, the CAD checks the validity of the advice and timely changes to the support plan or proposes a new additional support plan to the company. As the final project management action, PM must fairly assess the support results based on information from all relevant persons.

3) **The system of reporting and communication**

One of the important functions of the project management is the reporting and communication. The system of the reporting and communication in the hands-on support is composed of making a hands-on support plan, monthly report and action plan, monthly CAD meeting, quarterly survey report, final report, and so on.

The CAD makes a hands-on support plan based on the initial survey and it's distributed to the company and the expert.

Every month the expert makes a status report and an action plan of the advice, and the CAD and the PM each comment on it. The CAD meets senior management quarterly and check the validity of the advice. If necessary, the support plan will be changed. Every month the PM holds a meeting in each center, where all CADs attend. The CADs report on the progress of the support and the status of the SME's

management.

After the support assignment is completed, the CAD, the expert and the company each make a final report. Before the CAD makes a final report, CAD meets the SME senior management to assess the results of the advice.

4) **Assessment of the results**

The center assesses the results of the supports from the three points of view. First is the attainment of the stated goals, second is the improvement of business results, and third is customer satisfaction. When the center assesses the results, the information from the expert, the CAD, and the company is used, and each of these groups makes a final report. Based on that information, finally the project manager assesses the results.

In addition to the report, the Support Centers assess the results of the support based on the questionnaire sent to the companies. According to the data of the answers to the questionnaire in FY2004, 97% of companies where experts were deployed attained their goals that were planned, and 98 % of companies were satisfied with the results of the support.

5) **Successful value creation in SMEs through the expert's hands-on support**

When SME creates valuable management results through expert's hands-on support, leadership of the SME senior management is the most important. The SME's staff is to implement the expert's recommendations in the company. This is very important for the successful implementation of the expert's support. The management needs to ensure that the employees cooperate with the expert on the project, and has to release the information about the situation of the company to the center, and discuss the management problem with the center. After the support assignment is completed, continuous implementation is also necessary, and the company has to carry this out independently without support.

CONCLUSION

Hands-on support for SMEs/Venture businesses has been provided by the National Support Centers since 2000 in Japan. SMEs/Venture businesses could have created much value through the expert's hands-on support. This value is reflected in improved corporate policy and business plans, raising business results, initial public offerings (IPOs) success in new businesses, succeeding in research and development, improving management efficiency, fund raising and human resource development.

Because of the increase of the requests for hands-on support from SMEs/Venture businesses, and the expectation from the relevant groups to have the National Support Centers provide new avenues of support, the National Support Centers have grown in the organization, and developed this management system during the past five years. At present the National Support Centers have had many kinds of successful support cases that had been developed through the hands-on support. And the National Support Centers have been spreading the hands-on support, and creating new support methods for SMEs/Venture Businesses in order to produce strong SMEs/Venture Businesses that can be core businesses in Japan.

SMES AND VALUE CREATION THROUGH INNOVATIONS IN THE REPUBLIC OF CHINA

Prof. Benjamin J. Yuan
National Chiao-Tung University

INTRODUCTION

With technological developments and strategies constantly being improved, the only way for newly established corporations to grab hold of the market and come out on top is if they increase their pace in terms of technological innovations and adequate division of funds. The Republic of China possesses such qualities as having a competitive edge in terms of technological innovations, entrepreneurship, higher flexibility among business organizations, and strong commercialization abilities. Utilizing this competitive edge with supportive government policies and a systematic approach to support the "technologically concentrated" and "highly innovative" corporations which possess high growth potential can help promote a healthy continual growth and development of industries and increase the economic growth of the Republic of China.

However, aside from the internal cultivation of corporate strengths, the development of a supportive atmosphere is also a necessity in terms of the establishment of entrepreneurial and technologically innovative firms. In order for such firms to succeed, other environmental factors and location of key resources are essential in their development process. Domestic incubator environments mature through the support from the government, private enterprises, venture capitalists (VCs) and related support systems. These resources can be categorized into four dimensions: entrepreneur competition sponsors, the VC industry, the technology service industry and government supported entrepreneurial resources.

DOMESTIC VENTURE RELATED ENVIRONMENT AND RESOURCES

Venture and Innovation Award Competitions

Such competitions or awards such as the Technology Innovative Competition (TIC), Young Entrepreneurs of the Future (YEF), TIC 100 Technological Innovation Award, WEWIN Entrepreneur Award, among others are all current competitions and awards that promote venture activities. Students are not only given the opportunity to familiarize themselves with the process of starting up a company but also its innovative technologies, process of writing its business proposal as well as being introduced to its industry.

1. Technology Innovation Competition (TIC)
   Sponsor: Small and Medium Enterprise Administration, Ministry of Economic Affairs

   Objectives:
   (1) Promote idea developments to increase long-term economic industry values: to encourage SMEs to invest in R&D activities, boost up the level of technology, establish a competitive edge through R&D mechanisms through the presentation and commencement of awards; at the same time to allow other SMEs that attended to establish a place in the market

through the results of R&D and innovative ideas to stimulate the economy and facilitate the domestic industrial economic development.

(2) To set up the national investment benchmark: to invite the most outstanding domestic SMEs to participate in such competitions through the opportunities to be certified and recognized, allowing the award winning SME to become the most valuable investment target. With the wide promotion through media, the winning SME will be enhance corporate image as well as investment opportunities.

(3) To establish a standard assessment policy: to allow other industries to follow as reference as well as to increase their R&D capabilities through this establishment of a set standard of assessment through a strict judging process by an expert panel of judges.

(4) To build up an international innovative R&D base: to build up R&D mechanisms, trigger brainstorming, boost up international competitiveness for domestic SME's allowing industries in the Republic of China to convert from a manufacturing base to an innovation oriented industry through the presentation of these honorary awards and certifications.

Evaluation Criterion:
(1) The organization, budget, and manpower of the R&D unit
(2) The manpower and background of the operating team and the vision of the CEO
(3) Financial structure
(4) R&D ideas
(5) Technology application efficiency
(6) Business competitiveness
(7) Corporate innovative management mechanisms

2. Young Entrepreneurs of the Future (YEF)

Sponsor: Industrial Development Bureau, Ministry of Economic Affairs, ITRI, EPOCH, MIT Sloan School of Business

Objectives:
YEF's main purpose is to train the younger generation innovation and entrepreneurship through team building, industrial mentor guidance, venture competitions, training courses, etc. At the same time to pick out 15 representatives out of the attending students for the opportunity to visit new start -up companies, most advanced laboratories, promote the interaction between students in the Republic of China and those of Stanford University and MIT to share innovative ideas and business proposals and to allow them to develop an international networking and vision.

Evaluation Criterion:
(1) Entrepreneurship
(2) Innovation

(3) Global Networking
(4) Execution
(5) Team Building
(6) Business Plan

3. TIC 100 Technological Innovation Award

Sponsor: Advantech Foundation

Objectives:
Through the effectiveness of competition, students from all different fields will convert the innovation-idea into innovation opportunity, more closely to a realistic situation; it allows industrial experts to communicate with professors and act as joint advisors to the student teams, if this occurs then it would further convert the innovation-opportunity into an innovation-program between the industry and universities. Even further, it could convert the innovation-program into venture-planning, allowing students to convert the knowledge of what they have learned in class into reality and show their capability.

Evaluation Criterion:
(1) Capability of Value Creature of the Venture Team
(2) Feasibility on Business Plan
(3) Market Understanding, Technical Niche Market Understanding
(4) Disrupt Innovation on Technology or Service
(5) Timing to Market Entrance
(6) Cost Control and Pricing Analysis
(7) Cash Control and Financial Planning

4. WEWIN Entrepreneur Award

Sponsor: Industrial Bank of Taiwan

Objectives:
The 'WEWIN' in the entrepreneurial competition put on by the Industrial Bank of Taiwan represents teamwork and the spirit of cooperation; 'WE' stands for Win by Entrepreneurship and 'WIN' stands for Work with Innovation and Networking emphasizing the importance of innovation and technology. It is hoped that through the competition, the application and reproduction of new technology and the power of teamwork to stimulate innovation of younger generation in the Republic of China. With this, it hopes to encourage the younger generation to work as teams through cooperation, presentation of new products and innovation.

Evaluation Criterion:
(1) Industry, product or service content
(2) Market research and analysis
(3) Manufacturing and production plan
(4) R&D plan
(5) Marketing plan

(6) Management teams
(7) Financial planning
(8) Over all timeframe of project

Benefits of Entrepreneurship and Innovation Awards

a. Facilitate Teamwork
For a new venture, teamwork is one of the key success factors. Either from technical side or management side, the two should focus on the same thing at the same time to reduce the risk as a new start-up. In the past, the leading teams come mostly from the combination a different fields and backgrounds. For example, the group combining engineering students with technological knowledge and management students can combine the knowledge of technology and product for commercialization better.

b. Combining Theory with Experience
Starting up a venture in itself is a learning process. From the challenge a start up faces to form a company, the team still needs to learn and adapt and attend all kinds of seminars to help the venture team learn marketing research, organization charts, sources of capital, market analysis, strategic positioning, operational models, and financial planning etc. It can provide students with the adequate technical training in terms of cooperate planning and the vision needed for entrepreneurs. Today, entrepreneurial programs are gradually becoming a focus for most university development.

c. Entrepreneurial Guidance and the Transfer of Experience
Experiences and realities of a new venture cannot be learned in school. It is through a mentors' instruction, interaction and conversation that embeds the process of appropriate thinking and the correction of misguided thoughts. Today, most of the entrepreneurial courses are taught without an adequate environment to promote entrepreneurship and mainly through textbooks and manuals allowing fewer chances to practice. Through such competitions, all the attending team will have the chance to get instructions from an experienced team and through feedback and suggestions of the committee members will be given opportunity to learn and grow. All committee members are equipped with experience and an enthusiastic mind set to guide new starters; they can provide a lot of suggestions and comments during the contest process and later on even after the contest. Aside from that, students can turn to industry leaders, EMBA classmates, and alumnae for more guidance if necessary. The gain of knowledge through practice about their proposed product concept, marketing strategy or financial planning is an important harvest when entering such competitions and can generally not be offered by attending class.

d. Channel to Unite Knowledge and Resources
Every team needs support in terms of capital, market, production, etc, so, during the contest, students are given the opportunity to come in contact with all kinds of students from different specialized professions and different fields and form a team. Today, universities in the Republic of China are

beginning to encourage students to setup student clubs about ideas, innovations and ventures. This way, it can establish a linking system between knowledge and resources, which will be good for the facilitation of the new venture industry development in the future.

e. Increase Exposure of New Firms
With the use of media, firms can increase exposure and raise the level of involvement from the general society.

GOVERNMENT SPONSORSHIP AND RESOURCES

In addition to the competitions and awards, the government provides sponsorship and resources for enterprise development. With resources and funding from the (SBIR) project of the Department of Industrial Technology, the National Youth Commission of the Executive Yuan as well as the Small and Medium Enterprises Administration of the MOEA has allowed SMEs in the Republic of China to obtain such benefits as bank loans etc. These are all efforts put on by the government to help promote entrepreneurship and such related departments.

1. National Youth Commission, Executive Yuan
This commission promotes youth education entrepreneurship activities through:

   a. By outsourcing universities to dedicate and conduct a series of activities about ventures for one week:
   To nurture college students with correct venture concepts, to gain knowledge in terms of ventures, fulfill the venture preparation process through such as activities like seminars, lectures, successful and failed case studies, group discussions, venture team simulations, information demos, and other related support activities.

   b. Make service industry business plan contest activities for college students:
   To promote college students to join venture related activities of the service industry, to encourage venture intension, to broaden and deepen venture education, to nurture youth venture potential, and further develop the Republic of China into a venture type society.

   c. Conduct research topics related on youth education on entrepreneurship:
   To promote the youth entrepreneurship education, and build up its education model and support systems, National Youth Commission provides these as reference for the college to offer the same kinds of class in college.

   d. Supplementary to any institute to conduct venture contest activities.

   e. To increase the opportunities for youth to join the venture contests.

2. SBIR project of the Department of Industrial Technology
   The SBIR project encourages small business innovation research and is an essential part of the Department of Industrial Technology promoting domestic SMEs in the Republic of China by strengthening them with new technologies or the development of new products. According to the planned program of "MOEA promote enterprise developing industry technology methods" SBIR should be able to support SMEs in conducting innovative research, boost up their competitiveness and meet the following targets:

   a. Emphasize on the quality requirement of its products and whichever company that tries to apply to this program. Through this process, it can help the SMEs focus on innovative research, global logistics and international operation to gain more performance of this program.

   b. Under the existing program review and project management system, it can make changes and adjustment of the management system as needed to make it more flexible.

   c. Apart from its close communication and cooperation with MOEA's SMEA Incubation Service Center, it hopes to establish contacts with all local industries and gain commercial partnership relations; it should also focus more on contacts with venture capitals to nurture more SMEs for the time being.

SMES FINANCIAL WARRANT TWO-TRACK SYSTEM "JOIN DIAGNOSIS GUIDANCE"

In order to try to take care of SME with financial difficulties but have the potential to succeed in terms of finance, technology and operation management with further development, the government supports such ventures with better terms on loans to avoid situations brought about from bad economic environments.

Objectives:

1. To negotiate with related financial institutions helping SMEs with development potential to locate loans.
2. To help SMEs with competitiveness to solve their financial problems with adjustments on their financial structure allowing for a smooth growth.
3. To give ideas on operations management to SMEs who are not able to get loans from financial institutions and introduce them to other institutions to gain support and services.

RESEARCH AND DEVELOPMENT BUDGET

In the Republic of China, the total R&D budget was NTD190.5 billion in 1999 and it increased to NTD240.8 billion in 2003; in 2000 and 2001, the R&D budget grew slowly. In 2002 and 2003, the R&D budget growth rates have slowly been on the rise again (see Table 1).

Table 1: R&D Expenditure Index 1999 to 2003

Items	1999	2000	2001	2002	2003
Total R&D Budgets (NTD 100M)	1,905	1,976	2,050	2,244	2,408
Growth Rate (%)	8.0	3.7	3.7	9.5	7.3
GDP Ratio (%)	2.06	2.06	2.17	2.31	2.45
Government/Private R&D Expenditure (NTD 100M) Percentage (%)	721/1,184 37.9/62.1	742/1,235 37.5/62.5	758/1,292 37.0/63.0	855/1,390 38.1/61.9	917/1,491 38.1/61.9
For Manufacturing Industry, R&D Expenditure/Revenue (%)	1.26	1.14	1.26	1.30	1.31
National Basic Research/Total Research Expenditure Ratio (%)	10.6	10.4	10.8	11.0	11.8

Source:National science and technology statistics summary,1994, NSC
Note: 1999-2001 are not included the defence R&D expenditure, since 2002 has included the defence R&D expenditure

"The National Science and Technology Development Plan" (2001 to 2004) has determined the S&T budget should increase of 12% every year as target. In order to achieve this target, the Executive Yuan's National Science Committee has used 10% growth as their budget planning. However, the legal budget offered by the Legislative Yuan for 2001 to 2004 was only at 9.80%, 9.12%, 9.39% and 8.83% respectively. Although the budgets were not the targeted 12%, but at least there was a 9% growth (See Table 2).

Table 2 : Republic of China's Government S&T Budget 2001 to 2005

Items	2001	2002	2003	2004	2005
Government budget (NTD 100M)	517.0	564.1	617.1	671.6	771.4
Growth rate (%)	9.80	9.12	9.39	8.83	14.85

Source : 2005 central government S&T program review results

VENTURE CAPITAL INDUSTRY:

Venture Capitalists (VC) supports "new ventures" providing the necessary capital for stock shares and becoming involved in investment activities; however, not for the purpose of product operation. It can also be extended to investments in necessary mergers or restructuring through not-yet-IPO-companies to allow companies to successfully fulfill their dreams of obtaining finance.

In general, venture capitalists:

- Invest in new and fast growing technology-based companies
- Help the new technology start ups to develop new products, provide support for technology and product sales channels
- Invest in technology companies with stock shares/equity
- Provide the value-added supports through the involvement with operations

In 2004 there are 259 VC companies in the Republic of China. Nineteen companies were established in 2004 alone. The industry has total capital of NTD 184.5 billion and 9,782 investee firms (See Table 3).

Table 3 : VC Industry in the Republic of China 1996 to 2004

unit: NTD 100 Million

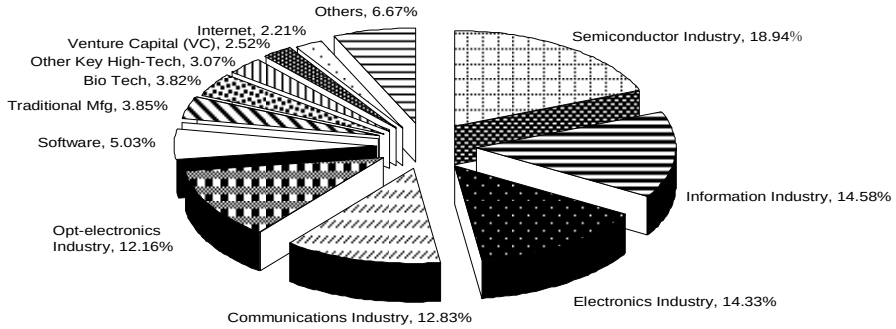
Company number analysis	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
VC company in total	48	76	114	160	192	199	217	240	259
New started VC Company	14	28	38	46	32	7	18	23	19
Actual operated company	47	72	107	153	170	176	194	214	229
New started VC growth rate	133 %	100%	36%	21%	-30%	-78%	157%	28%	-17%
Fund management Company	34	38	59	70	74	79	86	93	101
Capital analysis									
Capital received yearly	254.6	426.3	729.3	1,034.3	1,280.8	1,341.1	1,512.9	1,717.1	1,845.0
Average capital received yearly per company	5.42	5.92	6.82	6.76	7.53	7.62	7.80	8.02	8.06
Invest status analysis									
Total invested cases	1,158	1,839	2,994	4,493	6,343	6,957	7,560	8,719	9,782
Total invest capital	286.4	435.2	651.1	947.1	1,255.1	1,336.6	1,454.0	1,619.4	1,772.1
Invested capital each ear	8,8.13	176.00	215.91	295.92	308.03	81.46	117.40	165.40	152.70
Invested capital growth te	49.5%	99.7%	22.7%	37.1%	4.1%	-74%	44.1%	40.9%	-7.7%
Average invested amount per case	0.187	0.185	0.187	0.197	0.167	0.133	0.195	0.143	0.144

Source : Taiwan Venture Capital Association (TVCA)

Analysis of VC invested fields

By industry analysis, the industries receiving the highest investments each year are the semiconductor, consumer electronics, opt-electronics, communications, and biotech industries with 62.8% in total investments (See Figure 3). They are still the most favorable investment targets in the future. Analysis results for products, technology and market are as follow:

Figure 3 : 2004 Invested Amount Analysis by Industry



Source: ROC VC company association

1. Semiconductor industry

   The semiconductor industry in the Republic of China has a vertically and closely integrated distribution system structure; it has established a good reputation in terms of specialized foundry, making the Republic of China become the world's fourth greatest semiconductor manufacturer. From a policy viewpoint, the government promotes a series of semiconductor related programs to attract a number of IC designers to come back to the Republic of China or to start companies or conduct strategic alliances and making the semiconductor industry the VC's most favorable invested target still.

2. Consumer electronics industry

   Following the coming of the 3C era (computer, communication and consumer electronics), digitization is becoming a major trend. Under the driving force of 3C's, the consumer electronics products, including digitalized STB, STD, digital TV, DVD, PDA, and MP3 etc., are all equipped with high growth potential products. From this, the core components are the most urgent needs and have become the main target of VC investments.

3. Opt-electronics industry

   The Republic of China is the major place for the manufacturing of notebooks and monitors. The market needs are huge for the opt-electronics display, such as TFT and STN LCD, and has enlarged the domestic display market. So with this, the government put its display industry as one of their two ten-billion NT dollars industries. Other opt-electronics components, such as opt-electronics devices, optical input-output, optical storage, optical communication, laser and other opt-electronics products have more and more applications with tremendous potentials market. They will be the focus for the development of the opt-electronics industry in the future for the Republic of China as well as for most VC companies as well.

4. Communications industry
   Owing to the design and mass production capabilities of the Republic of China, the cellular phone manufacturing companies are well-liked by large international companies and the market shares are increasing at a rapid pace. The market needs for the transceiver equipments are growing and the market needs of the high priced LAN products and wireless local area network. WLAN are also growing rapidly. All of these have strongly supported the constant growth of this industry. At the same time, the linkage between communications and the Internet has facilitated a lot related products to grow very quickly. The low frequency analog devices, such as power management, digital audio amplifier, video processing of LCD TV, etc. are all the investment targets for VCs in the future.

5. Biotechnology industry
   Bio-tech has a broad spectrum of applications. It has been called the star industry of the 21st century and has become one of the main industries being promoted by the government. The Republic of China has the advantage of their medical clinical research and information from its National Health Insurance, high tech manufacturing technology and engineering application capability, well-developed agriculture technology and promote base, flexible SMEs, and its broad Chinese bio-medical technology manpower. The biotech industry is still in its embryonic stage globally so is characterized by the presence of opportunities, small fast growth potential companies with new capabilities, and high risks with high rewards. The VC investment strategy will focus on the possible tie with high competitive fields of the Republic of China, such as the semiconductor, opt-electronics, communication, electronics industry, to develop its biochips, biosensors, bioinformatics, biomedical materials, medical equipments, drug delivery systems and medical networks, etc. industry. Biotech is one of the two star industries being promoted in the Republic of China. The Executive Yuan Development Foundation matches up to 45% of the industries investments, through this, it will attract more VCs to invest heavily in the biotech industry.

6. Information industry
   PC's and its related products, such as monitors, motherboards, and scanners both are in the number one position in terms of market share globally. With the end of the rapid growth period of the PC industry, the next industry wave will be network related information family appliance applications, such as wireless communication, wide bandwidth network, video and audio storage, video-audio entertainment, portable information family appliances, and digital camera, hardware and software related products. Recently, the information family appliance industry development already combined the technology of communication, consumer electronics and information industry to become the driving force in the information industry competition.

TECHNOLOGY SERVICE PLATFORM

In the Republic of China, there are several technology service platforms, such as incubators, research based university's technology innovation and transfer center sponsored by the Industrial Development Bureau (IDB), Taiwan Technology Trading Market (TWTM) aimed at planning the IP evaluation principle and modifying patent laws,

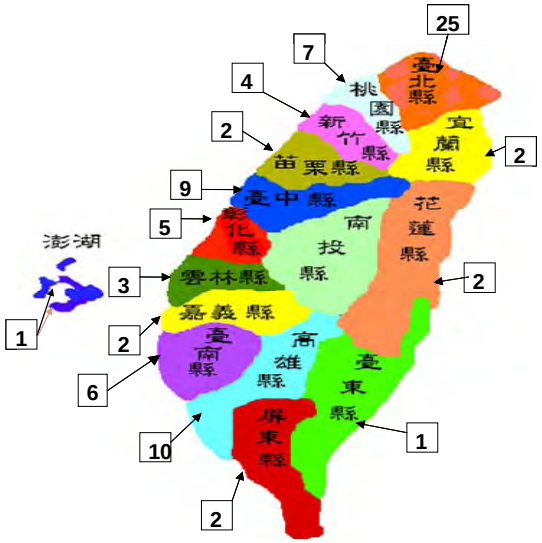
etc.

1. Incubators of the Republic of China
   So far, there are 81 incubators distributed throughout the Republic of China as shown in Figure 4.

   The major objectives for these incubator platforms are:

   a. establish the performance measurement system
   b. emphasize the extension and promotion
   c. nurturing the incubator specialized human resource
   d. promote the cooperation between incubators
   e. build up the regional incubator clusters
   f. extend the incubator service capability
   g. boots up the SME technology innovation and development capability

Figure 4 : Incubators of the Republic of China



2. Domestic Technology Innovation and Transferring Office of Research–Based Universities
   The National Research Council (NSC) set up its Technology Innovation and Transferring Office in fifteen research-based universities. First of all, it can boost the research-education institutions capacity to conduct research tasks. Second of all, it can help institutes to transfer their research outcomes into the industries. It creates a good communication channel between academics and industry.

3. Taiwan Technology Marketplace (TWTM)
   With the arrival of the knowledge economics era, MOEA IDB wants to lead the development of technology exchange service in the Republic of China, and make true the consensus of the planning to setup the technology and Intellectual property

trading mechanism. This is done by establishing the TWTM to integrate the service center and its information network, and to solve the current handicap of missing integration functions and compatibility issues with foreign technology. Through the matching mechanism of TWTM, and combining the value added service from members, it can help the industry catch the innovation opportunities and increase the competitiveness.

4. Government policy regulations
A developed legal environment will foster the development of innovators hence assisting in the boost of the venture environment. Additionally, it will help startups to grow and development in a more smoothly manner. Because of this, the government has passed related regulations in the past few years as shown in Table 4.

Table 4 : Government Regulation Related Fields

Modified Regulation	Modified Reason	Responsible Department
Patent law	According to the world trend, patent law is modified so it is the court's responsibility for providing invade inspection list	MOEA IP Bureau
Specialized laws for patent lawyers	Including the patent lawyers into the scope of professional and technician, and define its qualification, certification procedure, etc.	MOEA IP Bureau
Promote industrial upgrade rules	Coordinate the characteristics of service industry research activity to adjust the contents, make service industry research with tax waive or deduction	MOEA IDB
Rules for the set up of the commercial development research institution	To promote commercial innovation, gain international competitiveness through quality, set commercial development research institutions	MOEA Commercial Dept.
Financial commercial law for loan	To provide more channels for capital and domestic capital markets, to promote the domestic financial markets in order to match that of the international markets	MOEA Commercial Dept.

Source: National 7th S&T Conference 2005.1 MOEA

REFERENCES

MOEA SMEA, 2003, Annual Book of Incubators in Taiwan.
MOEA SMEA, 2003, Operation Guidance of Incubator.
NSC, 2004, Republic of China S&T Statistics Summary.
MOEA, 2005.1, National 7th S&T Conference.
2005, Government S&T Project Review
Websites

THE IN^6 INCUVESTOR® MODEL OF BUSINESS INCUBATION:VALUE CREATION ENCOURAGING THROUGH CO-ENTREPRENEURSHIP

Lee Lin Lee
In^6 IncuVestor® Inc.

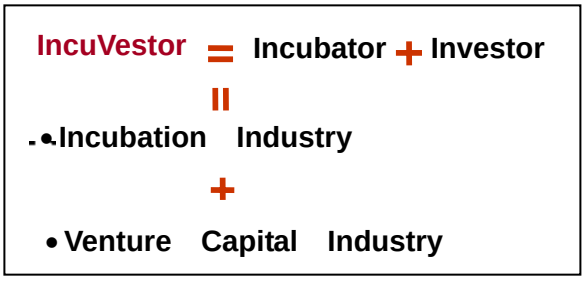
Editorial Note:

This country paper has been included because of the interesting model of co-entrepreneurship being married in a VC-Incubation model.

It has also been included in the form of an address rather than a paper.

In order to achieve the objective of this study meeting "To discuss how to strengthen entrepreneurial qualities and an entrepreneurial environment in line with current requirements for creative, innovative, technology-oriented, and knowledge-based mindsets and business practices," I select some relevant issues in my business incubation experience which I had explored deeply for a long time and have found some workable solutions. My topic is "The IncuVestor Model of Business Incubation: Value Creation through Encouraging Co-Entrepreneurship." I would like to explain some special words in my topic which are created by me to define some special meaning in the business incubation field.

Figure 1 : Organization and Individual IncuVestor



The integration of two IncuVestor is combined by two words which are kinds of industries, the incubation industry and the "Incubator and Investor" ideas:- venture capital industry.

IncuVestor can be an organization, can be an individual, and can be an organization works with many individuals based on a kind of very creative incentive program. I will explain in detail later.

Before we explain what is IncuVestor after all, it is better to review what incubator and VC can do and what they cannot do.

The incubator is to provide the business incubation services including hardware like office spaces, equipments, relevant facilities, and software like accounting, legal, financial, marketing, technical, management consulting services. As to the venture capitalists, they provide money to invest those very potential new ventures to make profit from exiting with high return. But when and how the start-up to can meet the VCs' investment criteria, is always a crucial challenge can face.

For most of the university-based incubators in the Republic of China, and also for

most of the incubators in other countries, there are many common services like mentioned above which incubator can do. But there are some things as below which the incubators cannot do.

1. The incubators usually cannot directly invest money in the incubated project because they have neither investment funding nor legal position to invest as a university-based incubator.

2. The human resource of the university-based incubators is very limited to take care of the potential incubatee in all aspects. For every incubator, usually there are only one full-time manager and 1-2 full-time assistant managers in addition to a part-time incubator director who is a university professor. The full-time manager and assistant managers, usually with less than 3 years' incubation experience, are the main human resources of the incubator. Their daily work is to handle the routine operations, they don't have enough time, energy and experience to really get involved in solving the problems of the incubatee.

3. Moreover, frequent personnel change of the incubator management team is another critical issue for the incubator to provide really creative incubation services for the incubatee. Why the personnel change frequency of the incubator management team is so high? It is because there is no creative, entrepreneurial incentive program for them to stay and contribute.

4. One issue even more crucial is that the university-based incubator can not make profit enough to be self-sustainable without the government's financial support. It is a very common problem globally.

As to the venture capital, VCs don't provide any incubation service and only invest in, especially after the dot com bubble being broken, those young companies which are already profitable, going to be scaled up and going to IPO stage.

In the US, at least, there are VCs they declare to invest in early stage start-ups, although I don't know what they actually do. But in the Republic of China, there is no VC which invests in early stage start-up. There are three SME Development Companies in the Republic of China, with 20% shares owned by the government, which focus on investing in the early stage start-up SMEs. They are recognized as the VCs for SMEs. Unfortunately, their performances are not good in the past ten years. But there was only one start-up invested by one of the three SME VCs that is very successful and profitable with 100% growth rate in the past five years since it spun out. Why and how does it happen? I will explain later.

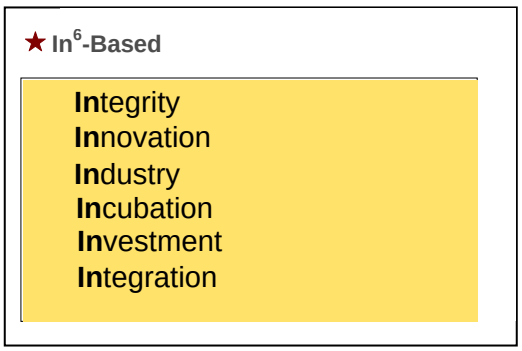
There is a well-know saying in VC industry which is "Never get involved in the operation of the company you invested." It means "VCs do nothing after they invested." In the meantime, if it is not necessary, VCs don't like to sit on the board because of considering the convenience of selling its shares. Theoretically, VCs say that they are valuable investors, they can bring in a lot of resources not only money. Practically, they can do nothing especially after investment. The dot com bubble disaster had already proved this very clearly. What is the critical reason the VCs can do nothing after investment? I will explain later as well.

According to what mentioned above, it will be obviously creative if we can design a party who can not only provide the hardware and the software business incubation services

as the incubator but also can provide seed capital for those start-ups from very early stage to late stage until the VCs would like to invest in.

Now, you can understand what the definition of the IncuVestor is and what are those IncuVestor can do. I initiated the first prototype of IncuVestor in the Republic of China since 1994 to incubate a group of software start-ups, three and half years later I invited VCs to invest in, four months after the VC's investment, I integrated the group of start-ups into one company for a large company of the Foxconn Group, the biggest connector manufacturer in the world, to invest in with NT$200 million and take over in 2000. Unfortunately, it has been four complete years after the large company taking over. I would not like to say the nine years old company is doing successfully. And it is why I have improved the IncuVestor model continuously all the way since 2000, and that is why the In^6–based IncuVestor coming out to be the new version of IncuVestor model.

Figure 2 : ★ In^6-Based



What is In^6? They are "Integrity, Innovation, Industry, Incubation, Investment, and Integration". I would like to give some details about actually the 6 key success factors (KSFs) of IncuVestor.

It took me two years of time to modify and improve the prototype IncuVestor to develop the new version of In^6–based IncuVestor via several real IncuVestor projects. In result, I found there should be six KSF to be included in the IncuVestor Model, without which, it is very difficult to run a successful IncuVestor. It means both of the IncuVestee and the incuVestor cannot be profitable.

When we are talking about profit, the six KSFs become the CCF, "Critical Competitive Factors" which also can be recognized regarding the profit model of the IncuVestor. The definition of CCFs is as presented in the next slide.

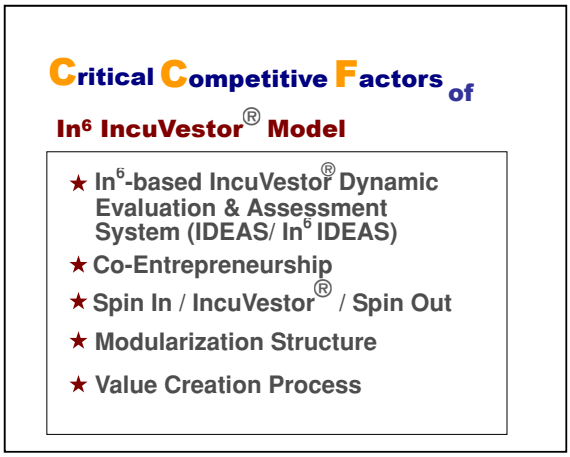
It will be definitely sure for you to agree with me on the profit issue of whatever Incubators or IncuVestors, of course, or VCs. Isn't it very innovative if we can build up a profit model of IncuVestor? Is it possible? The answer is "YES".

In the next few slides, I will talk about "How the In^6–based IncuVestor works."

First of all, based on the six KSFs, we have developed a patented In^6–based IncuVestor Dynamic Evaluation & Assessment System" (IDEAS of In^6 IDEAS).

We also have developed Integrity-based training program not only the competence-based training program to train those individual IncuVestor and the management team of the new venture. It is impossible to present in today's meeting.

Figure 3 : Critical Competitive Factors of In^6 IncuVestor® Model



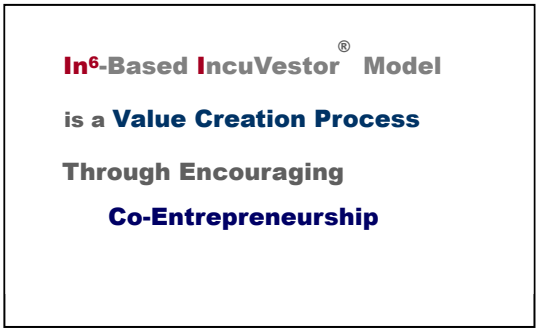
Second, a very basic concept or spirit of In^6–based IncuVestor is called "Co-Entrepreneurship". It means not only the incubate, the members of the new venture or the start-up, should be very entrepreneurial, but also the IncuVestor should be very entrepreneurial as well. It has to develop the so called "Co-Entrepreneurship" in all the incubation stages by working together very closely every day. Both of the incubatee and the incubator are entrepreneurs, they are in the same boat, if one fails; the other fails too.

Figure 4 : In^6-Based IncuVestor® Training Programme

It is a totally different concept from the traditional incubators. Why does the incuVestor have to work so hard? Because we set up a very creative incentive program called "In^6–based IncuVestor Incentive (III) Program" which the organization IncuVestor invests money, and the Individual IncuVestor, who joins into the new venture as a co-founder standing for the organization IncuVestor, devotes knowledge, efforts, sweats and tears and can get very high reward by sharing the profit with the organization IncuVestor if the new venture succeeds (Figure 1).

Figure 5 : ★ Co-Entrepreneurship

This is also the answer to the question, why the personnel change frequency of the incubator management team is so high? It is because there is no creative, entrepreneurial incentive program for them to stay and contribute.



Thank you for being a kind and attentive audience. I hope you will be able to learn from our efforts at value creation.

Country Papers

REPUBLIC OF CHINA

Republic of China's Platform of Entrepreneurship and Incubation

Su Wen-Ling
Ministry of Economic Affairs

INTRODUCTION

With the emergence of the knowledge-based economy, more and more attention has come to be attached to the question of how SMEs can make effective use of innovation, integrating information and knowledge so as to constantly create value for themselves. Under the wave of knowledge-based economy and globalization today, the economy, society and consumers' need have all become more diversified. Therefore, creative idea and innovation become a drive to stimulate the development and create value for enterprises. Faced with the changes in the economic environment, government has to construct a knowledge-based entrepreneurial society so that enterprises can focus on innovation and making their products stand out from the crowd for higher value creation.

"The Platform of Entrepreneurship and Incubation" is the most important policy in the Republic of China for the assisting SMEs in technology innovation, entrepreneurial information diffusion, and operation fund access. The platform is constructed by three elements: incubation services, entrepreneurial knowledge and financing support.

INCUBATION SERVICES – STRENGTHENING THE FUNCTION SME OF INCUBATION

Business incubation is a dynamic process of business enterprise development for the purpose of nurturing young firms, new products, and technologies. Business Incubators help SMEs access resources of innovation and entrepreneur, and enhance their abilities in R&D and starting up new business, in order to facilitate more competitive SMEs and promote economic development. Therefore, "innovation" and "entrepreneurship" are two core functions of incubators and play pivotal roles in SMEs' value creation.

Current Status of incubators in Taiwan

It costs about NT$20 billion annually to support the establishment and development of incubators under the incubation program. In 2005, there are estimated 90 incubators in the Republic of China. Through them, more than 2,000 SMEs were incubated, and investment capital amount of NT$29,100 million (US$856 million) was created. The incubation ambit of incubators in the Republic of China is shown in Figure 1.

Measures for Strengthening the Function of Incubation

The number of incubators grew rapidly in the past eight years. The most important goal at present is how to enhance the service quality and incubating function of incubators. There are six strategies for strengthening the function of the incubators.

(1) Expanding service functions of incubators
(2) Building up fine-quality incubating environment

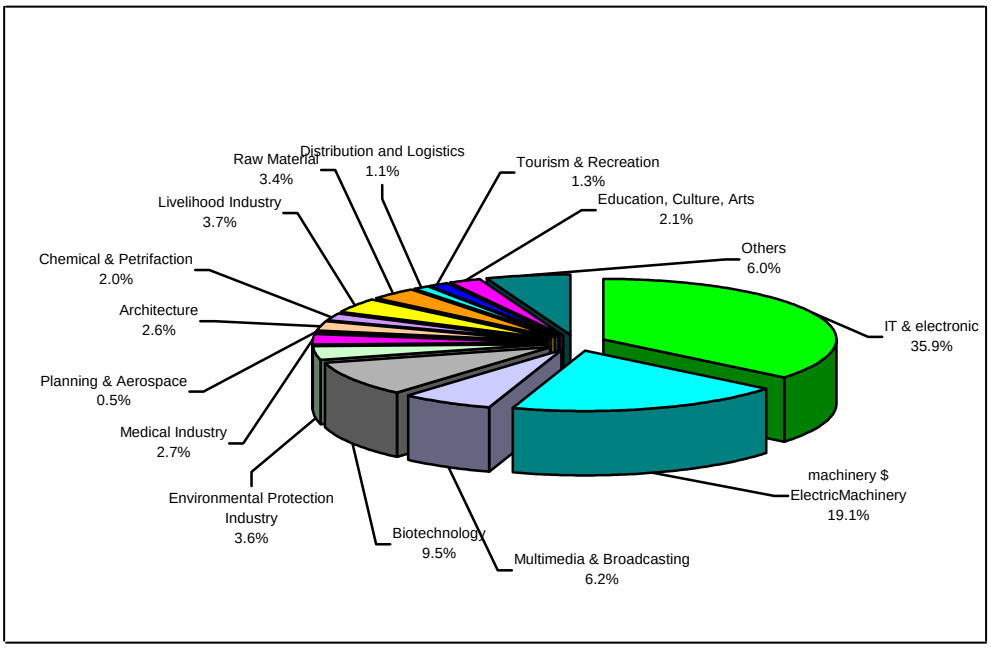


Figure 1: Incubation Ambit of Incubator in the Republic of China

(3) Training the professional managers of incubators
(4) Facilitating the cooperation and inter-action of incubators
(5) Popularizing the incubation information and service
(6) Evaluating the performance of incubation services

ENTREPRENEURIAL KNOWLEDGE – ESTABLISHING A LEARNING MECHANISM OF ENTREPRENEURIAL KNOWLEDGE AND INFORMATION

In the last few years, the economy, society and consumers' demand have all become more diversified. For starting up a new business, entrepreneurs need more information and knowledge to meet the demand of consumers and being survived in the changing economy. There is thus a real need for a comprehensive enterprise cultivation mechanism, so that those people interested in establishing their own business can obtain necessary knowledge and information for successfully operate their new business. The most important measures taken by government of the Republic of China to providing entrepreneurial knowledge in information were as follows:

1. Entrepreneurial Consultation/Knowledge Centers

In order to help new business to survive and thrive, a service network for providing inquiry and consultation of starting up enterprises was established. The Entrepreneurial Consultation and Knowledge Centers were set in every country and city of the Republic of China. The consultation centers provide inquiry services for the people who plan to or just establish a new business.

2. Entrepreneurial Learning Center

Entrepreneurs may often lack experience in new business establishment. As a result, they may be unable to survive in the intense competition that characterizes the

business world. The Entrepreneurial Learning Centers provide a range of courses on the practical aspects of business startup and help new businesses to obtain the required knowledge and technology. This training in turn increases the likelihood that the new business will survive.

3. Entrepreneurial Lab

Entrepreneurial Labs provide assistance and guidance to individuals who are ready to start up new businesses. The conditions for entry into Entrepreneurial Lab include:

(1) New businesses which are about to start-up or in their first year of operations.
(2) Business plans are feasible and can begin to establish a business.

4. Award of New Enterprises

The Award of New Enterprises has been held on a regular basis for the purpose to provide encourage mechanism for encouraging successful new business and also help new business to secure access to venture capital funding through the competition process.

FINANCING SUPPORT – HELPING NEW BUSINESS TO OBTAIN WORKING FUND

In order to stimulate investment in SME start-ups with strong development potential and to upgrade the overall level of industry in the Republic of China, a lot of financial support has been provided to help SMEs obtain working capital. The sources of financing include:

1. Providing of Reward

(1) SBIR Program
(2) Reward of SMEs Innovation

2. Providing of Working Capital

(1) SME Incubation Trust Investment Account
(2) SME Investment Companies
(3) Strategic Alliance with Venture Capita

3. Providing of Loans

(1) Entrepreneur Loans for Micro-enterprises
(2) SME Credit Guarantee Fund
(3) Low-interest R&D Loan Scheme

INDIA (1)

Spin Offs from Innovative Learning Environments: The Case of India

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INTRODUCTION

Academic institutions and research centers in India have been urged to develop greater links and synergy between ideas, capital and talent, to gain the best commercial benefits from technological innovation. The increased interaction has automatically encouraged the "innovation brokers" and the "venture capital industry" to take a serious look at possible investments in India.

Government and industries in the developed world have discovered the value of University-driven R&D parks, especially their contributions in terms of enhanced local socio-economic development and global competitiveness of the organizations involved. These parks are proving to be powerful generators of economic growth based on a unique partnership between:

a) committed and visionary national and local governments,
b) innovative, resourceful industries, and
c) dedicated, intellectual universities/research institutions.

This heady combination of government vision, industrial resources, and institutional knowledge is the sign of a new era coinciding with the dawn of the 21st century.

The world is now more respectful of technological ideas and innovation than ever before. The information age we are living in is fueling the demand for technology arising from all sections of society. Information and technology are being seen as potent tools for achieving the ultimate socio-economic goal of egalitarian progress. Additionally, the onset of a new economic system of trade coupled with complex issues of intellectual property and knowledge sharing necessitate the above synergy among government-industry-university.

The experiences are most encouraging as well as challenging. Many universities now host government and/or industry-sponsored incubator facilities. The need to infuse the spirit of entrepreneurship among young, energetic, and raring-to-go students cannot be overstated. Incubator facilities and R&D parks provide, perhaps, the perfect answer to tap the best of our students' technological potential. The results of the work carried out in such facilities have the highest probability of being transformed into commercially successful efforts. The reasons are not difficult to see - firstly, the passion for innovation among the young university-based research groups, secondly, the hard commercial motives of the sponsoring industrial organizations, and lastly (and, most importantly) the vision of enlightened national and local governments.

The notable cases of this partnership from across the world are from:

- Silicon Valley, California, USA
- The Maryland Incubation Network, Maryland, USA
- The Boston Route 128, Massachusetts, USA
- The Research Triangle Park, North Carolina, USA
- Zernike Group B.V., Netherlands

- The SPINNO Programme, Helsinki, Finland
- The Chalmers Innovation System, Sweden
- The EPFL spin-off programme, Lausanne, Switzerland
- A*plus*B Programme, Austria
- Yissum, Israel
- The Barton Research Precinct, Adelaide, Australia
- Hsinchu Science Park, Republic of China
- Multimedia Super Corridor, Malaysia
- Society for Innovation and Development, Bangalore, India

The establishment of international business and science parks has been strengthened by incubation programmes, adequate funding, educational/training support programmes, and ample publicity. In some cases, intermediary firms have catalyzed the development of new market opportunities and strong linkages among the partners. Different models have been used to foster R&D parks. They include:

- Government initiated programmes,
- Evolving innovation networks,
- Phased innovation development programmes,
- Government-backed venture capital assistance programmes.

All these models have essentially sought to create synergy with vision (of government), ideas (from Universities), and capital (from industry), in order to derive maximum socio-economic benefits through technological innovation. “Innovation brokers” and the venture capital industry have provided the resources and managerial capabilities to realize the objectives of commercialization. The R&D parks are recognized as the prime movers of technological competitiveness in the knowledge-driven world of today.

The success of R&D parks hinges not only on the provision of financial support in the form of grants and loans, but also on the provision of appropriate infrastructure, educational/training support, business incentives, marketing and other intermediary services. Eventually, the success hinges on the presence and use of a viable ‘business model’. Such a model must enable university researchers to access the resources and managerial capabilities for performing innovative, market-oriented research. The business firms backing such research would be well endowed to develop business plans, do market research, build business partnerships, plan for product development, protect intellectual property rights, arrange the needed technology transfer, and implement product introduction and distribution plans.

The establishment of R&D parks has resulted in several benefits accruing to the partners, collectively and individually, and more notably, also to the local community. The benefits include:

- Spawning of knowledge-intensive, hi-tech jobs, leading to several positive economic multiplier effects such as employment growth and higher local tax revenues,
- Steady in-flow of valuable foreign exchange through direct and indirect investment,
- Holistic development of modern public infrastructure, including communications, transportation, power systems, education, health-care, and recreation facilities,

- Rapid promotion of the local government's "image" and "goodwill" among all stakeholders—local, national and international.

THE INDIA SCENARIO

Creative entrepreneurship has been shown to be generated more in small to medium enterprises (SMEs). The entrepreneurship in India in the technology or knowledge section is more based on the successful business model of America's Silicon Valley, which is designed to nurture innovation, rather than the traditional corporate/bureaucratic strategy based on resource allocation, spreading risk, soothing egos and avoiding failure.

The current model of India, in addition to cultivating technopreneurs, also encourages them to establish a regional base in India, once they are established and successful elsewhere. The lower cost structures and rapid industrial advances of neighboring countries also puts a boost on the local research centers to cultivate entrepreneurs. But the entire emphasis has focused on the high technology sector. Given this backdrop the "IT Corridor" in Bangalore was promoted as India's Silicon Valley and had already become a sophisticated regional hub for advanced and high precision electronic industries. Given Bangalore's long-established status as a cosmopolitan city which also houses two of the best academic institutions—the Indian Institute of Management, Bangalore (IIMB), & the Indian Institute of Science (IISc), it is seen as an attractive, cost-effective alternative. The city also boasts of housing the best companies viz... Infosys Technologies and Wipro in the software field, and Biocon in the bio-tech field only add to the attraction.

The highlight of India's potential comparative advantage in international markets is in high value added areas such as:

- Software services and products
- Biomedical, bio-informatics and pharmaceutical products
- New plant-based industrial and food products
- Remote sensing equipment
- Aircraft and car components
- Telecommunications technology

For a country with India's profile, it makes sense for governments, (local and national) to invest and the institutions to collaborate in the creation of world-class capabilities and enterprises in these fields. Support in the form of infrastructure, education, business incentives, market development and specialized intermediary services have also been made available.

Academicians – Entrepreneurs Network

Even when they work together, entrepreneurs and academics need help in establishing viable businesses in the cutting edge areas of high technology. As John Kenneth Galbraith pointed out entrepreneurs and academics have very little in common. In his memoirs, for example, he sums up the difference by referring to the business philosophy of his friend, Ralph Flanders, a machine tool manufacturer: "I got to the top in my business", said Flanders, '"by getting up earlier than anyone else—working harder than anyone else – inventing a machine that made a great deal of money, having a keen eye for the interests of the company, and by marrying the daughter of the owner." Academics are not always that practical. Indeed, business academics, who get too close to business, often put their academic careers in jeopardy.

Worldly academics not only attract jealousy but they also tend to lose credibility. Scholarship, it is said, requires detachment, lots of footnotes and, in most cases, irrelevance to the practical world. Again, based on his own experience at Harvard, Galbraith argues that: "Scholarship in the social sciences is assessed by its depth and precision, but also by the length of time it has required. A quickly completed job, regardless of quality, is bad. A five-year effort is good *per se*. A lifetime work, not quite finished at death, is superb".

This mindset has been changing in India—in the form of the Department of Science & Technology (DST) or Department of Bio Technology (DBT), which is responsible for allocating the most prestigious research grants to academics.

Other well-intentioned attempts to bring business and academia together have had good impact in India as compared to other Asia Pacific countries—Technology Parks. These centers go beyond the dictionary meaning of their operations. Initially when they were established, it was expected that the parties would provide applied research centers, incubators, spin-offs, lots of cocktail parties, and talks by politicians and visiting gurus on the general theme of technology transfer. However, today these centers, in addition to these activities just listed, are also in the process of setting up technology labs or funding incubation facilities in major academic institutions in India. For example: there is a center funded by Infosys technologies (a global IT services company diversified into IT products, IT consulting and BPO) in Indian Institute of Management Bangalore (a premier B-school in India ranked among the top three) (IIMB) to nurture and encourage budding entrepreneurs with the strong collaboration of academics at IIMB. A similar center has also been established in Indian Institute of Technology Bombay (one of the premier science and technology institutes in India) (IITB). The center at Indian Institute of Science, Bangalore (the number one research institute in India) IISc went one step further where the funding entity has set up a research facility to work in close tandem with the faculty and researchers at the Institute. This develops synergies between theory and practice.

The model adopted in India for promoting technopreneurship, is critically based on the developmental processes. It address at least five processes including innovative, market-driven applied research, access to seed funding, the incubation of a viable commercial activity, spinning off a self-sustaining enterprise and successfully marketing and distributing its products. The tie-up between the entrepreneurs and the academic researchers' bridge the gap on the management capability needed to effectively negotiate all these functions and transitions. In addition to technical competence, the university also offers continuous services in terms of assessing the commercial viability of the project in terms of return on capital employed, sourcing of finance, strategic optimization, relevant knowledge and people management functions.

It is generally agreed that India has a relatively moderate innovation system. Apart from the lack of adequate funding, there is a high level of fragmentation and confusion. Awareness, and use of incubators is very limited and the potential benefits of clustering activities and resources in and around technology parks is only just beginning to be recognized.

Successful innovators, multinationals and small and medium-sized enterprises alike, are pooling forces with partners and engaging universities and research institutes to conduct contract research while continuing with their own development to keep their core competencies. Classic examples of those are Monsanto (a multinational bio-tech company) synergizing their research and development practices with IISc and Midas Technologies (a start up telecommunications company) with the electrical & electronics department of Indian Institute of Technology Madras. Most of these initiatives to establish these

incubators at the university are from the private sector.

There are also regular joint seminars and meetings. Companies in addition to product development and enhancing creativity also tend to instigate interaction through seminars and meetings they initiate if they are seeking specific expert help from an academic. Indeed, some technology parks have succeeded in creating any university spin-offs.

While acknowledging the attraction of being located near an "associated" university, technology park companies appear to gain more specific benefit from it, which reinforces the developed integrated business model. As said earlier the proximity to the academic world draws the advantage of continuous monitoring on issues relating to the operational, technical and financial management at least till the corporate reaches the mezzanine stage. These technology parks should be seen "not as property-based ventures" but rather "as a knowledge-intensive industry". The Indian Government has attempted, on a small scale and with a limited budget, to promote this philosophy through its Technology Diffusion Program. This scheme provides modest funding to finance research alliances, the creation of networks, the holding of conferences, the provision of demonstrations and the conducting of applied research audits in the priority areas. However, so far the program has done little to hook technology parks into the international network.

The ability to commercialize products should be seen as a competence in its own right. It is both a source of competitive advantage and is in itself the basis for an additional emerging industry which requires special cultivation. University researchers currently not only emphasize invention but also critical commercial variables such as "strategic industrial collaboration", the adoption framework and organizational capability. Both universities and technology parks pay greater attention to managing their linkages during the critical stages of business incubation.

THE IIT MADRAS EXPERIENCE SNERGY IN GOVERNMENT—INDUSTRY—UNIVERSITY

IIT Madras is perhaps the first technological institution in India to offer a post graduate programme in Entrepreneurship—M. S. (Entrepreneurship)—which commenced in 1983-84. The full-time M. S. (Entrepreneurship) programme (by research) in which students are guided by faculty members of different departments, depending on the technology they develop.

As part the institute's effort to encourage creativity, it organizes a technology festival called Shaastra, where in they conduct a business plan competition called "Breakthrough", with a technology focus. The Institute has also conducted annually over the past seven years a 14–week program called the Small Industries Management Assistants Program (SIMAP) in association with the Small Industries Development Bank of India (SIDBI). This program is coordinated by the management faculty and is attended by a few entrepreneurs among the other students. In an international program on Technology and Sustainable Development, organized by our Institute and EPFL, Switzerland, conducted during January to April, 2002, a full module on entrepreneurship was offered to the participants who came from 20 different countries. In the new MBA program of our Institute there is an elective course. This is to be offered soon (since the program commenced only in August, 2001).

Additionally, there is a plan to introduce "Entrepreneurship" as a Minor Stream in the B. Tech. program. Students opting for this Minor Stream must earn twelve academic credits in partial fulfillment of the requirements of the B. Tech., degree.

The institute is also planning to establish a new company called "Technovator", which will *inter alia* provide technology incubation and transfer support for technologies developed in-house through the efforts of our faculty, students and staff.

The students have an Entrepreneurship Encouragement Forum (EEF), in which they have featured several invited talks by accomplished entrepreneurs, in order to imbibe the spirit among the young participants. The EEF has been operational over the last four years. This has triggered a couple of successful ventures in Chennai. These companies were established by fresh graduates of our Institute.

During early 2002, the students conceptualized and organized a unique computer-based entrepreneurship solutions competition called "Start-Up" in which more than a hundred teams from different institutions in Chennai city participated. In IIT Madras' track record in entrepreneurship has been noteworthy.

Over the last few years, owing to the high media exposure given to successful entrepreneurs, students recognize entrepreneurship as a viable career option. More importantly, students clearly see and believe in the constructive role of entrepreneurship in the socio-economic development of India.

The benefits students seek from the institution are:

a) The required impetus that would prove to be crucial to start business ventures, help in maximizing potential.
b) To activate the currently present latent entrepreneurial skills. A resource pool of high net-worth individuals, including alumni, to mould and motivate them.
c) To help retain intellectual capital within the country, so crucial for country's economic growth.
d) To provide students with a better perspective while they pursue their academic programs. We would then have a well-defined context, or a backdrop, to understand what we learn and why we learn.
e) An increase in the level of entrepreneurial development activities in the institute will present opportunities to learn and execute ideas.
f) Recognition, that there is a huge gap between idea generation and idea execution. Formal and informal inputs of entrepreneurship practice will bridge this gap.

The M. S. (Entrepreneurship) Program

The Indian Institute of Technology Madras (IITM) pioneered entrepreneurship education in the Indian higher technological education by introducing its M.S. (Entrepreneurship) degree program in 1983-84.

The main objectives of the program include:

a) identifying engineering graduates with entrepreneurial talent and ideas, and selecting them to pursue the program,
b) exposing the students to the exciting challenges and opportunities in the multidisciplinary world of hi-tech entrepreneurship,
c) extending the Institute's expertise and hi-tech facilities to enable the students to design, develop, test and prove the technological viability of products/processes that could be eventually commercialized by them, and
d) develop, nurture and sustain an entrepreneurial spirit among the students.

The program's focus is on the development of hi-tech and/or import-substitute products/processes. It is structured into two stages. In the first stage, the students undergo an intensive orientation program consisting of specialized lectures through which they are

familiarized with:

a) Incentives and facilities available for setting-up industries.
b) Rules and procedures for setting-up industries.
c) Market survey and research methods for identifying products/processes that have techno-commercial viability.
d) Project planning, financing, implementation, monitoring and control.

During the orientation program, the students are introduced to faculty members working in related areas/disciplines. Following several rounds of discussions between the students and the faculty, the students decide on a product/process to be developed. They then submit a pre-feasibility report that gets evaluated jointly by an independent expert committee consisting of IITM faculty and representatives of banks/financial institutions. Only after the expert committee approves the pre-feasibility report and accepts the product/process development proposal is the student finally registered for the M. S. program.

The students go through specific relevant courses including *Market Research and Management*, *Financial Management*, *Product Design*, and in addition to related area/discipline of work. The students then work on their product/process development project under the guidance of a faculty member.

During the program the students have to initiate and carry out market studies on the chosen product/process, discuss and negotiate for financial assistance and site allotment with state- and national-level banks/financial institutions, and get the product/process tested and approved by specified agencies for technical viability, if required.

Finally, the student's work is evaluated on the basis of a two-part thesis submitted to the Institute. The first part discusses all the technical aspects of the product/process development including conception, design, development and testing/proving. The second part briefly describes the product/process and discusses the techno-commercial, logistic and administrative aspects pertaining to setting up an industrial unit for commercial-scale up.

Over twenty students have completed the course requirements. Some of the students who pursued the program are successful entrepreneurs now. Three of them have received the Government of India's awards for entrepreneurship excellence.

Some of the products developed by such 'entrepreneurs' are:

- Programmable process controllers
- Earth leakage circuit breakers
- Microprocessor based telephone metering system
- Personal computers for Indian languages
- MODEMs
- Neo-natal care system
- Microprocessor based ignition timer-controllers for automobiles
- FRP insulators and carbon fiber machine elements
- Polymer concrete tiles
- Fiber glass reinforced joineries

Much of the success of this program is due to the constructive, well-coordinated relationships between IIT Madras, the Department of Science and Technology (Government of India), the Industrial Development Bank of India, the State Bank of India, various other banks and financial institutions, and entrepreneurship development institutions. This enabled the creation of a "right" atmosphere for entrepreneurship development—an excellent technology-centered learning environment, exposure to banks

and financial institutions, and the IIT brand image.

Technology Concept-To-Commercialization Ventures

During the last few years, there has been a sharp and purposeful increase in our country's efforts towards establishing our competitive presence in global IT markets. Simultaneously, there has been a significant national boost to spreading IT education and entrepreneurship. In this context, IIT Madras has conceptualized, designed and developed technologies that have been evaluated and promoted commercially by business organizations successfully.

The best success stories are found in teams formed by faculty members of the Department of Electrical Engineering and the Department of Computer Science and Engineering. Initially, the communication technologies (hardware and software) were conceptualized, designed and developed by a group of dedicated faculty, research scholars and students in the Institute's laboratories. Their work progressed through the stages of "proof of concept" to "field tests" and "technology demonstration". This enabled the technologies to be "ripened" for techno-commercial evaluation by prospective manufacturers.

Those who evinced interest were then "licensed" to commercially manufacture the selected technologies. This arrangement was perhaps necessitated by the nature of the parties involved—the academic Institute on the one hand and the commercial manufacturer on the other. The development team's technology output and the manufacturer's commercial interests seamlessly merged to create a rare Institution-Industry synergy. The sayings "success is its own reward" and "success chases itself" proved right, and manufacturers went one-step further to support the technology development process from even the conceptualization phase. The technology development projects could now afford industry-level salaries to the concerned staff. Advance licensing of products followed. Terms of licensing extended from design to manufacturing. More investors got interested because the commercial advantages became evident.

This process unfolded further, and eventually led to the incubation of a few hi-tech companies (e.g. Banyan Networks, Midas Technologies, n-Logue), which were promoted by IITM alumni and had the core faculty in advisory positions. The financial support of Venture Capital (VC) organizations naturally followed. Today, the VCs are ready to extend their support from day 1! The core faculty members have recognized the VC's need for “good” project proposals. In some instances, students' projects serve as the “seeds.” The core faculty members perform technology evaluation of proposals and prospective investors either accept or reject them based on other criteria.

In a different context, the strong commitment of the core faculty to India's socio-economic development recently led to the formation of a Section 25 company, managed by a trust consisting solely of academics. This organizational arrangement has been resorted to primarily for maintaining greater importance of socio-economic development of the masses over commercial outcomes. The company's mission is to spread IT services usefully into the rural areas. Not surprisingly, even the earlier investors in the group's other techno-commercial efforts have strongly supported this venture.

Student Academic Projects

These projects possibly present the biggest opportunity for technology incubation within the higher technical education system in India, and especially among the IITs. Every year, hundreds of final year graduates and post-graduates work on specific technology-centered projects. Even a cursory study of these student projects will reveal

that many of them are oriented towards developing technologies related to IT, although in specific knowledge or application domains. Information on these projects, and wherever applicable, their potential techno-commercial extensions, is not widely shared even within the academic community. In some cases (including IIT Madras), summary information on these projects is compiled and is openly available for access by any interested party. However, the next step of taking a project from its report stage further up to examining its potential techno-commercial feasibility is not forthcoming. This examination is necessary for technology incubation, and is best performed by a dedicated set of experts.

Given the routine activities of teacher-researchers, and graduates and post-graduates seeking their first job, they will not ordinarily pursue these necessary steps in technology incubation, let alone their interest in entrepreneurship as a career. Such a condition warrants the creation of a technology-examination group that will dedicate itself to thoroughly studying the student projects, assessing their techno-commercial potential (including potential intellectual property implications) and share the information among a more interested audience. This mechanism is more likely to result in fruitful technology incubation efforts, and enable the pursuit of larger national-level technology objectives.

CONCLUSION

IIT Madras has also responded to the needs of technology incubation by recently creating a Cell for Technology Incubation, Development and Entrepreneurship Support (C-TIDES) having two professors coordinate its activities. The work of this cell is presently in the initial stages, and specific activities have been identified for implementation. By design, the cell will be interested in cooperating with organizations and institutions involved in technology incubation efforts.

REFERENCES

Institute for Research into International Competitiveness, 1999, Report: Contributing to the Community through Education and Research. Quantifying the Economic Impact of Curtin University of Technology on the WA Economy, June, Curtin University of Technology, Perth, p. 66.

Hamel, G. 1999, “Bringing Silicon Valley Inside”, Harvard Business Review, September-October, pp. 71-84.

Report, “Business Incubators to be Reviewed”, R&D Review, August 1999, p. 6.

Business/Higher Education Round Table, Survey of Benefits from Commonwealth Government Business Programs, Melbourne, September 1999, pp. 2-5.

Department of Employment, Training and Youth Affairs, 1999, University and Industry Research Partnerships in Australia. An Evaluation of ARC/DETYA Industry-Linked Research Schemes, DETYA, Canberra.

Clout, J. 1999, “Time to Develop our Bright Ideas”, Australian Financial Review, 12 October, p. 28.

Beer, S. 1999, “Start-ups Could Miss New Tide of Venture Capital”, Australian Financial Review, 6 October, p. 36.

Beer, S. 1999, “Technology “Crazies” Must Lift Their Game”, Australian Financial Review, 1 September, p. 36.

Department of Trade and Industry Overseas Study Mission to Australia, 1999, Science, Technology, Innovation and Enterprise. Sharing the Australian Experience of Science Parks and Economic Regeneration, March, University of Central England

Business Schools, Birmingham.
Institute for Research into International Competitiveness, 1999, Report: op. cit.
Formica, P. 1998, “Indigenous and Exogenous Economic Development–A Voyage to Innoland”, Public Sector Research Unit Discussion Paper Series, no. 2, Curtin University of Technology, Perth, p. 9.
Commonwealth Department of Industry, Science and Resources and the CSIRO, 1999, ‘Forum: Emerging Industries and Technologies’, 17 August, Canberra.
AVCC, 1999, Univation, vol. 14, no. 1, May, pp. 77.
Australian Financial Review, 15 October 1999, p. 16.
See, for example: Sorenson, R.Z. 1997, “What the Japanese can Learn from Entrepreneurship in America”, The Asian Manager, July–October, pp. 81-83;
Fielden, J. 1998, “Enter the Dragon: Changes in University Management in China”, The ACU Bulletin of Current Documentation, December, pp. 4-6;
Lee, C. S. 1999, “Size Doesn’t Matter”, Far Eastern Economic Review, 4 March, pp. 52-53.
Dana, L. P. 1999, Entrepreneurship in Pacific Asia. Past, Present and Future, World Scientific, Singapore, p. 149.
Milton-Smith, J., Lee, R., Chan, Y. L. & Tang, K. F. 1999, The Making of a Technopreneur, ITE Alumni, Singapore, pp. 59, 161.
Kraar, L. 1998, “Taiwan Does it Right”, Fortune, 17 August, p. 38.
Feature article, 1999, “Silicon Island”, Asia Inc., September.
Tan, Q.G. 1997, “Growing Pains of SMEs in the Philippines”, The Asian Manager, July – August, pp. 86–87.

INDIA (2)

Facilitating Value Creation In India: The Needs and Current Developments

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BACKGROUND

Today organizations are knowledge based and their success and survival depend on creativity, innovation, discovery and inventiveness. An effective reaction to these demands lead to innovative change in the organization, to ensure their existence. The rate of changes is accelerating rapidly, as new knowledge idea generation and global diffusion are increasing. Creativity and innovation have a bigger role in this change process for survival.

The modern economy combines knowledge with management to generate wealth. Growing economies need innovation. Many of path-breaking innovations are developed into new products, outside of laboratories of leading industry giants, in small entrepreneurial companies. These innovations boost economic growth by providing new jobs and technology.

The word innovation comes from the Latin word “Innovare” which means to “make new”. Innovations involve new methods of doing things and are associated with risks, failure, new ways of management thinking and unlearning of old ways. Innovation is the process of doing new things. It is important to recognize that innovation implies action, not just conceiving of new ideas.

According to Drucker “Innovation is the means by which the entrepreneur either creates new wealth producing resources or endows existing resources with enhanced potential for creating wealth. Arthur D. Little has classified innovation further as:

- Product Innovation
- Process Innovation
- Organizational innovation

a) Product innovation is defined as the creative development and commercialization of radically new products or services, using new technology and linked to unmet customer requirements.

b) Process Innovation is defined, as the development of new ways of producing or delivering services that lead to cost efficiencies or speedier deliveries.

c) Organizational innovation is defined as the development of new business processes and new ways of conducting business, that provide competitive advantage.

IMPORTANCE OF VALUE CREATION FOR INDIAN ENTERPRISES

Innovation has always been the hallmark of small and medium enterprises. SMEs that integrate innovation can reap significant benefits. Studies conducted by US Department of Commerce, revealed that since World War II, 50% of all innovations and 95% of radical innovations, have come from new and smaller firms. The key process in the economic force of changes is the introduction of innovation and culture of innovation in the enterprise. The innovation process is seen as a cycle involving trial and error, where problems, at some stage of development lead to the need for reevaluation of the earlier

stage of the innovation process.

Technology is the harbinger of change development; developed nations spend substantial amounts on technology. It is believed that Japan spends not only on acquisition of technology but also spends seven times more on adoption of technology. Technology in conjunction with finance management, marketing capabilities can act as a powerful tool for value creation.

Financial assistance is an essential element for commercialization of indigenously developed technologies and adoption of imported technologies and management philosophy for wider domestic applications. Common facilities such as testing, tool room services, technology up-gradation, modernization, quality improvement, training for entrepreneurship development, trainings for skill up-gradation, preparation of project and product profiles, technical and managerial consultancy, assistance for exports, pollution and energy audits etc can also assist an enterprise for creating value.

CHALLENGES FOR VALUE CREATION FOR INDIAN ENTERPRISES

Challenges to value creation can be broadly classified as:

i) Managerial challenges
ii) Financial challenges
iii) Technological challenges

As the man behind the machine is the most important, I will first discuss the managerial barriers to innovation in the context of Indian SMEs. India, as you know, was a protected market economy before liberalization. The Indian industrial environment was traditionally identified by its regulative and protective characteristics. Till 1990, the Indian economy was inward looking and protected from internal and external competition. In the absence of competition, firms did not develop the technological capability needed for penetrating the global market. This decade long protective environment also reduced the risk-taking capacity of the SME manager and made him complacent and averse to risk. He chose to avoid risky situations.

Earlier, Indian firms had quite often followed an opportunistic approach to growth, as opposed to capability driven approach that seeks to strengthen key aspects of manufacturing. Consequently, firms have paid very little strategic attention to their shop floors in the last few decades. Today Indian industry is also facing tough competition from imports in the domestic markets. This competition is in terms of new designs, new usages, reduced cost, improved quality, products with higher performance and variety, better services, all delivered simultaneously to enhance value to the customers.

Adopting an innovation is risky by definition. It is possible for most SMEs to deal with perceived risk-if they have enough time and resources. They need time to think and reflect on the benefits versus the level of risk involved. They also need resources to investigate the pros and cons of a proposed innovation, e.g. customer reactions, financing, and production capacity. Unfortunately, today both time and resources are in short supply.

Technological Challenges

Technology is the key to enhancing a company's competitive advantage in today's dynamic information age. SMEs need to develop and implement a technology strategy in addition to financial, marketing and operational strategies, and adopt the technology strategy that helps integrate their operations with their environment, customers and suppliers.

The problems faced by the enterprises, particularly in accessing technology and maintaining competitiveness have been formidable. It has been found that sharing of information at local and national level are mostly informal. There has been much less sharing of information regarding the latest development and competency understanding. Sharing of information on industry experience is not seen in the local and national level, as it is a fight for the same customer, in the same market. Even though the product and technology used by the entrepreneurs are similar, the tendency to share is less among the cluster participants.

Financial Challenges

The absence of institutional finance on affordable and easy terms is hindering access to new technologies. Therefore it becomes imperative on part of the organizations and the government to develop policies that will assist the enterprises in availing the capital required for initiating the development process for product innovation. In India the situation is further complicated by the fact that the preferred mode of finance is either self or other sources.

Organizational Changes

In the current scenario where the competition is getting tougher each day and only the best organization that adapts to change will survive, the Indian enterprises have to find ways and means to stay competitive by creating value through product innovation, process improvements and cycle time reduction. In order to create value, an enterprise has to focus on the development of its capability to focus on both policy deployment and daily routine management and thus move the firm from a “basic” state of operation to a “strategic” mode of operation. The end result should be the ability of an enterprise to engage with a potential buyer both to deliver current product design as well as to develop new designs and product over time.

For an organization which has to generate value it becomes essential that the entire management and every individual in the organization has to understand the essentials of value creation through new product development, improved processes and creating shareholders value through satisfied customers. To attain global competence, it requires significant transformation in the business products and processes and it should create an impact in the organization from top to bottom as a result of any changes arising out of the value creation exercise. An enterprise must ask itself what are the business processes, the product innovation and the value proposition that it wants to offer to the prospective customer in order to become a creative enterprise.

CO-DEVELOPMENT AND FINANCING OF ENTREPRENEURIAL PROJECTS

Any exercise of development of innovative products and improved business processes requires an infusion of capital in order to set up the infrastructure; i.e. hardware as well as knowledge transfer. Earlier the access of enterprises to capital markets is very limited, they largely depended on borrowed funds from banks and financial institutions. In majority of the economies, while financial institutions were providing the investment credit to enterprises, commercial banks extended working capital. In the recent past, with growing demand for universal banking services, the term loan and working capital loan are becoming available from the same source. Besides the traditional needs of finance for asset creation and working capital, the changing global environment has generated demand for introduction of new financial and support services for the enterprises.

In the backdrop of emerging needs, the new financial services need to address the challenges of technology up-gradation and modernization, marketing finance, infrastructural facilities, venture capital, micro-finance and factoring assistance. In the non-financial services, information dissemination, technical assistance, early warning, human resources development programs, environment management and quality consciousness are required more urgently than ever before.

BUSINESS INCUBATION AND VALUE CREATION

In order to generate value through innovation what we need is an efficient small business development-enhancing concept: the business incubator. In the last few years, there has been a tremendous interest generated in the concept of business incubation evident from the significant increase in the number of business incubators operational both in developed and developing countries.

Incubators can also have long-term indirect effects that are difficult to quantify. They may stimulate local area development. A few successful start-ups may exert a demonstration effect, helping local communities recognize that entrepreneurship is a realistic option. Similarly, entrepreneurs whose ventures fail will often learn from experience and establish successful businesses later on, perhaps outside the incubator. Technology incubators can also sensitize academics to the problems of industry.

In the last decade business incubators have been attracting increasing attention from indigenous policy makers, academicians, economists, donors and international organizations. It needs to be stated that both in developed and developing countries, enterprises constitute the dominant economic actor and make a significant contribution to gross domestic product and job creation. Assistance to enterprises has been considered both by national governments and international donors as a step towards economic growth, generates employment and alleviates poverty through self-employment.

The spectrum of services offered in an incubator are extremely varied, ranging from strategic business planning, to administrative services, and guidance on issues of intellectual property (particularly in the case of technology incubators). Business incubators have variously been referred to as enterprise centers, nurseries, shared workspaces, managed workspaces and venture units. As this varied terminology indicates, there is no unique business incubator model. The incubator industry is in fact an assortment of diverse types of facility operating in a wide range of circumstances.

The most important factor in running a successful incubator program is networking in the new economy. New information technologies have changed the way of doing business. Internal and external networks of intellectual capital and resources have become the most valuable assets for a company operating, in the field of new of new technologies, management principle and services.

PUBLIC AND ORGANIZATIONAL POLICIES

In India, small and medium industries play a vital role in the growth of the economy. Small industries have a 40% share in industrial output, producing over 8000 value-added products. They contribute nearly 35% in direct export and 45% in the overall export from the country. They are one of the biggest employment-providing sectors after agriculture, providing employment to 28.28 million people. However, enterprises are facing tough competition from their global counterparts due to liberalization, change in manufacturing strategies and a turbulent and uncertain market scenario. The Government

of India has established a network of entrepreneurship development institutes including 3 national level institutes, for imparting entrepreneurial education and training. These institutes are responsible for developing training modules, undertaking research and training SME managers. They work in close coordination with the local industrial associations.

Information plays a vital role in the success of any business. Recognizing the importance of information and its relevance to Small Scale Industries (SSI) units, the National Small Industries Corporation Limited (NSIC) provides Infomediary services to SSI units. Besides hosting an integrated website (www.nsicindia.com), NSIC hosts sector specific portals for focused information dissemination. Under this scheme, SSI units can become members and avail of a number of value-added services. Some important services are:

a) E-transaction portal
b) Supply databases
c) Advisory and Infomediary Services
d) Market intelligence
e) Technology providers
f) Information providers
g) Linkages with relevant institutions

The portals, targeted at specific sectors, aim at providing information and facilitation to members in the first stage, and transaction and integration services in the second and final stage.

Besides, Government of India also provides financial assistance for surveys, studies, participation in foreign exhibitions, business meets, marketing assistance, vender development program, subcontracting, Prime Minister's employment scheme, Small industry Cluster Development Program, etc.

Innovation in developing countries is promoted by venture capital, to help in indigenous development of technologies. In India financial institutions, such as Industrial Development Bank of India (IDBI), Industrial Credit and Investment Corporation of India (ICICI), Industrial Finance Corporation of India (IFCI), and other banks are providing financial assistance for commercialization of indigenously developed technologies and adoption of imported technologies for wider domestic applications through venture capital.

Small Industry Development Organization (SIDO) offers a number of financial services to enterprises. Some of its the popular schemes are Credit Linked Capital Subsidy Scheme for Technology Up-gradation, Credit Guarantee Scheme, ISO 9000/IS 14001 Certification Reimbursement Scheme, Integrated Infrastructure Development Scheme, Cluster Development Program, Mini Tool Room Scheme, etc.

In addition, recently the Government of India has taken a number of initiatives to help enterprises. Some of these initiatives are:

i. **SED Bill**: The Small Enterprises Development (SED) Bill is on the anvil. Enactment of this Bill will remove the barrier to SSI growth, by inculcating a hassle free, user-friendly environment enabling SMEs to diversify from their conventional product range. It will, thus, encourage exports and global integration and propel SSI towards the projected 12 % targeted rate of growth.

ii. **Credit Rating Scheme**: The scheme has been introduced to encourage the SSI Units to get their credit rating done by reputed third party credit rating agencies. The credit rating will facilitate hassle free flow of credit to enterprises, while enhancing the comfort-level of the lending banks. The rating will also bring out the

strengths and weaknesses of the unit and provide opportunities to enhance their competitiveness. The rating will enhance the capability and credibility of the enterprise, to not only approach banks and financial institutions for capital and debt servicing on more favorable terms but also project its strength before buyers of its products. The government of India will reimburse 75% of the fees charged by the rating agency subject to a ceiling amount.

iii. **SME Fund**: Small Industries Development Bank of India (SIDBI) was set up in April, 1990 under an Act of Parliament. SIDBI is the principal financial institution for promoting, financing and development of industries in the small-scale sector. To further improve credit availability, a SME fund of US$2 billion has been operational from 2004.

iv. **Credit Cards**: Laghu Udyami Credit Card (LUCC) Scheme (Small Entrepreneur's Credit Card) has been liberalized. The credit limit has been enhanced from US$4,000 to US$20,000 for borrowers who have a satisfactory track record.

v. Efforts are being continuously made to facilitate flow of institutional credit to SSIs on easy terms.

vi. Some of the other initiatives taken are:

a) Allocation of US$87 million towards Technology Upgradation Fund for Textiles.
b) Setting up of Knowledge Commission Institutions of Excellence at the cost of US$20 million at the Indian Institute of Science, Bangalore.
c) Weighted deduction of 150% of expenditure on in-house research and development facilities of companies, engaged in the business of biotechnology, pharmaceuticals, electronics, telecommunications, chemical, or any other notified products.
d) Custom duty exempted on capital goods and raw materials to a company for R&D project.

For improving the technological and knowledge inputs in enterprises the Ministry of SSI, Government of India, offers a number of technical services through its National Small Industries Corporation Ltd (NSIC) and Small Industry Development Organization (SIDO).

National Small Industries Corporation Ltd. (NSIC) established in 1955, by the Government of India promotes, aid and foster the growth of small scale industries in India. It offers a number of technical services to SMEs through its technical services centers, extension centers, software technology parks and technology transfer centers. These include technology audits and benchmarking, technology needs assessment, technology sourcing and application of new techniques, technology acquisition, development of software, material testing facilities through accredited laboratories, product design common facility support in machining and tooling, energy and environment audit services classroom and practical training for skill up-gradation, etc.

NSIC has started a Technology Business Incubation (TBI) service. TBI enables technical entrepreneurs to conduct their R&D programs in a professional, friendly and supportive environment, while receiving the guidance and hand holding they need in the initial phase. This facility is being offered in Information Technology, Product Design, Energy and Environment Auditing, Bio-Technology Electronics and Communications.

It has pioneered several schemes, for the growth and development of the Indian enterprises. In the initial stages of development of the small-scale industries after independence, it was

the innovative and novel schemes of the NSIC such as government purchase, hire purchase, development of prototypes, technical training, etc. which led to the establishment of new enterprises, development of appropriate manufacturing technologies and creation of a strong first generation entrepreneurial base. These schemes of the corporation acted as a catalyst for this sector. It has helped the small units in identification, adoption, absorption and transfer of technology.

India ranks quite high in possessing a large pool of organizations, scientists and engineers (there are 1,200 technical institutions providing technical education to 0.38 million student every year) and a fully developed intellectual infrastructure, but is still is quite low in the matter of developing and adoption of new technologies in the enterprises sector. As technology is an important element, along with price and quality in determining competitiveness, many organizations are active in the area of offering technological assistance to SMEs, including the Council of Scientific Research (CSIR), Indian Institute of Technology (IIT), Technology Information Forecasting and Assessment Council (TIFAC), National Research and Development Corporation (NRDC), National Institute of Design (NID) Product and Process Development Centers (PPDCs), Mechanical Engineering Research and Development Organization (MERADO), National Small Industries Corporation's (NSIC), and Asia Pacific Center for transfer of Technologies (APCTT) etc. However, as stated earlier, the pace of technological transfer needs to be increased and linkages strengthened and streamlined for which efforts are underway to plug the gap. At present, there are 2,900 R&D institutions in India, of which 1,350 are in the private sector. Out of these, over 1,250 are in-house R&D units, employing over 45,000 scientific and technical personnel. However, the SME sector is largely aloof of such facilities. In the majority of the cases, the R&D outputs do not get commercialized for want of initial investment and the needed enabling environment and networking. In the recent past, the Department of Science and Technology, Government of India, has been focusing its attention on this aspect and has initiated a number of institutional based programs. These include the mechanisms of Science & Technology Entrepreneurs Park (STEP) and the Technology Business Incubator (TBI).

The National Science and Technology Entrepreneurship Development Board of the Department of Science and Technology has played a pioneering as well as catalytic role in the Indian Business Incubation arena since year 2000. So far 15 Technology Business Incubators have been set up at various institutions. In addition, there are 17 Science and Technology Entrepreneur's Parks and 50 other such organizations promoted across the country.

CONCLUSION

While most enterprises in developed countries have financial as well as technical capacity to identify technological sources and evaluate alternate technologies that would suit their requirements. This capacity is unfortunately missing in most Indian enterprises. It is this feature of our enterprises that makes them an ideal partner for technological up-gradation, through technological cooperation with foreign enterprises.

CASE STUDY OF RANE BRAKE LINING

The Indian auto parts industry is significantly fragmented with large number of players having a turnover of less than US$10 million per year. The industry directly employs about 250,000 people and has an annual turnover of US$6.7 billion.

The evolution of Indian auto ancillary industry can be traced through three distinct phases, each marked by substantive developments.

Phase I (1980): Prior to the 1980s, the auto ancillary industry has been primarily dominated by the unorganized, low technology small-scale sector. The setting up of Maruti Suzuki in 1983, generated a need for high quality, reliable auto components that met the stringent emission standards set for Maruti cars. This led to the entry of several Japanese auto component majors like Sumitomo, Koyo and Denso.

Phase II (1990s): The auto component industry in India witnessed a transformation in the 1990s to a high technology, quality conscious industry catering to the requirements of the growing domestic automobile industry. Large players like Delphi, Robert Boasch, Visteon Corporation, etc, entered the market to tap the huge potential created by the strong domestic and export demand.

Phase III (2000 onwards): This period has seen the emergence of three trends in the industry, namely:

Globalisation of Indian Companies: Several leading Indian companies have acquired international auto component companies as part of their strategy to expand their markets globally and acquire new technology. For example, Bharat Forge, the second largest forging manufacturer in the world has acquired German forging company, Carl Dan Peddinghaus; Amtek Auto acquired two UK-based auto component companies; Sundaram Fastners acquired a precision forging unit of Dana Spicer, Europe.

Global Quality Benchmarking: Today the Indian automotive industry has six Deming Award winners which include Rane Brake Linings Limited; Brakes India Limited, Foundry Division; Sona Koyo Steering Systems Limited; TVS Motor Company Limited; Sundaram Brake Linings Limited and Sundaram Clayton Limited, brakes Division. By investing in quality, local component manufacturers are becoming the hub for global sourcing of international automotive companies.

Outsourcing: Global auto component companies like Delphi, Visteon, Cummins etc consider India their manufacturing as well as research base and are sourcing components from India for their global requirements.

India is a market that offers new avenues for growth in the automotive sector and also provides opportunities to global companies to compete more effectively in their home markets.

Given the present downturn in developed markets, OEMs and suppliers alike are under pressure to optimize their cost levels and simultaneously drive growth. In this context, India represents a substantial cost advantage, which global OEMs and component manufacturers are leveraging to drive down costs and build growth options. On the cost front, OEMs are eyeing India in a big way to source products and components at significant discounts to home markets. On the revenue side, OEMs are active in the booming passenger car market in India.

RARE BRAKE LININGS

Rane Brake Linings (RBL) is a division of the Rane group, an automotive components company with a sales turnover of US$131 million and 4,600 employees. The Rane group consists of Rane (Madras) focused on steering and suspension, Rane TRW focused on power steering and seat belt, Rane engine valves focused on valves, valve guides and tappets, Rane Brake Linings focused on brake linings, disc pads, composite brake blocks and clutch facings and Rane Nastech focused on energy absorbing steering columns.

RBL started in 1967 in Chennai, with the second plant in Hyderabad in 1991 and a third plant in 1997 in Pondicherry. Sales turnover for RBL was US$70 million in 2003-04. RBL has a technical collaboration with Nisshinbo, a Japanese company. Until the 70's, quality meant fitness for use of product sold at an affordable price. Thus, businesses differentiated themselves on this basis and superior quality in the customer's eyes, fewer defects, less irritants, lower purchase price, etc. Total Quality Control focused on reducing defect rates and reducing the cost in the factory.

Factors for Undertaking Value Creation Process at RBL

In the new business environment, companies needed to differentiate their offering in the eyes of the customer, comparatively, not necessarily superlatively: by making it lighter, faster, safer, etc.; or differentiate in a manner that may be subtle: by improving service, reliability, etc. The TQM journey began in 1999 at RBL. Getting to be more profitable required finding new markets, but that required first managing the company better so that costs decreased as quality improved. RBL chose to aim for the loftiest goal, winning the Deming prize, in order to contain costs and improve quality.

Organizational Change, Business Development and Value Creation

Rane was ready to announce its commitment to quality by submitting to rigorous examination by their Japanese professors. This represented a move that a local business magazine has called "India endeavoring to become an economical Japan to the world." Indian manufacturers were eager to become suppliers and collaborators to larger European, Japanese, and US companies. This also reveals their (initial) reluctance to take business risk inherent in product design and direct marketing to end-users. It reveals their preference for competing through engineering and technical innovations.

RBL's TQM journey began with the choice of Prof. Tsuda as their coach. He established the following criteria for excellence:

1. Develop a business model to generate business for long period through uniqueness in products & technology and uniqueness in achieving certain excellence.
2. Reduce technological dependence on another company.
3. Create new market(s) or achieve drastic expansion of existing market.
4. Unique and enhanced utilization of manpower/human resources that drives a company to supply excellent people/manpower.

RBL decided to focus on policy deployment and daily routine management (DRM) to achieve their TQM implementation. As a result, RBL redefined its management of

processes for new product development system, manufacturing quality, supplier quality and customer quality. In the new system, each manager was required to define his role, his metrics, his measurement of performance to date and the steps being taken to improve performance.

DRM deployment meant that:

a. Each function will have unique purpose
b. Each purpose will have role
c. Each role will have managing points to achieve the purpose
d. All managing points have measure of performance
e. All managing points have metrics
f. All management points have either graphs or vital activity monitoring chart
g. Development of metrics or indices is important, specifically for non-manufacturing areas

TQM implementation created tangible and intangible benefits for RBL. Intangible benefits included role clarity so that each person understood their role in the organization, their suppliers and customers, and their metrics. The focus on competency and involvement resulted in a different approach to managing people. The focus on management points and check points and the systematic approach to planning (including catch balling or adjusting plans across roles) all resulted in a management system where charts, goals and current performance relative to plan all became commonplace throughout the company. Also, common for every problem that came up was a systematic analysis of the problem, steps taken to resolve it, impact of the steps and learning from each observation.

Co-development, Business Incubation and Value Creation

How did TQM affect execution of specific tasks at RBL?

a) Customer line rejections dropped from 16,000 ppm in 1999 to 1,750 ppm in 2003.
b) Plant in process rejections decreased from 2.1% of total pieces to 0.85% of total pieces produced.
c) Sales per employee went up from US$22,000 to US$40,000. Number of employee suggestions went from 280 to 7,500 during the period.

In other words, TQM represented a dramatic and measurable improvement across many specific metrics that impacted the company.

The key benefit was the continual improvement potential unleashed by TQM. When a potential buyer contracts to RBL, they become part of the TQM processes for improvement. This meant that the specific business processes affected the cost reduction rate or the quality improvement rate for the buyer. The speed of response to engineering specification changes, customer requests among other processes, all affected the overall cost of doing business.

In short, how RBL dealt with cost increases and performance issues provided important insights into their potential for transforming into a first class global supplier. To illustrate this, an example has been given below. The purpose of this example is to provide a glimpse of the process that would be experienced by a buyer in his interaction with

specific functions at RBL.

Example: Customer and Supplier Coordination to Improve Product Specification and Performance

One of RBL's customers introduced a new two-wheeler disc pad in the Indian market. While RBL produced the product to specifications, the pads were found to stick during use by the end customer. The customer reported the problem to RBL on 14 April 2004. The two-wheeler manufacturer claimed that the parallelism of the installed pads was not up to standard, and the flatness and surface finish were not acceptable. The possible causes could be attributed to:

a. the supplier of some components of the disc brakes to RBL
b. RBL's manufacturing of the brake linings
c. the customer (two wheeler manufacturer) installation pf the disc brakes in the two wheeler, or
d. its use by the end customer

In order to maximize the stated goal of customer satisfaction, RBL decided to solve the problem for the two-wheeler manufacturer. The first step was to devise a measurement gauge that would be used by all three companies (the supplier to RBL, RBL's manufacturing personnel and the customer). This gauge was designed to measure thickness all around the pads. RBL stationed its engineers at the supplier and the two wheeler manufacturing sites and proceeded to use these (now standard) gauges to measure the pads. This step alone decreased error rate from 25% to 3%.

The next step was to work on correcting the plate manufacturing process at the supplier's end. The original process at the supplier had a 0.2 mm gap between the rollers, the direction of pass of the roller (the side which faced the roller) was not specified, as well as, the number of pieces per pass was not specified. In the modified process, developed jointly by RBL and the supplier, the machine was set to have a 0.1 mm gap between the rollers, the direction of pass was specified as the Lug Side, and the number of pieces per pass was set to one. These changes increased the acceptance rate from 75% to 98%.

At TBL's manufacturing, the grinding wheel was changed from a Diamond wheel to Aluminum Oxide (60 Grits). In addition, buffing was done to clean dust. This decreased productivity at RBL but increased roughness necessary to deliver the required performance. To improve productivity, RBL changed to a 120 Grits diamond wheel. To further improve productivity, RBL switched to a three step wheel. The end point was an improved disc pad in which the sticking problem was completely eliminated.

The completion date of this project was May 10, 2004! It was completed in less than a month.

CONCLUSION

The example demonstrates that RBL is capable of not only understanding how they fit into the supply chain but also how the product is used by the customer. They are interested and capable of both managing process improvement across the supply chain, as well as, completing this process in a short time frame. The top management goal of maximizing customer satisfaction means that employees at RBL and managers do not need spend time authorizing engineers and other personnel to tackle such problems. Suppliers

and customers do not have to worry about paying for such service. This provides RBL with an edge over companies without such top management commitment.

A potential buyer of RBL's products can now potentially decrease the overhead (engineering and procurement staff) that would otherwise be required to play the coordination role described above. This reduction in overhead is an added reduction in direct item related costs that can make RBL more competitive overall even if their product prices are higher.

JAPAN

Organization for Small and Medium Enterprises and Regional Innovation, Japan

Katsumasa Ariki
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SMRJ'S PROJECT STRATEGY

As the implementation organization of METI's policies for SME and regional development, SMRJ conducts a wide range of measures, such as assisting in new business development (e.g. dispatching experts to SMEs, developing business incubation facilities, extending capital to venture funds), reinforcing SME's business foundation (e.g. developing human resources, providing various information), administrating a mutual relief system as safety net for SME operators, and providing industrial complexes. In other words, SMRJ is positioned as the organization for implementing public projects aimed at bringing about stability in public lives, society and the economy.

1) Supporting industrial – academic partnership: Business incubation facilities
There are eight community-cooperation incubation facilities for supporting the development of local economy, and five university-cooperation incubation facilities for utilizing technologies and knowledge of universities. They house approximately 200 businesses as tenants, with a tenancy rate of around 95%. Tenants include eighteen companies receiving capital from venture funds (to be explained later), and three companies receiving expert consultation services. Many of the companies participate in business-matching events and utilize advisory schemes, as SMRJ's "comprehensive support" brings rapid business growth.

2) Supporting industrial – academic partnership: Venture fund capitalization
SMRJ finances venture funds, operated by private-sector venture capitals so as to indirectly extend financial support for the development of numerous venture businesses. The target is venture businesses in their early stages, particularly less-than-seven-year-old unlisted businesses with great potential. By the end of March 2005, finances were extended to 54 venture funds, which have invested in approx. 970 venture businesses, 41 of which have already gone public.

There has been a recent surge in the number of venture businesses that utilize technological seed funding, held by Japanese universities and research laboratories, and develop them into business. An increasing number of university-originated ventures are becoming listed on the stock exchange. Against this background, comes a rise in the number of venture capitals and investment funds primarily targeting such ventures. This type of venture fund includes funds established for specific universities, industrial—academic cooperation funds established by major venture capitals, and funds specializing in specific technological fields.

University-originated ventures tend to require an extended period of time before

achieving business development, and therefore need hands-on support after investment is made. Funds supporting these ventures are expected to serve even greater roles, including post-investment development support.

SMRJ recognizes that business application of universities' technological seed funding, achieved through turning national universities into independent administrative agencies and promoting partnerships between the industrial and academic sectors, will contribute to establishing venture businesses and creating new industries. It is also acknowledged that supporting the development of university-originated ventures represents an important measure aimed at revitalizing the Japanese economy, addressing employment issues, and turning Japan into a nation of science and technology innovation.

SMRJ currently extends 6.7 billion yen to nine funds supporting university collaboration, with the combined value of funds totaling 20 billion yen.

Let me introduce one such fund, funded by SMRJ, investing in university-originated ventures. "UTEC No.1 Investment Business Limited Liability Partnership" is run by the University of Tokyo Edge Capital. It is a venture capital, certified by Tokyo University as its technological transfer business, undertaking investment projects. The fund, worth around 8.3 billion yen, is aimed at providing financial support to venture businesses utilizing Tokyo University's outstanding technologies and intellectual properties, or venture businesses led by excellent staff who study at or have graduated from Tokyo University. SMRJ extends one billion yen to the fund, which have already invested in eight venture businesses, targeting unlisted companies including venture businesses in a wide range of fields including IT and biotechnology, venture businesses in their startup or growth stage, spin-out ventures from major corporations and middle-tier businesses that receive technological transfer from Tokyo University. Among its investment recipients is "MediciNova", a U.S. biotechnology/innovative drug venture that provides pharmaceutical companies with services of new drug development. The venture became a publicly traded company in February 2005.

SUCCESSFUL FACTORS THAT LEAD TO IPO

Interviews have been conducted with funds financed by SMRJ to identify the process of their clients' business start-up to IPO. From the perspectives of both investment recipients and venture capital, success factors for achieving the goal of share listing are as follows:

1) **Success factors on the part of investment recipients**

Selection of venture capitalists

Some businesses that have achieved IPO did not restrict which venture capitals to receive investments from so as to amass as much funding as possible, but others have carefully selected suitable venture capital in line with their growth strategy, examining whether they would provide the necessary support or refrain from making more management intervention than necessary. Some have taken steps to secure investments appropriately, with eyes firmly on the path for IPO.

For example, Company A, with strong fund demand, said, "In the first round, we received investment from socially well-reputed venture capital as a way of attracting further investment from other sources. This move enhanced our social credibility, and made it easy to arrange funds from other

venture capital and financial institutions". Company B, an IT venture business said, "We received funds from venture capital with strong emphasis on the IT industry. Although their amount of investment was small, the fact that we received their investment boosted our reputation within the industry, and consequently attracted a further stream of funds." The company also said, "Our timing of IPO has been accelerated because of our move to select venture capital based on the criteria of "providing appropriate support upon request while refraining from unnecessary management intervention", and effective support we subsequently received in line with the criteria."

These comments highlight the importance for venture businesses to fully examine the objectives of accepting investments from venture capital, and select venture capital that matches the objectives.

Stance in Utilizing Support From Venture Capital

Venture capital can be utilized in many different ways, e.g. soliciting support for drawing up capital policy, and gaining reference to business associates. Yet, all investment recipients seemed to have drawn up/built the core part of their business internally, including management strategy and project plans. Companies that accepted a director sent in from a venture capital organization, said, "their participation in our management heightened a sense of tension, and prompted us to address problems without delay or oversight." This indicates their use of venture capital as a third party involved in business management with the contribution of enhancing corporate governance. In achieving business growth, it is effective to utilize support from venture capital. At the same time, there is an importance in maintaining corporate identity without depending excessively on venture capital.

2) **Success factors on the part of venture capital**

Investment timing

As pointed out in the section on “selection of venture capitalists", investment recipients expressed strong praise for venture capital that provided the first investment and also had the effect of drawing subsequent funds. Some also pointed out how a timely flow of investment in a sufficient amount, coming at a time when entering into a new business area, accelerated corporate growth. In regard to financial assistance, the amount of investment is certainly one of the key aspects. At the same time, however, it is also important to provide funds at the right timing that contribute to the growth of investment recipients.

Arrangement of Fund Providers

As explained above, it is important to provide sufficient funds at the right timing. Some venture capital is also contributed to the growth of investment recipients through arranging new fund providers.

For example, Company D, which accepted an external director dispatched from SMRJ-financed venture, said, "since our company requires a large amount of development funds, the greatest benefit was to have the lead investor who was prepared to arrange investment from the second and subsequent rounds of fundraising efforts. Rather than simply introducing other fund providers, they provided briefing of our capital policy and financial plans, allowing us to secure sufficient amount of funds." Company E, which

achieved IPO just 12 months into business launch, said, "The lead investor conducted diverse analysis on which venture capital we should receive subsequent investments from. As a result, we attained funding from venture capital that has contributed to our IPO."

As explained above, venture capitalists must not only introduce other fund providers, but also select and actually arrange those who would help the investment recipients' future growth and IPO.

Growth support including enhancement to management functions

As explained in "Stance in utilizing support from venture capital", investment recipients expressed appreciation for venture capitalists who takes a third-party stance in contributing to the enhancement of corporate governance. Some said, "their frank and harsh criticism has prevented potential problems from actually manifesting", while others pointed out, "they responded to any consultation requests with enthusiasm, which provided psychological help to us." Rather than merely monitoring the business development of investment recipients, it is important to provide effective advice that contributes to reinforcing their management functions.

Meanwhile, some investment recipients do not wish to see any intervention into their management. Others expect sideline support concerning business operations (e.g. introducing potential clients), and support regarding the development of the administration system (e.g. introducing human resources). Businesses that fall under the latter category said, "Venture capital gave us the opportunity to introduce our products at a seminar targeting potential corporate clients, which led to a dramatic increase in customers", and commented, "They introduced certified accountants and auditors, which helped us develop a business environment in preparation for IPO." Venture capital can heighten their reputation not through merely introducing a large number of potential clients, but through offering support that yields results (e.g. expanding the client base and securing excellent human resources) according to the needs of investment recipients.

Support toward IPO

A business must conduct preparation work, such as developing its internal system and negotiating with the lead managing underwriter, before achieving IPO. Company F's president, who has built up his career as a system engineer, said, "Staff from various venture capitals lectured us on a range of issues from developing the internal management system to negotiating with the lead managing underwriter. This has given us, in particular, an insight into the mentality and underlining philosophy of financial institutions, which helped us greatly in smoothly achieving IPO." Company G, which eyed for IPO from the very beginning, said, "Although going public had always been our intention, we never thought we could achieve the goal so quickly. We owe this completely to the specific guidance provided by the lead investor." Venture capitalists should present their investment recipients with a schedule and specific procedures toward IPO, as well as tips on how to direct negotiations with securities houses to their advantage, thereby helping them smoothly achieve public trading of their shares.

As pointed out in "Adjusting the shareholder configuration", some investment recipients reported that their venture capitalists refused to cooperate with lockup agreements, etc. Venture capital has no obligation to accept such a request. There is also a belief that issues such as venture capital discount would be resolved once the general understanding increases on venture capital investments, and with changes to brokerages' attitude and market conditions. Yet, in view of strong general concerns on the high ratio of venture capital at present, it may be important for them to conform to the general practice

of accepting requests for lockup agreements, etc. in order to enhance the reputation and confidence of the venture capital industry as a whole.

Success examples of businesses utilizing SMRJ's support projects

Case Study 1

Sosei Co., Ltd.

- Developing pharmaceutical products through in-licensing, DRP and NME joint R&D -

Business description	Developing pharmaceuticals, facilitating technological transfer in the pharmaceutical field				
Head office	8 Ichiban-cho, Chiyoda-ku, Tokyo		URL	http://www.sosei.com/	
Establishment	1990	IPO	2004	Listed section	MOTHERS index of Tokyo Stock Exchange
Capital (year of establishment)		–	Capital (this year)		1,662 million yen
Sales (year of establishment)		–	Sales (this year)		227 million yen
Employees (year of establishment)		2	Employees (this year)		35
Investment fund (limited liability partnership) that invested in this company					
JAIC Bio No.1 Investment Limited Liabilities Partnership (Japan Asia Investment Co., Ltd.)					

Company Overview

From Technological Transfer To Pharmaceutical Development

Board Director Shinichi Tamura sought to launch a pharmaceutical development business like Genentech, a U.S. bio-venture he once worked for. However, a lack of funds and human resources prevented him from starting business in this area at the time of company launch. Instead, he utilized the existing network of people to facilitate the transfer of technology, developed by European and U.S. pharmaceutical firms, to Japanese pharmaceutical companies and other parties.

In 1999, faced with changes in the market environment, the company adopted a new business model, and shifted its core business from technological transfer to pharmaceutical development.

Pipeline Strategy

Pharmaceutical development always requires a massive amount of time and money, yet does not necessarily end in success. This makes pharmaceutical development a business of high risk and high return. Sosei secures its product pipeline through three different methods (in-licensing, DRP and NME joint R&D) to control its business risk.

The company has also built far-reaching R&D/marketing partnership with Japanese and overseas bio-ventures and pharmaceutical companies, achieving a flexible business structure with a low fixed ratio.

While several bio-ventures have achieved listing on the stock market, Sosei is the only company that has as many as nine items in the pipeline. Considering its number of pipeline items and unique strategic approach, there is almost no companies that could rival Sosei.

In-Licensing

There are pharmaceutical products that have already been developed by European/ U.S. pharmaceutical companies and bio-ventures, but have yet to be marketed in Japan. Also, some products have reached an advance stage of development at European/U.S. pharmaceutical companies and bio-ventures, to a level where commercial application is certain. Sosei acquires the development and marketing rights of such pharmaceuticals with anticipated demand in the Japanese market, and handle their development in a business model called "in-licensing".

These pharmaceuticals have their technologies, etc. already established, and therefore require low development costs in terms of time and costs. This method has low risk, but offers low financial return, making it a low-risk/low return business model.

DRP

In DRP (Drug Reprofiling Platform), Sosei acquires the reprofiling (identifying unexploited usage) rights for compounds that Japanese pharmaceutical companies have developed and confirmed basic safety for, but suspended the development work in the perspective of effectiveness, etc.

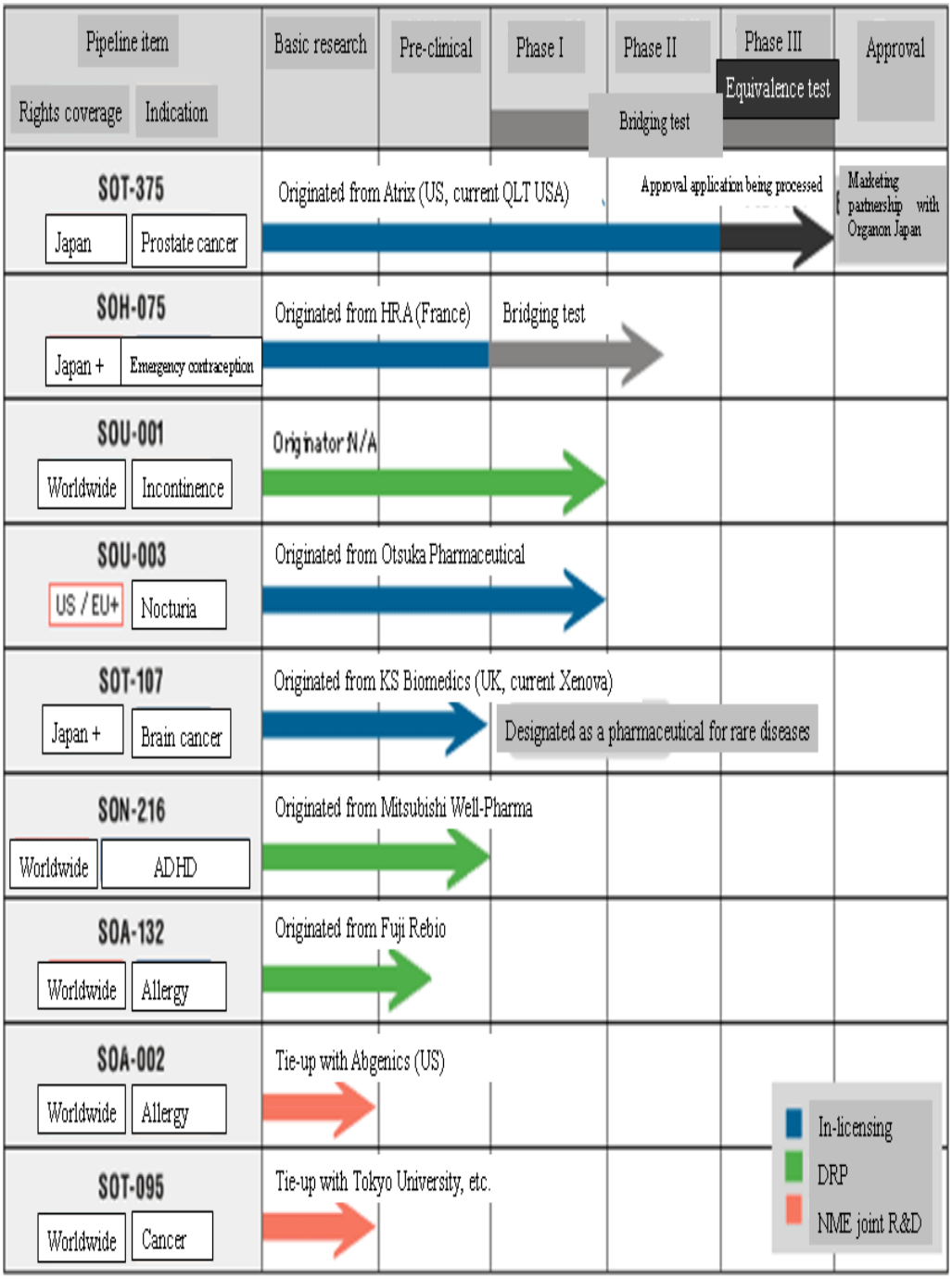
The company has a joint R&D arrangement with a number of western biotechnology companies with cutting-edge technologies (DRP partners) for undertaking reprofiling. When new applications are identified, Sosei makes a patent application by itself or jointly with DRP partners, and proceeds further with the development. This approach has a higher risk than in-licensing. However, since it involves compounds with a certain level of result, the risk is relatively low in terms of time and costs, making it a medium-risk/medium-return business model.

NME Joint R&D

Sosei has forged a partnership with Japanese/overseas universities, research institutes and other private enterprises to undertake joint basic research in the area of NME (New Molecular Entity), and obtains the rights to commercialization for the research findings.

The company then continues to work on R&D for the product launch of such candidate compounds.

Compared to in-licensing and DRP, NME has a higher cost in terms of time and money, but offers the potential of high financial return, making it a high-risk/high-return business model.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Basic research
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Phase III
Equivalence test
Bridging test
Approval
SOT-375
Japan
Prostate cancer
Originated from Atrix (US, current QLT USA)
Approval application being processed
Marketing partnership with Organon Japan
SOH-075
Japan +
Emergency contraception
Originated from HRA (France)
Bridging test
SOU-001
Worldwide
Incontinence
Originator N/A
SOU-003
US / EU+
Nocturia
Originated from Otsuka Pharmaceutical
SOT-107
Japan +
Brain cancer
Originated from KS Biomedics (UK, current Xenova)
Designated as a pharmaceutical for rare diseases
SON-216
Worldwide
ADHD
Originated from Mitsubishi Well-Pharma
SOA-132
Worldwide
Allergy
Originated from Fuji Rebio
SOA-002
Worldwide
Allergy
Tie-up with Abgenics (US)
SOT-095
Worldwide
Cancer
Tie-up with Tokyo University, etc.
In-licensing
DRP
NME joint R&D

Developments from Business Launch to Encounters with Venture Capital

Changes in the Market Environment

Upon business launch, the founder intended to create a venture business for pharmaceutical development, but shifted the focus to technological transfer due to the lack of business funds and human resources. However, the establishment of the new MOTHERS section on the Tokyo Stock Exchange and NASDAQ-J (now Hercules on the Osaka Securities Exchange) developed an environment for venture capital to invest in venture businesses. The trend enabled the company to arrange funds from venture capital, leading to the management decision to launch operation as a pharmaceutical development venture business.

Fund Arrangement from Overseas Venture Capital

Even when technological transfer was the main line of business, Sosei received investments from overseas venture capital, and conducted R&D within the scope of the funding. These venture capital dispatched external directors, who provided advice in business plans and introduced potential business partners.

Receiving Investments from Japanese Venture Capital

Pharmaceutical development requires advance investments, making it essential to have a massive pool of R&D funds. Also, such operations are normally unprofitable during the initial development stage, and cannot attract business loans from banking organizations. This is why Sosei examined the option of investment from venture capital.

When changes in the market environment enabled fund arrangement from Japanese venture capital, the company was introduced to Japan Asia Investment Co. (JAIC). The introduction came from overseas venture capital that had previously provided funds, with an operation base in Japan.

Despite the changes in the market environment, there were not much venture capital prepared to invest in bio-ventures. While many of them express interest in bio-ventures, they seemed unable to make investment judgments due to lack of capitalists with knowledge in this field.

Despite such circumstances, JAIC understood investment in bio-ventures. While other venture capitals were reluctant to extend large investments, JAIC provided approx. 100 million yen in 2001 and 2003.

Another key factor in accepting their investment was that JAIC No.1 Investment Limited Liabilities Partnership had no association with pharmaceutical companies. When receiving investments, Sosei examines each investment provider and ensures that it has a neutral stance with no industry affiliation. If pharmaceutical companies are involved in investment providers, Sosei will be deemed as having association with the companies, causing difficulty in our business development. The LLP received no funds from pharmaceutical companies. Instead, among its fund providers was the neutral, public organization, SMRJ.

Support Expected from Venture Capital

Since pharmaceutical development requires a large sum of money, the aspect most expected of venture capital was support in attracting subsequent investments. They were also expected to, if possible, provide advice on business development through dispatching external directors.

Business Expansion and Growth, Using Venture Capital

Drawing Investments from other Venture Capital

Sosei received investments from JAIC in 2001 and 2003, which attracted subsequent investments from other venture capital.

JAIC's reputation for thorough due diligence, meant that its investments provided credibility to Sosei, encouraging other venture capital to follow suit. Investments from other venture capital allowed Sosei to amass approx. three billion yen in investment even before IPO. Such a substantial amount of investments could not have been possible if it had not been for venture capital. Sosei sought consultations from JAIC when drawing up its capital policy, and believes that its advice played a major role in its fundraising.

Post-IPO Information Exchange

Although Sosei has already achieved IPO, it continues to exchange information with JAIC's bio-related departments. JAIC's senior management has also proposed a partnership in the bio-related new business area. The venture capital has also extended capital to a company affiliated with Sosei.

As shown in these examples, the two companies maintain a close relationship even after Sosei achieving IPO.

IPO’s Business Effects and Future Outlook

Securing Funds and Human Resources

The objective of IPO is to raise funds for R&D activities. The target amount of funds has already been raised through IPO. In addition, heightened public recognition and increased R&D funds, as a result of IPO, have started to magnetize human resources to the company. Many researchers seem to select their employers based on their financial capability, sufficient to finance R&D activities. The company did not anticipate this IPO effect in the area of human resources.

Becoming Among the World's Top 10

Sosei's business goal is to become one of the world's Top 10 bio-ventures. To this end, it will continue to secure human resources and reinforce its R&D system.

Despite its beginning from a low-risk business, Sosei has taken on high-risk areas in a bid to become among the world’s Top 10 bio-ventures.

Profile

Gradated from Tokyo University in 1978, completing the master's degree in correlative physics and chemistry (majoring in bio physics). Joined Fujisawa Pharmaceutical in 1978, working in the departments of development planning, planning and research planning. Duties included conducting research on pharmaceutical R&D trends, organizing product introduction, drawing up R&D strategy, and undertaking a special mission on biotechnology. Joined Genentech, Inc. in 1987. Became the representative director/president of Genentech's Japanese subsidiary in 1989 to oversee the company's all business operations in Japan. Established Sosei in 1990, taking up representative directorship/president (to today).

Advice to persons following future dreams and entrepreneurship

For bio-ventures, it is essential to undertake R&D as a form of advance investment. Conducting R&D requires funds. Venture capital is extremely important as fundraising partner. Consider venture capitalists as long-term partners in building a positive relationship.

Shinichi Tamura,
Representative
director/President

Case Study 2

Tsukui Corporation

- An established aged-care service provider with over 20 years of history, eyeing to become the industry leader -

Business description	Offering in-home care, providing long-term care at specialized facilities, dispatching human resources, etc.				
Head office	1-6-1 Kami-Ooka Nishi, Konan-ku, Yokohama-shi, Kanagawa		URL	http://www.tsukui.net/	
Establishment	1969	IPO	2004	Listed section	JASDAQ
Capital (year of establishment)	3 million yen		Capital (this year)	805 million yen	
Sales (year of establishment)	61 million yen		Sales (this year)	11,699 million yen	
Employees (year of establishment)	21 persons		Employees (this year)	848 persons	
Investment fund (limited liability partnership) that invested in this company					
JAIC Incubation No. Investment Limited Liabilities Partnership (Japan Asia Investment Co., Ltd.)					

Company Overview

Establishment of a Construction Company

The president of Tsukui graduated from the civil engineering department of a senior high school, and was employed at a construction company in Tokyo. However, realizing that there is a limit to what he could do as a company employee, he developed a desire to start his own business. Since he wanted to utilize his expertise in civil engineering, and because of the timely boom in construction and civil engineering projects, he left the construction company in 1962 and started Tsukui Construction in Yokohama. The business was later incorporated as Tsukui Corporation in 1969.

Switch to the Aged-care and Social Welfare Business

The business grew steadily to a point where it even owned a construction material depot measuring around 10,000 square meters in Yokohama 20 years ago. With truck traffic late at night that causes noise, the depot site was located in an area with no residential homes nearby. However, residential areas expanded significantly to almost reach the depot site. Naturally, local residents began voicing complaints about the noise. The company consulted the Yokohama City Office, which presented two options: Demolish the depot and build a part at the site; or establish a social welfare corporation to develop a special nursing home for the aged.

Around the same time (20-something years ago), the president was having difficulty arranging long-term care for his mother. It did not take long before he decided to develop an aged-care facility, where his mother could live. Himawari Welfare Society was established, and built a special nursing home for the aged. However, once the facility was completed, he realized that senior citizens who could move into a residential facility were fortunate, and that there are many others who have no choice but to stay home. Many of them were especially at a loss on bathing arrangements. In 1983, Tsukui launched the Welfare Business department to offer a visiting bathing service. Since such services were offered as part of administrative measures in those days, Tsukui staff called on municipal councils to market the service. By the time the Long-Term Care Insurance system was kicked off in 2000, the company had won contracts with municipalities of 24 prefectures across the nation.

When the bathing service was started in 1983, the business continued to lose money, with operation funds supplemented with profits from the civil engineering department. However, while the public-works dependent nature of the civil engineering business led to a gradual decline, the sales of the welfare business expanded to eventually outperform the civil engineering business. At the close of the fiscal year that ended in March 2002, before IPO, the company discontinued the civil engineering department, and became dedicated to

long-term care and social welfare services. Civil engineering employees who wanted to remain in the industry were introduced to alternative employers, but many opted to stay with Tsukui, and start learning about aged care services from scratch to build up know-how.

Direct-management Setup to Offer High-quality Services

In the relatively new industry of aged care services, Tsukui's 21-year history is quite substantial. Also, having a separate social welfare organization allowed the company to absorb service know-how, and utilize it to extend quality services. Another strength is a number of senior executives well versed in the area of aged care and welfare. For example, their vice president completed a dedicated welfare course after graduating from university, and built up on-site experience at a social welfare corporation, before joining Tsukui. He worked in the sales field before taking up the current position.

Other major companies tend to use a franchising system to expand business, whereas Tsukui is committed to the direct-management style in order to maintain service quality and effectively spread its business policy to all of its business premises.

Developments from Business Launch to Encounter with Venture Capital

Civil Engineering Operations Funded with Bank Loans

From the company launch and throughout the days when civil engineering was the main line of business, the company funded its operations through loans from banks and local Shinkin banks.

Use of Venture Capital since Setting IPO as a Goal

Around 1998 and 1999, when Tsukui became among the top players in the aged care industry, it began to consider IPO as a future goal, and started examining the possibility of venture capital investments. That coincided with the period dubbed the "First Welfare Bubble" just before the introduction of the Long-Term Care Insurance system. Many brokerages, auditors and venture capitals encouraged Tsukui to consider IPO. It subsequently sent staff to attend IPO seminars organized by auditors and brokerages, and learned the need for external investment before initiating IPO.

In May 2000, the company received the first venture-capital investment. One of the venture capitalists, which subsequently became the lead investor, provided capital from three of its funds. The venture capital also introduced two investment companies and four other venture capitalists, including JAIC, which also extended investment. Most of the raised funds were allocated to the establishment of new business facilities.

After a string of fundraising in 2000, Tsukui conducted another round of financing before IPO. At that time, it limited venture-capital investment to just one company. As the first round of financing involved numerous venture capitalists, Tsukui accepted funds from investment companies in the second round to lower the ratio of venture capital.

Business Expansion and Growth, Using Venture Capital

Management Support Restoring Business Performance

The "First Welfare Bubble" burst during the first round of financing in 2000. Tsukui increased its business outlets from 40 to 80 around this time. These did not bring an increased jump in the number of customers, and caused the company to register massive debts for the fiscal term ending in August 2000, with its liabilities exceeding assets. The lead investor venture capital and JAIC provided various advice on future management

policy, etc.

Since the lead investor had the right to send a board observer as part of the investment agreement, their observer was present at every board meeting to extend various advices. In 2000, when Tsukui first received their investment, the management support and IPO support/advice from the venture capital was extremely valuable, considering the lack of knowledge and information of IPO within the company. Such management support was combined with restructuring efforts on the remuneration system, managed to revive the company's business performance into the black on the monthly basis in September 2000. The level of liabilities was also reduced to below the asset level in the fiscal year ending in March 2001. The fiscal year cycle was changed in 2001 so that each year ends in March. This move was to ensure investor convenience in comparing business performance with other businesses in preparation for IPO, and also to let the world know of our business recovery as quickly as possible.

Introduction to Brokerages and Business Partners

The venture capital also introduced potential business partners, and candidate brokerage organizations to become the lead managing underwriter.

Support from the Auditor and Lead Managing Underwriter

Once the business stabilized, support from the auditor was very useful. Meetings were arranged twice to three times a month to receive enthusiastic guidance on the development of the Company Code and processing of financial statements. In the autumn of 2001, Nomura Securities was chosen as the lead managing underwriter, which extended support in the lead-up to IPO.

Issues to Note when Accepting Venture Capital Investments

The brokerage did not demand venture-capital discount because of the high ratio of venture capital investments. Analyst reports did not refer to the ratio, either. However, large investments from venture capital are certain to cause selling pressure immediately after IPO.

IPO’s Business Effects and Future Outlook

IPO's Objectives and Achievements

Tsukui opted for IPO in order to enable direct financing from the market, and enhance the company's credibility. There was also an added expectation that higher corporate credibility might attract good human resources. In fact, IPO not only brought business funds successfully, but also raised its credit rating, thus substantially lowering the interest rate on business loans from financial institutions. Yet, owing to industry characteristics, workers in the aged care/welfare sector seem to put greater emphasis on whether they could find fulfillment in work, rather than whether they become employed by a publicly-traded company. In this sense, no improvement has been felt in terms of staff recruitment.

In addition, IPO has greatly increased the amount of information streaming into the company, and revamped its credibility in non-financial aspects as well. Particularly noticeable was the increase in the volume of property information that flows in when opening day-care service centers. Previously, the company's request for property information had met with little response. However, since IPO, it has received more property data at a much faster pace.

Tsukui does not own properties in its operation of day-care service centers. It finds potential owners, asks them to have a new structure built, and leases it for 15 years on a fixed lease. Owners used to be skeptical about our offer of 15-year lease, asking whether the company would last that long. It no longer attracts such comments since IPO.

Future Outlook

In the future, Tsukui plans to expand the scale and income of the aged-care and related department. It is currently the third largest company in the aged care/welfare industry, but the gap with the top two companies is evident at present. To become the market leader, Tsukui believes now is the time to give priority to securing a certain level of profits and expanding the business scale. Unless business bases are secured now, the aged care service market may become saturated several years down the track, making it impossible to open new outlets. While the service of visiting customers for in-home care is important, there is a strong demand for day-care services. The company will therefore continue to reinforce its day-care business. In urban areas, the residential aged-care facility business will be stepped up. Many fee-charging nursing homes for the aged require a large amount of lump-sump payment in advance. Tsukui's facilities set this one-off charge at 800,000 yen in an effort to reinforce residential care services to middle-income households.

The business of dispatching aged-care workers will have its branch offices increased, so as to evolve it into one of the company's core business areas.

Profile

Born in Yamanashi in 1936. Joined Daido Construction in April 1955. Established Tsukui Construction by himself in 1962. Incorporated Tsukui Corporation in June 1969, and has since served as its representative director/President. Established a social welfare corporation Himawari Welfare Society in March 1987, and served as its director until just before Tsukui's IPO.

Advice to persons following future dreams and entrepreneurship

The timing of our IPO was later than initially planned. However, clearing tough conditions set out by the lead managing underwriter before IPO, has reduced problems we have encountered after IPO. At the time, we felt a sense of resentment to the strict conditions presented. Yet, they were issues we would have had to clear once IPO was achieved. We have built up organizational strength and corporate muscle in the process. We now realize that it is better to initiate IPO only after solidly preparing in-house systems, rather than rushing into IPO unprepared.

Sukeroku Tsukui,
Representative
director/President

SME'S HUMAN RESOURCE DEVELOPMENT AND CHALLENGES

According to the results of a survey on human resource strategy of venture businesses seeking major growth (Project commissioned in FY2003).

Overview

This survey is based on the supposition that the lack of human resources and the labor market may be hindering the growth of emerging venture businesses, and covers venture businesses that have achieved IPO in recent years to examine the status of their human resource strategies. In the process of development, lack of funds and human resources poses a serious problem to venture businesses. Yet, over 100 companies become listed and go public in three new stock market indices (JASDAQ, Hercules, MOTHERS) each year, indicating that, despite the tough business environment, many venture businesses overcome fund and human resource shortages and achieve substantial growth. Regarding these "successful" businesses that have achieved IPO, we examine when they secured human resources, what kind of human resources they recruit, and to what extent these human resources contributed to business performance. The findings are used to draw up public support measures, required for venture businesses to secure human resources smoothly.

1) **Channels for Securing Human Resources**

Venture businesses use personal networks (friends, acquaintances, etc.) to find human resources upon and immediately after their inauguration. Many business founders typically invite their colleagues and subordinates from their previous employers to join the business launch. In order to ride over various difficulties associated with the launch of a venture business, founders opt for former colleagues, long-term friends and acquaintances, whose personality and ability are grasped to a certain extent with a sense of values that can be shared.

However, personal networks have their limitations. As businesses progress on to subsequent growth stages, they start seeking human resources through diverse channels, especially through job advertisements, recruitment services, business associates and financial institutions.

2) **Human Resources Sought by Venture Businesses**

Focal factors in selecting human resources include their abilities, experiences, enthusiasm and compatibility with the corporate climate. The survey indicated the tendency of emphasizing abilities and experiences in the middle stage and just before IPO, rather than at business inauguration. In the early days of business launch, venture businesses are not well known, and therefore cannot attract many applications from experienced and able human resources even if they try. Yet, as they move on to further stages, more businesses start to give priority to experiences and abilities, while fewer businesses give emphasis on the enthusiasm factor. Experience does not always work to the benefit of venture businesses. Many of them hold negative views on experienced recruits who conduct work as an extension of their previous job according to past experiences. They point to the need of neutralizing such employees, or making them adapt to a wider range of business operations.

3) **Development of secured human resources**

Many venture businesses are making efforts in human resource development, in response to the negative gap that exists between human resources they want to secure and human resources that they can actually capture from the labor market.

OJT was the basic approach adopted. Unlike large corporations, venture businesses take the stance of giving various assignments and major responsibilities from an early stage, so that new recruits can develop through experience. A range of training systems complements this approach, to form a support mechanism for facilitating the development of human resources.

Policy Recommendations based on Survey Results

Venture businesses have voiced a request that the government partially shoulder the expenses for securing and developing human resources. The Employment and Human Resources Development Organization provides assistance in the area of human resource development through offering grants to help SME recruit advanced human resources, or develop staff abilities for the purpose of creating more jobs.

In the area of human resources assistance, chambers of commerce and industry across the nation lead the initiative to identify retired corporate veterans, register them in a database, and dispatch them as mentors in line with the needs of individual SMEs.

Venture businesses have a strong demand for human resources with rich experiences and specialized knowledge, so as to assign them to IPO preparation or as a right-hand man in management. However, there is a sense of discontent on the ability and mentality of actually available human resources, i.e. former employees at large corporations or middle-/senior-aged persons. Possible options include a government initiative to provide educational sessions to potential venture business workers, and invite venture business leaders, venture business officers at the government, researchers, and other experts as lecturers for such sessions.

SMRJ recommendations, based on survey results, on the government's support measures for securing human resources, include (1) raising recognition of existing support measures such as grants for capturing and educating human resources with strong demand, (2) using the examples of successful venture businesses to offer practical training to potential workers, so as to overcome the negative gap between human resources sought by ventures and human resources they can actually secure from the labor market, and (3) creating opportunities for venture businesses to appeal their presence to potential workers.

MALAYSIA

"Nurturing the Business Community through Entreprenuerial Support : The Role of MARA"

Razman Bin Ruslan
Mara State Office of Selangor

INTRODUCTION

The development of entrepreneurship as both concept and activity has been growing in importance in Malaysia. The perceived importance of entrepreneurship to the growth of Malaysia's economy is evidenced by the sheer amount and variety of supporting mechanisms and policies that exist for entrepreneur, including funding, physical infrastructure and business advisory services. The establishment of a special ministry for entrepreneurs, the Ministry of Entrepreneur and Co-operative Development clearly showcases the importance the government places upon the issue of entrepreneur and entrepreneurship development.

Embedded within these larger policies is the agenda of creating a Bumiputera Commercial and Industrial Community (BCIC), which involves fostering Bumiputera entrepreneurs, professionals and creating a Bumiputera middle-class (Economic Planning Unit, 2001). This agenda has become the backbone of Malaysia's strategy for strengthening national entrepreneurship and undergirds all related policies and strategies have to take into consideration. Non-Bumiputera entrepreneurs (Chinese, Indians, etc.) have not been totally neglected however. The government continues to nurture the business community through a variety of entrepreneurial support services.

Value Creation and Business Success

The most successful organizations understand that the purpose of any business is to create value for customers, employees and investors. The interests of these three groups are inextricably linked. Therefore, sustainable value cannot be created for one group unless it is created for all of them. The first focus should be on creating value for customer, but this cannot be achieved unless the right employees are selected, and unless investors receive consistently attractive returns.

The meaning of value creation can be identifying the target customers. It entails providing products and services that customers find consistently useful. This value creation is typically based on product innovation and on understanding customer needs. Companies can innovate and deliver outstanding services only through the commitment, energy and the imagination of their employees. Value must therefore be created for those employees in order to motivate and enable them. Value for employees includes being treated respectfully and being involved in decision making. Employees also value meaningful work, excellent compensation opportunities, and continued training and development. Value for the investors means delivering consistently high returns on their capital. This generally requires strong revenue growth and attractive profit margins. These can be achieved only a company delivers sustained value for customers.

PRIVATIZATION AND ENTERPRISE CREATION

Beginning in 1983, the government began to encourage privatization: moving to divest state-owned enterprises, contracting out and licensing out to the private sector of services previously provided by the public sector. The Privatization Master Plan had indeed stimulated entrepreneurship development by providing greater opportunities to private sector entrepreneurs. The privatization of Malaysian International Shipping Corporation (MISC), Malaysian Airline System (MAS), Syarikat Telekom Malaysia (STM) and Tenaga Nasional Berhad (TNB) increased business opportunities by allowing the private sector to venture into areas previously monopolized by government, namely broadcasting, shipping, airlines, telecommunications and power generation.

Strengthening the Infrastructure for Small Medium Enterprise Development

An enterprise is considered an SME in each of respective sectors shown in Table 1 below based on annual sales turnover or number of full-time employees. The National Small and Medium Enterprise Council is chaired by Prime Minister. The Council comprises Ministers and Heads of 18 key Ministries and Agencies involved in SME development. They chart the future direction and strategies, design future development and support programs, and determine the provision of technical and financial assistance.

Table 1 : Definitions of Enterprises by Annual Sales Turnover & Employment

Size	Manufacturing/ Employees	Primary Agriculture/ Employees	Service Sector/ICT Employees
Micro	Less than RM 250,000/ Less than 5 employees	Less than 200,000 Less than 5 employees	Less than 200,000/ Less than 5 employees
Small	Between RM 250,000 and less than RM 10 million/ Between 5 and less than 50 employees	Between RM 200,000 and less than RM 1 million/ Between 5 and less than 19 employees	Between RM 200,000 and less than RM 1 million/ Between 5 and less than 19 employees
Medium	Between RM 10 million and RM 25 million/ Between 51 employees to 150 employees	Between RM 1 million and RM 5 million/ Between 20 employees to 50 employees	Between RM 1 million and RM 5 million Between 20 employees 50 employees

To further strengthen the infrastructure for SME development, the Council decided on the following activities with the Bank Negara Malaysia acting as the secretariat:

a. Coordinate training and human resource development for SMEs.
b. Enhance management and publication of SME information.
c. Strengthening the marketing and promotion of SME products/services.
d. Improve SMEs' Access to financing.
e. Introduce the Small Debt Resolution Scheme for SMEs.

THE ROLE OF MAJLIS AMANAH RAKYAT (MARA)

In this section of the paper, we describe the work of one of the implementing agencies on the Council, Majlis Amanah Rakyat (MARA).

Majlis Amanah Rakyat (MARA), or the Council of Trust for the Indigenous People,

is an agency under the Ministry of Entrepreneur and Co-operative Development. It was incorporated on 1 March 1966 through a Parliamentary Act as a statutory body. It was a result from a resolution of the first Bumiputra Economic Congress held in the preceding year.

The Council's responsibility is to promote, stimulate, facilitate and undertake all activities pertaining to economic and social development of the nation particularly in the rural areas. One of its key objectives is to encourage, guide, train and assist the Bumiputera especially in the rural areas to enable them to participate actively in commercial and industrial activities so as to create a strong, viable and professional business community.

Implementation-strategies

To achieve its objective, MARA's strategies include creating and increasing the number of Bumiputera entrepreneurs and upgrading their level of participation in economic activity.

MARAs thus actively participates in specific commercial and industrial enterprises through investments and management of companies as a means of nurturing and promoting Bumiputera participation in commerce and industry. It also seeks to increase the number of trained Bumiputera manpower at all levels and in various fields for the needs of the nation's commercial and industrial sectors.

It also provides other facilities and services where appropriate and acts as a trustee in areas that can help raise the social and economic status of the Bumiputera community directly or indirectly.

Entrepreneurial Development Division

MARA's Entrepreneurial Development Division aims to upgrade entrepreneurs to higher-level knowledge, expertise, and managerial competence. Bumiputera entrepreneurs will be given entrepreneurial training, guidance, assistance and motivation to create resilient and successful entrepreneurs.

The main activities under this division are:

Entrepreneur Training

The division provides services for awareness training, knowledge and guidance to potential entrepreneurs. It also provides courses to upgrade entrepreneurship and management skills. The Entrepreneur's Development Training (EDT) is the key program in the division that exposes the participants to achievement motivation training and business management training. The participants were assigned to field work to identify feasible business venture, experience the job training and develop the business plan. Participants were guided in preparation of their working papers before presenting them to the financial institutions for funding or financial assistance.

Natrah binti Ahmad, Managing Director of A.A HAYAT NIAGA, Mini Market and Wholesale Suppliers in Kajang, Selangor was a EDT participant. She started her small mini-market in 1992 with financial loan of RM 40,000 from MARA. Her business has grown to yearly sales in excess of RM 12 millions. She was presented with the EDT participant model achievement award by MARA State of Selangor in 2004.

Apprenticeship Training Scheme

Under this scheme, the division provides basic technical equipment and guidance to

develop potentially successful entrepreneurs to operate in the small to medium scale industries. This program is conducted in conjunction with research institutes such as SIRIM, MARDI, Universities, and mentor factories/vendors. The training scheme are provided for the following industries:

i) Metal Industries
ii) Ceramic Industries
iii) Food and Carbonated Drinks, etc.

Mr. Masaod bin Jamal, from Gombak, Selangor was the participant in this apprentice scheme. He started his business as a mechanical and engineering construction. He has excellent achievements, having completed government electrical construction projects of more than RM 3 million yearly. He also operates telecommunication equipment from a one shop lot.

Incubator Center and Premises

New entrepreneurs share basic temporary office facilities in the incubator center. They will be given guidance and training before venturing into business.

Rahmat bin Abdullah, occupied MARA incubator from 2003 until 2004 and was successful with new owned office at Shah Alam, Selangor. His company supply various hospital equipment with an average yearly income more than RM 1.5 million.

The incubator premises are the initiative adopts a holistic approach by incorporating all MARA entrepreneurial development programmed and initiatives into one package so that the entrepreneurs and companies have opportunities to grow, expand and become self-reliant. The objective of this initiative is to produce top entrepreneurs who are able to compete at the global stage. In 2003, a bio-composite pilot project involving 5 participants was developed in Teluk Intan, Perak.

Consultant Services Scheme

This scheme provides business consultancy services by consultants or experts to strengthen entrepreneurial initiatives and identify business problems as well as solutions.

Entrepreneurs provided the consultant services to operate more efficiently and effectively. The main areas are the manufacturing entrepreneurs that have production problems and managing operation difficulties.

Ebiza Pack Sdn Bhd, owned by Dr. Sulaiman Abu Bakar, engaged the consultant from the MARA panel helping to monitoring his new project in packaging and labeling. The factory involved in producing general printing, carton box packaging and labeling services to the small food industries in Kuala Langat. Therefore, they need the design advertising expert to up grade their product design for the customer satisfaction. He also produces metal craft as diversification in business.

Iltizam Consultancy with Mr. Rahim Adam as the Managing Director is one of MARA consultant panel that had been helping and monitoring entrepreneurs who need consultation to solve their business problem. Mr. Rahim optimizing entrepreneur bottom line enhancing business strategies by leveraging standard accounting and financial practices, establish management and marketing tools. Therefore, a comprehensive business plan justified by prudence and realistic financial forecast shall be produced which would enhance work process and facilitates business negotiations with strategic alliance.

Development of Business Infrastructure Division

This MARA division's main purpose is to assist, encourage and increase Bumiputera participation in the commercial and industrial sectors by providing suitable

business and factory spaces in strategic locations. It also provides and rent business and factory spaces at reasonable rate to Bumiputera entrepreneurs.

Mr. Akmar Nimat of Modan Automobile, an entrepreneur who successfully operate car sales in Gombak, Selangor, operates his business from a MARA shop lot. He converted three-shop lots into a showroom. As the national car dealer he manages to sell more than 60 units per month. He is a National Otomobil (EON) dealer. Modan Automobile originally operated from small premises. When they were relocated to better MARA managed commercial premises, his sales soared. The premises are much bigger, more accessible, at more strategic locations and equipped with better facilities. They augur well for the advancement of his business. His sales barely reached RM 500,000 at the old premises but reached RM 17.9 million in 2004 at the new premises. He was awarded the successful tenant from State of Selangor MARA for the excellent achievement.

Business Financing Division

This MARA division provides business financing facilities to assist Bumiputera entrepreneurs to start up businesses or to upgrade their businesses. It adopts the Islamic concept of interest free financing. The Business Financing Scheme covers the business sectors including manufacturing, trade, and franchise, transport, services, wholesale and agricultural. The number of entrepreneurs that received this business financing facilities is shown in the table below.

Table 3 : Business Financial Programmed in 2003

Sector	No. Entrepreneurs	Amount (RM)
Wholesale	1,854	103,167,700
Trading	1,581	27,734,000
Services	1,162	23,252,000
Manufacturing	208	4,705,000
Transportation	69	2,995,000
Total	**4,874**	**161,854,538**

Successful Created Entrepreneurs

Case 1: ASPATI Private Limited

The founder Mr. Hishamudin and his wife were awarded the Information Communication Technology (ICT) Entrepreneurship Award in 2003, a recognition given by the Ministry of Entrepreneur and Cooperative Development. The company started in 1997, dealing in multimedia products. After five years, the company expanded its business to other parts of the country. It started as a sole proprietorship and later transformed into private limited company. In the process, it acquired Qiam Pian Trading, an existing ICT company with existing customers. To sustain in this competitive market this company plan at least to get two new customers every year. Its business is mainly in multimedia which involves producing commercial television advertisement, video and advertisement montages for company profiles. It provides other services related to ICT such as networking, small/large multiuser system, workstation/peripheral, software product/services, training/consultant, etc. In order to stay competitive in the business this company is embarking on developing more creative products and services for its customers.

Case 2: Ramly Food Processing Pte. Ltd.

Mr. Ramly bin Mokni is the owner of a leading burger manufacturer in Malaysia. He started with a small-scale business in meat processing. After 17 years the company has turned to a bigger and more established company under the trade name "RAMLY BURGER". Starting from a small shop lot with small paid-up capital, the company has become a modern high-tech food processing manufacturer. The founder aims to produce 100,000 pieces burger every day. With increasing demand from customers, the company has invested RM 3 million to upgrade its production capacity especially in frozen storage capacity to almost 50 containers to store the raw meat before processing. The company had received excellence awards from many agencies for its business success. With the assurance of halal sources of meat, halal ingredients, clean and healthy production process and storage, the company had received a "JAKIM" Malaysian Islamic Council endorsement certification which has worldwide acceptance. The Halal certification is renewable yearly upon inspection by JAKIM officers.

The success of this business has spurred new and budding entrepreneurs to copy or follow his business success. At the same time some inspiring entrepreneurs have been given the opportunity to be their business associates, distributors and help in setting-up their small businesses.

CONCLUSION

Besides MARA, as the implementing agency focused on creating and increasing number of entrepreneurs especially among the Bumiputera (the indigenous people), there are other development agencies led by the Ministry of Entrepreneur and Cooperative Development. These include TEKUN National Fund, Infrastructure and Development Bank, Cooperative Development Department, Cooperative Guarantee Corporation, State Economic Development Center, Bank Rakyat and many others public and private organizations. The Central Bank of Malaysia is also directly involved in monitoring the financing schemes that are provided by commercial banks especially the scheme regulations and the interest rate.

Malaysian has a vibrant entrepreneurial base with huge potential to become a global player. Indeed, past and current policies to create a class of entrepreneurs have succeeded in the sense that there are more entrepreneurs involved in business enterprise now compared to before.

SINGAPORE

Entrepreneurship Development in Singapore

Daniel Soh Mun Thoh
SPRING Singapore
and
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Green Dot Internet Service Pte. Ltd.

This paper provides an overview of public and organizational policies that have worked in helping and encouraging entrepreneurship and value creation in the local enterprises.

INTRODUCTION

In the recent Global Entrepreneurship Monitor (GEM) 2004—a study on entrepreneurship activity in various countries—the report highlighted that although Singapore has made great progress in economic development in the last 40 years, largely due to our success in attracting Multi-National Corporations, this strategy alone is not adequate to ensure Singapore's future prosperity.

While more Singaporeans have indicated intention to start new businesses, fewer have actually chosen the path of entrepreneurship. Singapore remains an average performer in total entrepreneurial activity, ranking 21st out of 31 countries surveyed. In 2003, only 5% of Singapore's adult population engaged in entrepreneurial activity.

On the positive side, the GEM study reported that Singapore fares better in terms of 'more entrepreneurial-like activity in existing firms', ranking 11th out of 40 countries in terms of Firm Entrepreneurial Activity. This means that more firms are innovating new products and services rather than replicating existing goods and services.

When compared to 30 other nations, Singapore's environment for entrepreneurship was also rated above average on all dimensions—financial support, government policies and programs, education and training, commercial and professional infrastructure, and cultural and social norms.

However, countries in the region are improving their business environment to compete for foreign direct investment. Singapore will have to differentiate itself by developing an environment conducive for entrepreneurial activity and enterprise development.

Entrepreneurship in Singapore

In December 2001, the Entrepreneurship and Internationalization Subcommittee (EISC) under a national Economic Review Committee was formed. The functions of this subcommittee were two-fold: to strengthen the spirit of entrepreneurship and innovation in Singapore and to foster the growth and internationalization of local companies.

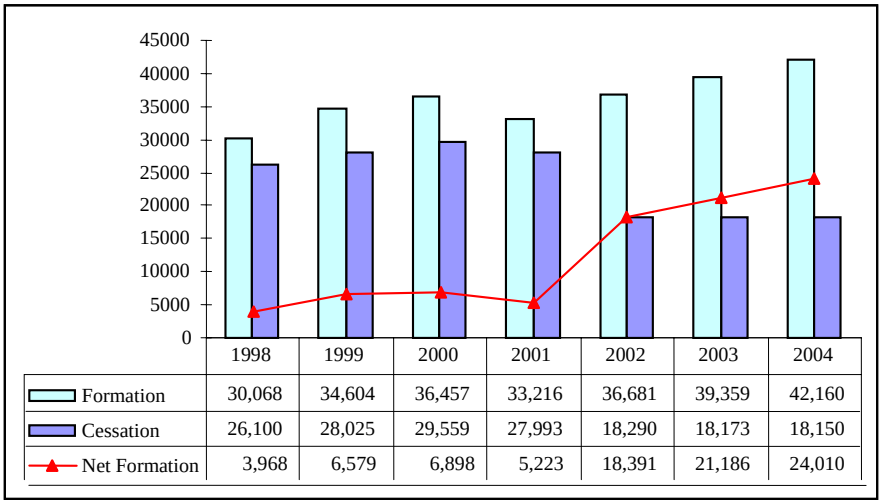
As a result of the recommendations, the Singapore Government appointed a Minister for Entrepreneurship responsible for promoting and driving the initiatives to develop a more entrepreneurial Singapore. The Minister also chairs the Action Community for Entrepreneurship (ACE).

Formed in May 2003 by Minister Raymond Lim, ACE is a movement involving

both the private sector and government sector to create a more entrepreneurial environment in Singapore. It seeks to be a change agent in building a more pro-enterprise environment through the facilitation of discussion, debate and recommendations on the regulatory framework; changing culture and mindset; improving access to finance and facilitating networking. Minister, Dr. Vivian Balakrishnan, currently leads the movement.

In recent years, there have been a growing number of company formations with 2004 showing a 27 percent increase over the previous year. Coupled with a steady stream of some 25,000 new businesses each year, this has resulted in an increasing trend of start-ups since 2002. Low levels of both company and business cessation has resulted in a growing trend of net company formation since 2002. The figures are encouraging as they signal both a growing number of enterprises as well as the ability of the enterprises to survive. Figure 1 below shows the number of formation and cessation of enterprises in Singapore for both companies as well as businesses.

Figure 1 : Formation and Cessation of Companies and Business



	1998	1999	2000	2001	2002	2003	2004
Formation	30,068	34,604	36,457	33,216	36,681	39,359	42,160
Cessation	26,100	28,025	29,559	27,993	18,290	18,173	18,150
Net Formation	3,968	6,579	6,898	5,223	18,391	21,186	24,010

Source: Department of Statistics

An economy with a high level of entrepreneurship is more able to cope with changes and is more resilient to the ups and downs in the business cycle. To transform Singapore into a more diversified and resilient economy, the Government is focusing efforts in four main areas that are critical for entrepreneurship to flourish: education, financing, regulations and facilities.

Education: Building an Entrepreneurial Culture

The biggest challenge for Singapore to develop a vibrant enterprise sector is to change the mindset of Singaporeans. This means that Singaporeans must have the instincts to sense opportunities and take calculated risks, and have the desire to build something out of nothing. To attain this cultural shift is a long-term effort which cannot be achieved overnight.

The younger generation, which is more susceptible to changes, is our key target. Our schools have revamped their curriculum and teaching approach. There is now more flexibility and variety. Students are challenged not to accept established ideas at face value

but to think about issues critically and creatively.

Formal courses on entrepreneurship have also been introduced at the tertiary level though the Centre for Entrepreneurship at the National University of Singapore (NUS) and the Nanyang Technopreneur Centre at the Nanyang Technological University (NTU).

There are also many opportunities for students to get exposure to business and entrepreneurship. For instance, tertiary students can seek attachments to start-ups in entrepreneurial hotbeds such as Silicon Valley, or participate in business plan competitions like the Lee Kuan Yew Global Business Plan Competition organized by the Singapore Management University (SMU).

To further this effort, the Government launched the Entrepreneurial Talent Development Fund (ETDF) in July 2004. With SGD25 million set aside over five years, it provides matching funding to Institutes of Higher Learning (IHL) to help seed their students' business ventures.

The scheme has to-date seeded 16 student start-ups, ranging from Internet-based consumer services to industrial robotics and supercomputing. While it is hoped that some will succeed, equally important is that those who do not succeed the first time will be wiser when they take on their next venture.

Financing: Increasing Access to Capital

A key condition for the growth of enterprises is the availability of capital at various stages of their growth. The Singapore Government has taken steps to foster an environment where financing and fund raising can be made more accessible. It involves the local financial institutions in its efforts to develop a spectrum of financing instruments and a business environment that is conducive to supporting financing to enterprises.
Figure 2 below provides a snapshot of some government financing schemes available to SMEs at various stages of their growth.

Figure 2 : Government Financing Schemes for SMEs

	Start Up	Growth	Internationalization
Financing Schemes	Debt Related Schemes: • Micro Loan Programme (MLP) • SME ACCESS Loan	Debt Related Schemes: • Local Enterprise Finance Scheme (LEFS) • Loan Insurance Scheme (LIS) •SME ACCESS Loan • Variable Interest Loan Scheme (V-Loan)	Debt Related Schemes: • Regionalization Finance Scheme (RFS) • Loan Insurance Scheme (LIS) • SME ACCESS Loan
	Equity Related Scheme: • Start-up Enterprise Development Scheme (SEEDS)	Equity Related Scheme: • Growth Financing Programme (GFP)	Equity Related Scheme: Growth Financing Programme (GFP)
Tax Incentive Scheme	• Enterprise Investment Incentive Scheme (EII)		
Supporting Programme	• Deal Flow Connection (www.dealflow.org.sg)		

At the start-up stage where it is usually difficult for start-up enterprises to obtain access to venture funds or bank loans, the Government initiated the Start-up Enterprise Development Scheme (SEEDS). Every dollar raised by a qualifying start-up from third-party investors is matched by SEEDS up to a maximum of SGD300,000.

Since its launch in October 2001, SEEDS has helped some 130 innovative start-ups with a total financing exceeding SGD33 million. These start-ups are projected to generate SGD350 million in value-add (VA) and more than 1,400 jobs by the end of this year. More significantly, at least one in ten SEEDS companies has secured additional funding to support their growth.

Of the 100 start-ups that have received SEEDS funding for at least a year, more than 60% of them have successfully developed and launched their products and services into the market. These products and services range from technology-intensive applications such as biometric solutions for physical access security to innovative household appliances such as a pail with an automated filter system to clean mops.

Qualifying new companies also enjoy full tax exemption on the first SGD100,000 of their normal chargeable income. This tax incentive enables new companies to retain a larger portion of their earnings to be ploughed back into their businesses. The full tax exemption applies to any of the first three consecutive Years of Assessment (YA) falling within YA 2005 to YA 2009. This scheme will cost the Government about SGD11 million per year.

In addition, the Enterprise Investment Incentive (EII) scheme introduced in 2004 allows investors in innovative start-ups to deduct their investment losses against taxable income. Investors in start-ups awarded the EII will enjoy tax deductions for losses incurred if these companies fail, or if they have to sell their shares at a loss. The objective is to encourage investments in innovative start-ups, which facilitates enterprises seeking equity financing. The EII is expected to cost the Government SGD36 million each year.

At the emerging stage where it is usually difficult for enterprises to secure debt financing, the Government works with the private sector to develop and make available more risk capital and loans to entrepreneurs. An example is the SME ACCESS Loan scheme, a new asset backed securitization program launched recently in April 2005. The scheme leverages on the bond markets to reduce the credit risks for lending banks so as to open up financing to potentially under-served enterprises, such as start-ups without established track records and Small and Medium-sized Enterprises (SME) that lack collateral. It is anticipated that the securitization issue will be in the size of at least SGD300 million.

Small businesses, however, lack financial ballast and are likely to run into cash-flow problems quite soon even if the businesses are viable over the longer term. To provide more timely relief for small companies, the Government introduced the Loss Carry-Back System in this year's Budget, which allows losses of up to SGD100,000 incurred by the company in the current year to be carried back for one year. This is to help them cope with cash flow problems and cyclical downturns, and position them for growth when the economy recovers.

The Government also helps facilitate access to financing through platforms like investment forums and Deal Flow Connection, an Internet-based portal that links investable deals to financiers. Launched in July 2003, the online portal facilitates the matching of SMEs with good deals with potential investors and financiers through the assistance of intermediaries.

Apart from the online portal, Investment Forums are also held regularly as part of Deal Flow Connection's activities. This is where companies are given an opportunity to

make a business presentation to a panel of investors in efforts to secure funding. To date, close to 700 deals have been facilitated through Deal Flow Connection.

Regulations: Creating a Pro-Enterprise Environment

For entrepreneurial activities to thrive, government regulations must not hinder businesses unnecessarily. The Singapore Government started a review of rules and regulations in 1999 to remove obstacles and red tape. Today, this process has been institutionalized with the establishment of the Pro-Enterprise Panel (PEP) which is chaired by the Head of the Civil Service. Since its inception, the PEP has received over 1,200 suggestions from businesses and has accepted about half of these.

In May 2004, the Government also commissioned a survey to rank government regulatory agencies on their responsiveness to the needs of business enterprises. The annual pro-enterprise survey examines five areas: compliance costs, review of rules, transparency, customer responsiveness and overall pro-enterprise orientation. More than 1,000 businesses are polled on the performance of 25 government agencies. The aim is to raise the awareness of government agencies towards how businesses perceive their regulations and regulatory processes, identify areas for improvement, and provide a benchmark for agencies through a cross-agency ranking.

As in most economies, the government is a good source of opportunities as it procures a substantial amount of goods and services. In Singapore, the Government Procurement market is worth an average of SGD10 billion a year. The Government recently relaxed the Banker's Guarantee and Performance Bonds requirements to help free up funds and ease cash flow for smaller companies vying for government projects. Tenders with an Estimated Procurement Value (EPV) of SGD500,000 and below now do not require a security deposit. For EPV above SGD500,000, the security deposit has been lowered from the current rate of 0-10% of contract value to 0-5% of the contract value.

The Government also removed the requirement that bidding companies must have an established track record. In addition, companies can now pool their resources and form a consortium to compete more equally with larger businesses for the larger contracts.

The government is also reviewing a section of the Companies Act that prohibits companies providing financial assistance to another company for acquisition of its shares. The aim is to create a more conducive environment for mergers and acquisitions so that businesses can grow financially stronger as they consolidate resources to become larger entities.

Facilities: Cultivating Innovation

Since 1999, Singapore has strived to create conditions that will stimulate and support high-tech enterprise and innovation. For this purpose, there is a dedicated Government agency called A*STAR (Agency for Science, Technology and Research), which aims to foster world-class scientific research and nurture world-class scientific talent for a vibrant knowledge-based Singapore.

To encourage innate R&D capabilities development at the company level, high-tech businesses in Singapore have access to a myriad of innovation funding programs. For example, the Local Enterprise Technical Assistance Scheme (LETAS) supports modernization and upgrading projects while the Innovation Development Scheme (IDS) supports the innovation of products, applications and processes. The Growing Enterprises with Technology Upgrade (GET-UP) program addresses financial, human resource and technology constraints in growing and globalizing companies.

Entrepreneurs also need easy access to conducive facilities where they can grow

their businesses. The Government has facilitated the setting up of business incubators which provide "plug and play" environments for start-ups. Today, there are about 70 incubators operating in Singapore, including foreign national incubators such as the China Torch Centre and the US Technology Centre.

The Technopreneur Home Office Scheme also allows approved technology businesses to be run out of residential premises. The scheme has been very well received with more than 14,000 home office applications approved since it was liberalized in June 2003 to permit a larger range of business activities.

In addition, Singapore has been upgrading its infrastructure to ensure that it stays ahead of the business demands of high technology and biomedical industries. A recent infrastructure project is the Biopolis that houses top-notch research institutes, private research organizations and renowned biomedical universities. The Biopolis hub is uniquely designed to foster a collaborative culture among the best research talents from all over the world engaged in genomics, molecular biology, bioprocessing, bioinformatics and bioengineering.

CONCLUSION

Uncovering the entrepreneurial spirit of the Singapore society is not an overnight process. The Government cannot manufacture entrepreneurs but it can certainly create the environment and conditions that encourage and facilitate entrepreneurship.

Singapore looks forward to learning from APO members the programs they have in promoting entrepreneurship in their countries. If such platforms of exchange amongst members are sustained, we believe that we can learn from each other and grow together.

REFERENCES

SPRING Singapore (Standards, Productivity and Innovation Board) –
http://www.spring.gov.sg
SPRING's seeks to enhance the competitiveness of enterprises through nurturing a pro-business environment that encourages enterprise formation and growth; facilitating the growth of industries; enhancing productivity & innovation and capabilities of enterprises; and helping to increase access to markets and business opportunities. The agency manages most of the financing and innovation funding programmers listed in this paper.

Action Community for Entrepreneurship (ACE) – http://www.ace.sg
ACE is a movement that involves both the private sector and government sector to create a more entrepreneurial environment in Singapore. It seeks to be change agent in building a more pro-enterprise environment through the facilitation of discussion, debate and recommendations on the regulatory framework; changing culture and mindset; improving access to finance and facilitating networking.

Agency for Science, Technology & Research – http://www.a-star.edu.sg
A*STAR is the lead government agency in cultivating world class research and scientific and the development of intellectual talents in Singapore.

Deal Flow Connection – http://www.dealflow.org.sg
Deal Flow Connection is the gateway where good business ideas get connected to finance. It is a private sector initiative, supported by the government to serve the deal flow community.

Economic Development Board (EDB) – http://www.edb.gov.sg

EDB is the government agency for promoting inward investment into Singapore and the lead agency for technopreneurship development.

GeBIZ (Government Electronic Business) – http://www.gebiz.gov.sg

An integrated online business centre where registered suppliers and trading partners can source for business opportunities and conduct e-commerce with the Singapore Government.

SINGOV – http://www.gov.sg/

The online homepage for the Singapore Government that serves as a convenient launch pad for users to locate information on government news and policies, leadership and bureaucracy, official statistics, as well as details and contact information of public service agencies.

THAILAND (1)

Value Creation in the Thai Plastic Industry

Wullop Liwiwathanapornchai
Thai Interplast Co., Ltd

THAILAND PLASTIC INDUSTRY

Thailand is the leading petrochemical producer in ASEAN and the country has a plenty of natural gas reserve. Natural gas has been used for energy and the feed stock of the petrochemical industry. The Thai plastic industry is based upon petrochemicals which are the raw materials for polymer and plastic resin production. The plastic industry comprises some 6,000 manufacturing sites, of which an estimated 30 are polymer and plastic resin producers, 3,800 plastic processors and 300 tooling and machinery suppliers. The remaining players are fabricators/assemblers of plastic products and materials. With factories in most provinces, the industry was focused on manufacturing during the 1980s with its products highly differentiated in nature and in the markets served.

Plastic Production Related Industry

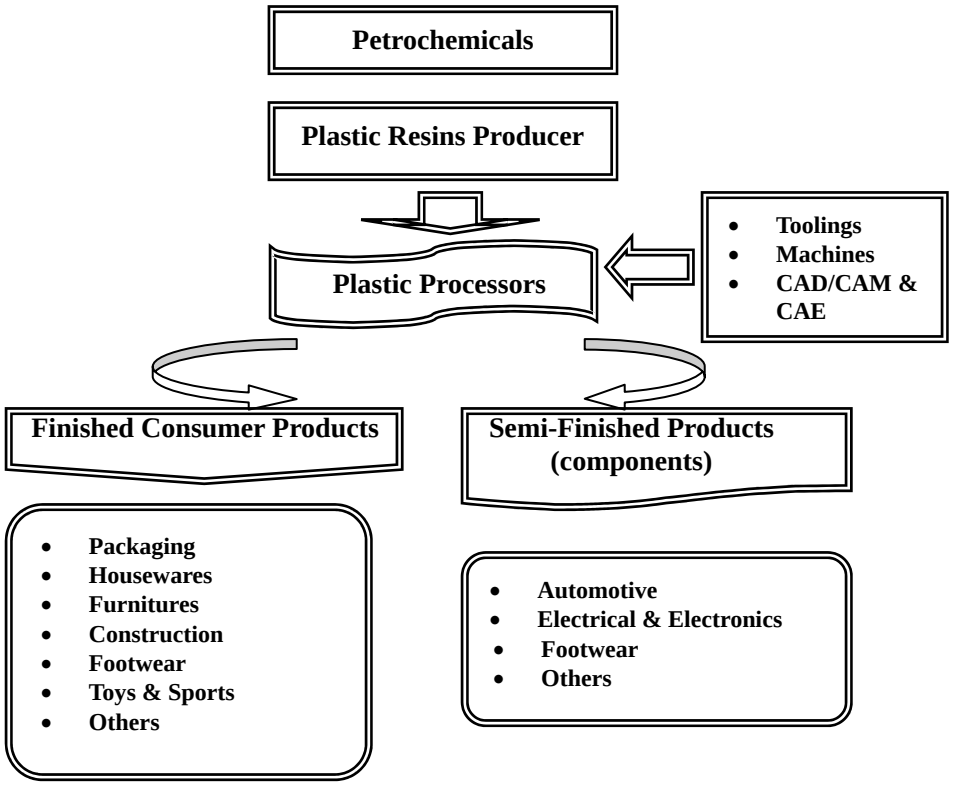


Figure 1 : Status of Thai Plastic Industry

Status of Thai Plastic Industry

Thai plastic industry has had growth based on exports and a national petrochemical policy. Strong growth in the domestic Thai economy encouraged increased imports of plastic products, materials, components and tooling across many industry sectors.

Sales 2003
Bath Billion

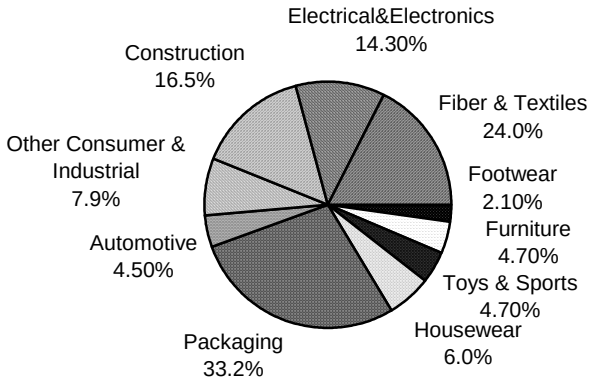


Figure 2 : Plastic Production Major Support Industries Within The Thai Economy

Survey of plastic sales, exports and imports was conducted during 2003/4:

- Sales: turn over exceeding Bath 715 billion (US$17.9 billion).
- Exports: total direct plastic product exports valued at Bath 477 billion (US$11.9 billion) or around 40 percent of Thai output.
- Imports: total plastic product and component imports valued at Bath 175 billion (US$4.4 billion). *Source: BSID Survey 2003/4*

Trend of Thai Plastic Industry

In the past, the Thai plastic industry had a competitive advantage of low manufacturing cost due to low skilled labour cost in ASEAN. With strong growth in Thai economy during the early mid–1990s, the Thai plastic product manufacturers rapidly increased to more than 5,000 factories in most provinces. Over 80% of these plastic manufacturers were SME (small and medium enterprise), a key supporting industrial supplier of products, parts and components to other manufacturing sectors.

In 1997, Thailand had faced a problem on economic crisis due to trade deficit and Thai currency devaluation. The Thai plastic industry was effected by this economic crisis and over 1,000 plastic factories were shut and many skilled workers were laid off. Other plastic factories had to run the production at low capacity to maintain their operations.

The Thai plastic industry has since restructured and follows the new government policy on the industrial restructuring plan to increase competitiveness and sustainable development for the Thai economy. At present, the Thai plastic industry cannot compete with other countries in term of low manufacturing cost because of high skilled labour cost.

Key factors for increasing competitiveness and sustainable Thai plastic industry are :

- To move towards production of high value added products for high end markets, with high quality standard by upgrading technology and as well as quality management.
- To improve efficiency in terms of production cost by improving production process, delivery and quick response and managerial capacity.
- To upgrade knowledge and production skills of industrial personel.
- To create production and trading alliances among the domestic and overseas to penetrate and expand the markets and to enhance technology transfer.
- To reduce industrial pollution through to adoption of clean technology.
- To develop product designs with own brand name as value creation in line with market preference.

THAILAND ASSETS FOR VALUE CREATION

Thailand has a variety of significant assets and many assets are still not fully utilized to create a higher value. These assets provide a real opportunity for Thai industry to develop new product based upon the value creation as well as a key increasing competitiveness of Thai industry and driving Thai economy growth.

Key Assets Creating Value for Thai Industry

- Natural Gas and Petrochemicals has provided a positive contribution to Thai plastic industry sector including other industry sectors such as automotive, electrical and electronics, etc.
- Natural Geography and Culture Attractions are the assets to drive tourism industry sector, one of the highest revenue generators in the country.
- Agriculture consists of various plants and herbs, rice, shrimp and poultry farms and others, a significant key to lead to food and medical industry sectors.

Thai Assets for New Product Development

A new product has been developed and based on the thinking of new value creation by focusing on:

- Using Thai assets of art, culture and traditions.
- Using our knowledge of plastic materials and processing experiences.
- Using special plastic material as our specification with high quality and property requirements.

  Properties required:
  - Rigid and durable performance
  - High strength in tensile and impact
  - High heat resistance at above 100^{o}C
  - Flame retardance
  - Chemicals resistance
  - Anti - UV and oxidation

NEW VALUE CREATION

Thailand has lots of famous artistic products which are art paintings, handcrafts such as wooden, ceramic and metal crafts and others. The product of art painting is

manually done by the artist and the artist starts his work from sketching and then painting until finishing the art painting. One product will consume lots of time and the artist can not reproduce the same quality as the original product. Most the product is only 2D (2-dimensions) and it looks a beautiful but it is not as realistic. As the manual production consuming a longer time, the cost of production is high and it is low production rate.

Concept for New Value Creation

The new value creation of new product, an artistic product, is based on the merging of plastic technology and artistic skill as concept:

"Technology plus Thai Art, Culture and Traditions"

Advantages of using plastic technology for the artistic product are:

- Short production time and low production cost.
- High production rate and reproducible the same quality as the original product.
- 3D (3-dimensions) product and looking more realistic.
- Able to modifying product design and adding more details of art work.

Key Factors for the New Value Creation Focus on:

- The new product is on esthetic with high quality and customer satisfaction
- Plastic material is high grade of engineering plastic "Alloy Polymer"
- Product design is light weight with handle and graphic printing about Thai culture and traditions
- History information of the new product is provided for customers

Entrepreneurial Team

The entrepreneurial team consists of :

- Marketing Group
  - Generate a new product idea based on the new value creation
  - Establish the need and specify the end-use requirements for the product
- Industrial Design Team
  - Specify the overall shape
  - Look and feel of the product
  - Concern with the ergonomics and esthetics of the design as opposed to manufacturing ability
  - Develop the initial models
- Product Engineering Group
  - Response for selecting the materials and processes to be used to manufacture the part
  - Design part in accordance with material properties
  - Evaluate the part design relying on both theoretical analysis and prototype testing
  - Ensure the product to meet of the end-use requirement
- Tooling Group
  - Response for both tool (mold) design and tool fabrication
- Manufacturing Group
  - Evaluate the tool design and the part design by initiating stage of manufacturing

A team work for entrepreneurial team is based on the concurrent engineering or parallel system:

- The development process is team oriented
- Communication and interaction between the different groups
- Common for all of the groups to have input into each of the design decisions
- The design groups and engineering groups working in parallel
- Planning and engineering activities that can take place

Processes Creating Value

Processes are divided two steps:

1. Plastic Processing
2. Artistic Processing

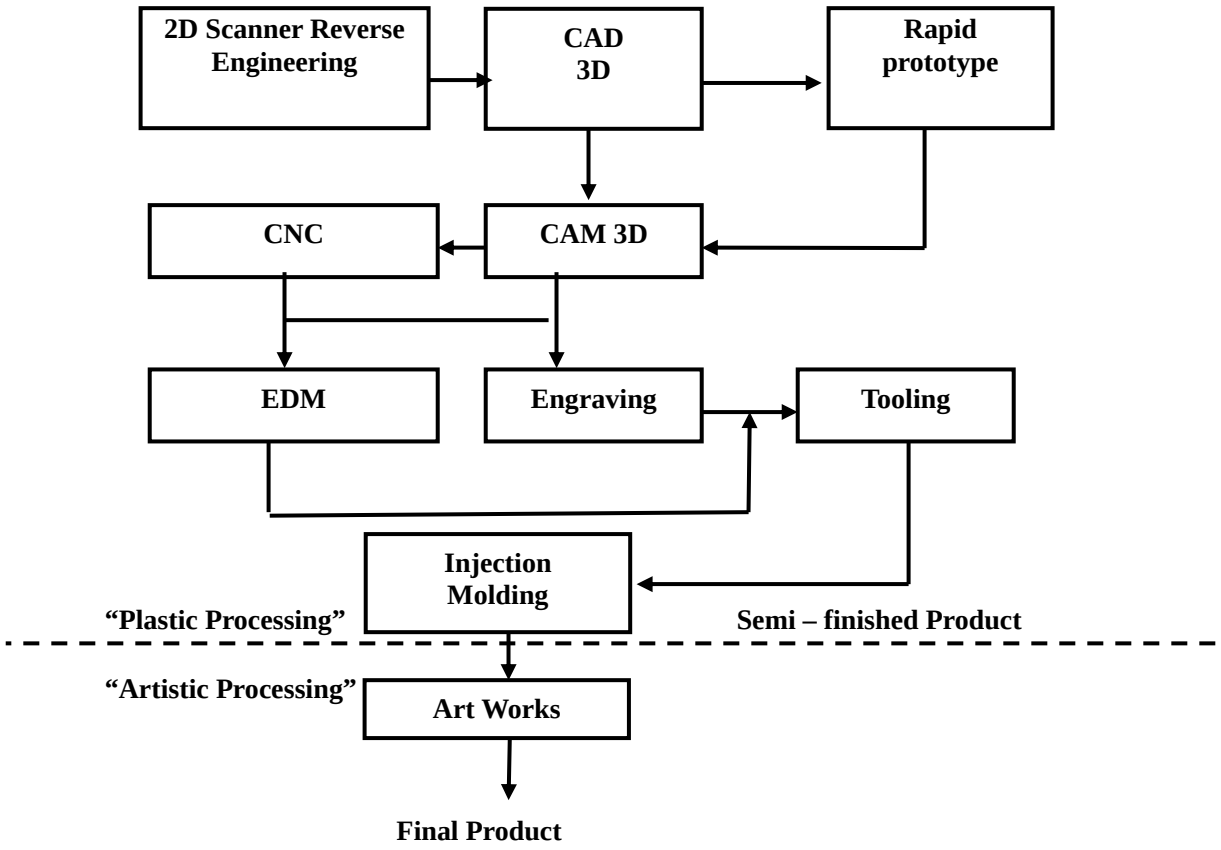


Figure 3 : Processing Flow Diagrams

Plastic Processing:

- Scanner/Reverse Engineering
  - scan a product design or picture
  - reverse scanning data into 2D data
- CAD 3D data
  - receive 2D data to process into 3D data
  - feed 3D data to rapid prototype generating model product for product design inspection

  - feed 3D data to CAM for mold design
- CAM 3D data
  - feed 3D data to CNC machining by EDM or Engraving for making a mold
- Tooling (mold making)
  - assembling a mold for injection molding
- Injection molding
  - produce a semi-finished plastic product

Artistic Processing:

- Art works on
  - Semi–finished plastic product
  - Final product
  - Patent Pendng

Strategic Alliances

There are few opportunities for the development of new technologies through strategic alliances with other companies but there are some opportunities cooperation for working with other companies in the cluster groups such as mold maker, plastic compounder and artist group.

- Mold maker–is to help in making some parts of mold.
- Plastic compounder–is to help in compounding plastic material as our specification.
- Artist group–is to help in art works.

CONCLUSIONS

The value creation is not only generated by new technologies and some assets available in the country can be sources for value creation. To buy new technologies for generating new value, is not the solution for maintaining competitiveness and sustainable business. To combine technology and assets is a choice for generating successful value creation.

THAILAND (2)

Thai Public & Organizational Policies Directed at Entrepreneurship Development

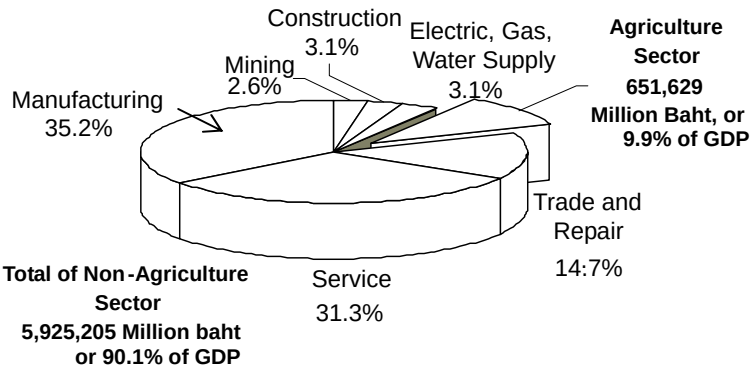
Nuttha Toonsuwan
Office of SMEs Promotion

THAI GOVERNMENT'S STRATEGY: A FOCUS ON VALUE CREATION

Structure in Thai Economy

In 2004, the Thai economy grew by 6.1%, with total Gross Domestic Product at 6,576,834 million baht (about 164 thousand million US dollars). The biggest proportion of GDP came from manufacturing sector. Export value, which mostly derived from manufacturing products, grew by 23% and totaled USD96.1 thousand million. The share of export to GDP increased slightly from 53.1% in 2003 to 53.6% to GDP in 2004. As Thailand is plugged into the global economy, the performance of the major economies, (US, Japan, China and ASEAN) will affect it. The lower growth rate of major economies is one of the main limitations hindering the export growth of developing countries, including Thailand.

Figure 1 : **GDP 2004 at Current Market Prices**



Export features in a big way in Thailand's economic growth for years. The major industries that drive Thai economy and are top exporters are electronic/electrical appliances and parts, motor vehicles and parts, plastics, foods and garments. The motor vehicles and electronic industries induced foreign direct investment to Thailand. However, most value-added is earned by assembly plants dominated by major players of the world who are the owners of the technology in vehicle components manufacture.

Most developing countries have made commodity exports central to their development strategy. As they move up the development ladder, they add value in the form of manufacturing and assembly, which require low– to semi– skilled labor. But over the long term, this model cannot be sustained. Commodities tend to face unfavorable terms of trade, even initially high value-added products, such as microchips, can become

commoditized. Cheap labor is not much of a basis for long-term development either. Countries that rely on cheap labor tend to get edged out by new, hungrier competitors. While developing countries may never be able to move away completely from commodities, they have subsequently to make value creation a bigger part of their development strategy.

In the last four years, the government's strategy map for building the nation wealth covered four strategic domains—macroeconomics, global competitiveness, local competitiveness and infrastructure. As Thailand's overall performance in terms of competitiveness depends on more than just a strong economy, the challenge for the government is to maintain the balance between drive for competitiveness and the need for sustainability. To correct this imbalance, the government has sought to develop our society's inner strengths and resilience from the grassroots level on up. The government's 'dual track policy' pays equal attention to increase productivity of the domestic grass-roots economy and enhancing Thailand's global competitiveness for balanced and sustainable development. The 'dual track development policy' was translated into a strategy called 'Local Links-Global Reaches'. While macroeconomics takes a role as a stabilizer, the economic and social infrastructure will play roles as enablers.

Lately, among many policies to push up economy and exports, Thai government is now more focus on value creation and strategy towards knowledge-based economy. The concept of "value creation" is emphasized in the Thai government's economic strategy during the second term of the Thaksin Shinawatra administration. Transforming and re-positioning Thailand will be the mission for the next four years.

Policy Statement of the Government

In the government policy statement in March 2005, the government pointed out an imbalance between industrial and agricultural sectors that still exists in the country's economic structure. The industrial manufacturing continues to be run by placing orders or according to the pattern developed by the foreign intellectual property owners, which, in turn, makes the country deeply dependent on the imports of raw materials, capital and technological expertise from abroad. Consequently, Thailand gets its returns mainly from wages and raw materials, the minor component in the production chain, which can be conceived as "Do much, gain little".

The agricultural sector, which provides a living for the majority of Thai people, still suffers from the fluctuation of crop prices in the world markets, the risk of natural disasters, the degradation of soil and water resources, and the non-tariff barriers against exported raw materials. At the same time, the service sectors, especially tourism, still rely on natural resources without optimizing the value-added. Therefore, the Government intends to restructure the country's economic structure. Otherwise, the economic growth will lead to a cycle of trade deficit and price competition which prevents the country from sustaining that growth.

Apart from the challenges within the country, the Government has to cope with the following dynamics of the world economy and international relations:

(1) The changes in the globalize economy and the trend towards free trade around the world will not only provide Thailand with opportunities to increase the country's exports, tourism and investment but also increase competition in the world markets. Therefore, we have to be conscious of this tendency and prepare ourselves to deal with the free flow of news and intelligence, technology, labor and peoples, capital, trade and investment and services in order to maximize their advantages.

(2) The imbalance in the world economy and financial speculation may lead to the fluctuation of exchange rates and commodity prices in the world markets.
(3) Rapid technological changes resulting from the accelerating improvement and development of fundamental technologies, including information technology, bio-technology, material technology and nanotechnology.
(4) Social changes as the result of the world demographic trend towards aging societies, urbanization and the awareness and cross-cultural fertilization can be considered as opportunities and challenges to the human resources development process and the future of the country, and finally.
(5) The uncertainties in the world political situation and threats to security include the spread of new diseases, various kinds of narcotics and natural disasters caused by climate change. All require the Government to introduce preventive and corrective measures, both nationally and internationally, to prevent the serious and negative effects on the economy and the way of life of Thai society.

The succeeding four years beginning in 2005 will be four years that transform Thailand into a secure and sustainable nation in every respect. The Government intends to provide the opportunities for the future and lay solid foundations for the economy, society and politics by focusing on strengthening the local people, replenishing the fertility of soil and water resources and restoring the power of decision to the community. The Government will also emphasize economic and societal restructuring to become more balanced, immunizing the economic system and reforming the education system with the aim of developing Thailand as a society with knowledge-based economy according to His Majesty the King's concept of a sufficiency economy. These efforts will lead Thailand to become a country with balanced, prosperous, secure and sustainable structures. Towards this end, the following policies will be pursued:

1. Poverty Eradication Policy (At the grass-roots level, at the community level, at the national level)
2. Human Development Policy and Quality of Life
3. Economic Restructuring Policy
4. Natural Resources and Environmental Policy
5. Foreign Policy and International Economic Policy
6. Policy on the Development of the Legal System and Good Governance
7. Policy to Promote Democracy and Civil Society Process
8. National Security Policy
9. Policy according to Directive Principles of Fundamental State Policies

A Focus on Value Creation

The former Prime Minister Thaksin stated that value creation goes beyond simply adding value. Developing countries in Southeast Asia and elsewhere may proudly point to high-tech assembly plants where value is added to high-tech products. But at the end of the day, the value of such products comes not from the assembly or the plants, but from intellectual property–the patents, the copyrights, the designs–that go into each product. For value creation to take place, first thing is to identify the comparative advantages, then add intellectual value and skills to create pricing power for their products and services in the world market.

As for Thailand, which is rich in artistic and aesthetic traditions, value creation may mean creating distinctive and unique products, developing new brands, and differentiating products based on the unique Thai style. Or it may be based on something else entirely.

What is important is that people must be given the tools and freedom to explore, to experiment, and to create. That is what makes the free market so compelling.

The then Prime Minister was convinced that value creation represented a new economic model for Thailand and value creation will contribute substantively to GDP growth. The creation and protection of intellectual property will become increasingly important as the value creation model takes hold.

To encourage value creation, education is the first part of the equation, in order to create knowledge workers in every field. The second part is the creation of an enabling regulatory environment. In this regard, the concept and practice of good governance is of much importance to the government. They are pushing for comprehensive reforms in the financial, corporate, and public sectors in line with good governance practices.

VALUE CREATION IN ECONOMIC RESTRUCTURING

One of the main policies of the government that stated in March 2005 was Economic Restructuring Policy. As the future challenge that remains is to maintain a substantial growth of the Thai economy in order to facilitate employment and income creation, more important, however, is the restructuring of economic growth to ensure its quality and sustainable expansion, thorough economic and wealth distribution, and immunization from global transformations in the globalization age. Therefore, in the succeeding four years, there is an urgent need to strengthen Thailand's economic foundation.

The Government will restructure the entire economic system with the aim of increasing product value based upon knowledge and Thainess, by combining a natural resource base, and Thai culture and local ingenuity with new entrepreneurs, good management, commercial innovation, establishment of acceptance of Thai brands, and restructuring of the market system in order to match production and services with global consumer demand to ensure Thailand's future sustainable expansion.

In restructuring the agricultural sector, the Government will support the value increase of agricultural products by encouraging research and development of technological innovations and biotechnology alongside local ingenuity and promoting community enterprises in adding product value. The Government aims to promote agricultural products processing in line with food safety standards, by developing systems to control the quality and standard of both exported and imported agricultural products consistent with global standards.

As for the industrial sector, which is a highly competitive production sector, the Government intends to transform those entrepreneurs who are still hired producers, receiving only a small profit from the business, into knowledgeable entrepreneurs who are able to use echnology to its utmost benefit so as to produce high quality goods which cater to market demands. The aim is to develop an industrial sector that can effectively compete in the world market.

The Government will promote the use of domestic raw materials and adding value to goods by focusing on high potential industries and newly emerging industries and by improving the efficiency of weaker industries. The Government will also encourage the development of industrial networks as well as of value-added products on a knowledge basis by promoting knowledge management process at all levels, ranging from local enterprises, small and medium enterprises and large enterprises.

In line with the government's policy above, the Office of National Economic and Social Development Board (NESDB) has issued the Economic and Social Restructuring

Strategic Framework (2005-2008). The objectives are towards sustained prosperity and better distribution. Value Creation from knowledge application is then focused as a significant fundamental of economic and social restructuring, along with the fundamental of economic stability and sustainability, proactive social policy to create positive externalities, and global and regional positioning.

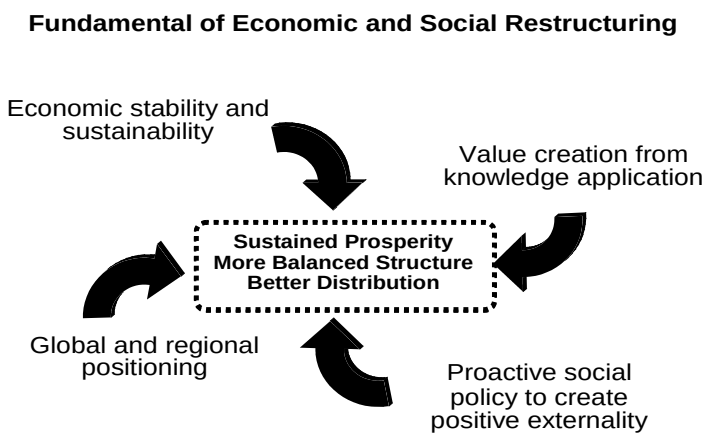


Figure 2: Economic and Social Restructuring Strategic Framework

The global economy is rapidly changing to knowledge based economy, which value of products and service come from other factors than resources and labor. High value would come from technology, research and development, designs, branding and images that go with the customers' trust, either in culture way or responsibility in social and environmental, etc. So far, Thailand has benefited in natural resources and labor, and gained only small profit of the whole value chain, thus the restructuring of manufacturing and servicing need to be accomplished. Using the comparative advantages of natural resources, cultures, folk wisdom, Thainess, complies with technology, knowledge, management, to create value in goods and services to meet the new demand of the world.

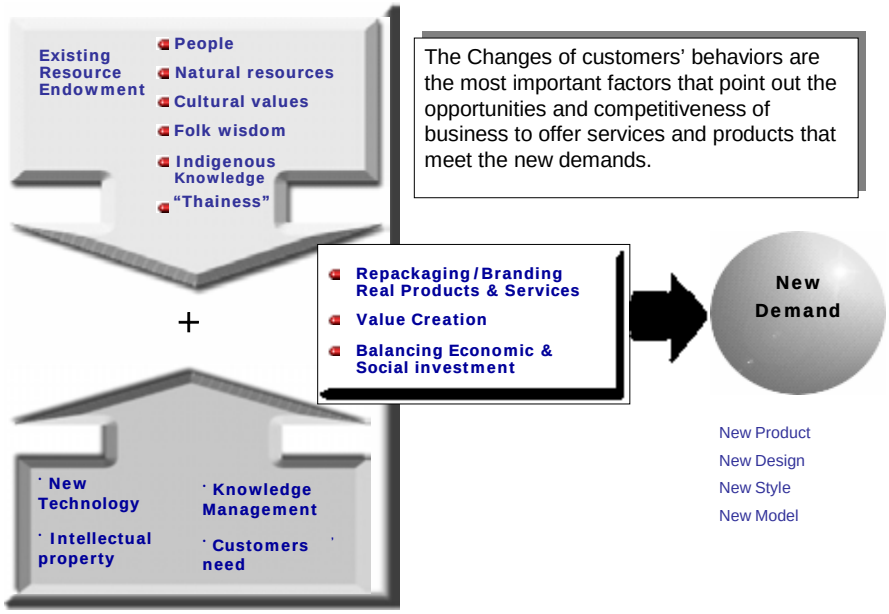
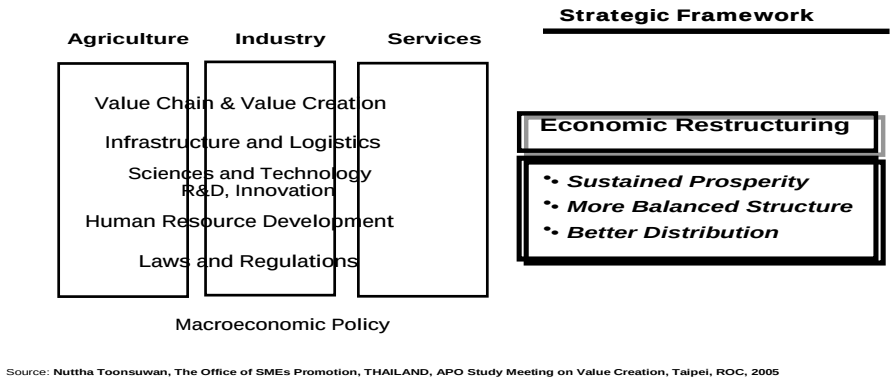


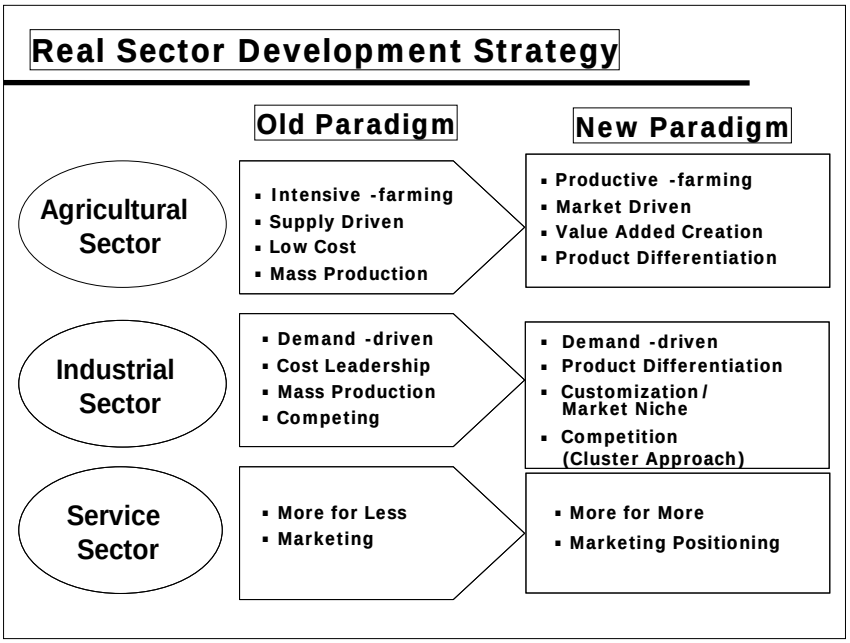
Figure 3: Value Creation through Harnersing National Comparative Advantage

Value creation from knowledge application need the cluster linkages of manufacturers and skilled persons in each specific fields, such as designing, marketing, R&D, funds, logistics management, manufacturing of parts or raw materials, to develop products and keep changing for competitiveness. The value creation framework is needed to apply with all sectors in country; agriculture, industry and services, especially with SMEs and community enterprises which has local wisdoms. The success of this business reforms would enhance the Thai economy as much.



Source: **Nuttha Toonsuwan, The Office of SMEs Promotion, THAILAND, APO Study Meeting on Value Creation, Taipei, ROC, 2005**

Figure 4: Strategic Framework for Value Creation



Source: **Nuttha Toonsuwan, The Office of SMEs Promotion, THAILAND, APO Study Meeting on Value Creation, Taipei, ROC, 2005**

Figure 5: Implementation of Value Creation in Industrial Sectors

ROLE OF SMES AND THE OFFICE OF SMES PROMOTIONS

In 2004, Thailand has 2,166,621 total enterprises which 99.77% or 2,161,577 are small and medium enterprises (SMEs). These SMEs contribute 37.8% of Gross Domestic Product (GDP), and employ 9,330,667 persons or 80.4% of total employment in all enterprises. The highest number of SMEs is in retail trade sector as 33.1%. Followed by 32.9% in service sector and 22.3% in manufacturing sector.

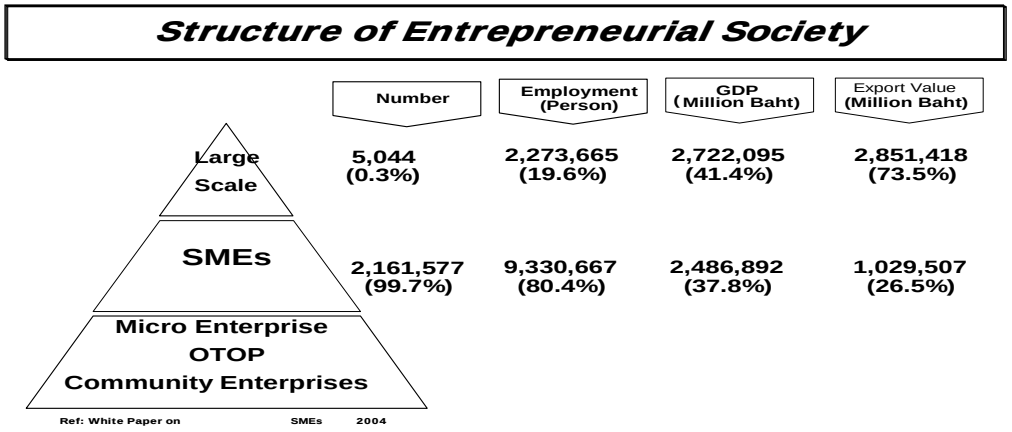


Figure 6: Structure of Entrepreneurial Society

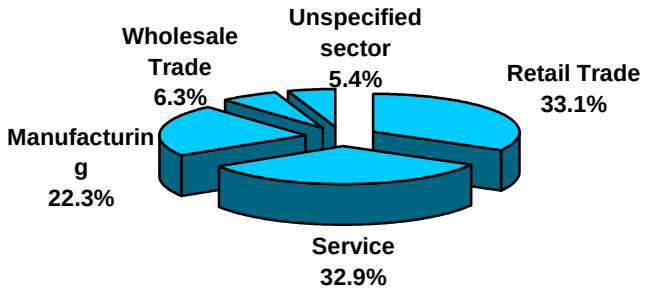


Figure 7: Distribution of SMEs in Economic Sectors

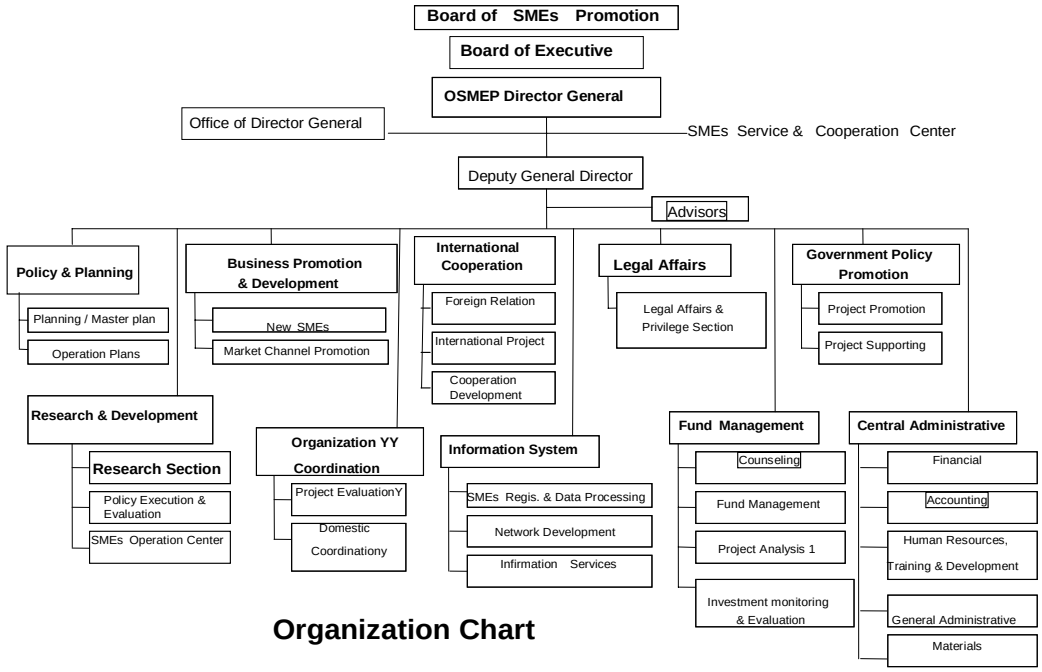
SMEs Promoting Offices

According to the Act for the Promotion of SMEs of B.E. 2543 (2000), enterprises are classified into manufacturing sector, wholesale and retail trades sector, and service sector. The promotion of small and medium enterprises cover all types of activities which were categorized into small and medium sized in general businesses, export-based entrepreneurs, new entrepreneurs, enterprises which are knowledge-based and community-based businesses. Thus, there are many related agencies or organization relate to promoting SMEs in each sector's strategies, such as Ministry of industry, Ministry of Commerce, Ministry of Finance, Ministry of Labor, Ministry of Education, Ministry of Interior, Ministry of Tourism and some specific institutes.

The dedicated central agency responsible for planning and coordination for SMEs is The Office of Small and Medium Enterprises Promotion (OSMEP), established under the Small and Medium Enterprises Promotion Act (Published in the Royal Gazette of February

17, 2000) as a legal entity. It is a government body that operates as an independent agency, not as a public office.

OSMEP is supervised by a 25-member Board of Small and Medium Enterprises Promotion, chaired by the Prime Minister. The Board has the task to generate the policies and action plans that provide the required components of comprehensive assistance to SMEs. Furthermore, a 15-member executive board chaired by the Permanent Secretary of the Ministry of Industry has been tasked to supervise the operations of the OSMEP.



Organization Chart

Office of SMEs Promotion

The vision of OSEMP is: "To be the central organization in motivating small and medium enterprises as well as individual entrepreneurs towards the strength and stability that are to make them the main driving force of the country's economy."

The major role of OSMEP is the central planning office to coordinate the operation plans of all relevant offices in promoting small and medium enterprises in the country. The planning will be instrumental in SMEs promotion, as this will be the national plans for small and medium enterprises promotion after having been approved by Cabinet. The OSMEP was thus assigned the following roles:

- As coordinator
- As facilitator for all the SMEs promotion offices
- As promoter and supporter for the various SMEs promoting offices

Other organizations that play important role for promoting SMEs are:

1) **Department of Industrial Promotion (DIP), Ministry of Industry**: DIP is responsible in supporting and promoting all entrepreneurs, SMEs, and also community enterprises.

2) **Institute of SMEs Development (ISMED)**: ISMED was established to support all necessary knowledge for SMEs, and implement activities in HRD development with supporting from Ministry of Industry and 7 universities.
3) **SME Bank**: the Small and Medium Enterprise Development Bank of Thailand Act came into force on 20 December 2002, re-establishing Small Industry Finance Corporation (SIFC) as the Small and Medium Enterprise Development Bank of Thailand or "SME Bank"**.** SME Bank's mandates are "to conduct business with the aim to develop, promote, and assist small and medium enterprises in the establishment, operation, expansion, or improvement of their businesses through the provision of loans, guarantees, venture capital, counseling and other necessary services as prescribed by the Act." The business philosophy is non-competition with commercial banks, but filling the service gaps that commercial banks are not daring or willing to provide. The core business is in financial services, whether as term loans, factoring, leasing, hire purchase, bank guarantees and other liabilities, promissory notes and financial instruments. Other value-added services are also provided in collaboration with the network of public and private-sector alliances with an aim to develop entrepreneurs, add more service contact points, and create market opportunities and business linkages among SMEs, both domestically and internationally, adding to the economic and social values.

Table 1: Thai Economic Agencies in Entrepreneurship & SME Development

	Some Related Agency
Human Resources Development	- DIP - Thai-German Institute - Department of Skill Development - Kenan Institute Asia (KIASIA) - Universities - Technology Promotion Association (Thailand-Japan)
Investment	- BOI - The Stock Exchange of Thailand / MAI - DIP - ISMED - Thai Chamber of Commerce
Science & Technology	- Thailand Institute of Scientific and Technological Research (TISTR) - National Science and Technology Development Agency - Technology Promotion Association (Thailand-Japan) - National Food Institute - Thai Industrial Standard Institute - Thailand Automotive Institute - Electrical and Electronics Institute - Thailand Textile Institute - Department of Science Service - National Center for Genetic Engineering and Biotechnology - National Electronics and Computer Technology Center

	Some Related Agency
	- National Metal and Materials Technology Center - Food and Drug Administration
Financial	- Bank of Thailand - SME Bank - Krung Thai Bank - Government Saving Bank - EXIM Bank - Thai Military Bank - Small Industry Credit Guarantee Corporation - Thai Venture Capital Association) - One Asset Management Limited - Market for Alternative Investment (MAI)
Marketing	- Department of Export Promotion - Department of Internal Trade - Department of Foreign Trade
Research	- Thailand Productivity Institute - Kasikorn Research Center - SCB Research Center

ACTION PLAN TO SUPPORT VALUE CREATION IN SMES

The keys to success for the SMEs have been to be:

1. Core Competency, Knowledge in doing business.
2. Differentiation of product or service.
3. Accessibility to financial resources.
4. Good management skill.
5. Understanding marketing mechanism, i.e. what the market needs and how to satisfy customer demand.
6. Learn to be lean and flexible enough for fast-changing globalization.

The government has evaluated the SMEs needs so as to address these needs – to strengthen them. Naturally, the SMEs themselves earn high potentiality. Our government roles are to find the ways to motivate their strengths through opportunity promotion, knowledge support, information exchange and especially funding source. The source of fund seems to be inherent obstacle for the SMEs since most of them own no hard asset to be pledged as the collateral to the bank. SME bank has purposely brought about to solve this issue. The OSMEP and other related organizations are here to help in management, to create opportunity, and to provide financial resources for SMEs to be able to stand on their own.

First thing to do is to turn ordinary entrepreneurs into smart entrepreneurs. Smart entrepreneurs are those who constantly looking to innovate and are not afraid to take chances, understand that the world is changing and they must be willing to adapt to remain competitive in the global market place. The key factors of smart SMEs are Core Competency, Differentiate, Competitiveness, Networking, Flexible, and good corporate governance.

There are many organizations involved in supporting SMEs. The strategies for promoting SMEs (2002-2006) are Motivating to be an entrepreneur, Enabling the

environment for business, Capability Building for competitiveness, Opportunity Building, and Networking of the strategic partners. At the present, OSMEP, as the coordination body, is revising the new Master plan and Action Plan (2006-2010) to promote SMEs. The discussions have been made among stakeholders in many issues: human resources development, financial support for SMEs, development of technology and innovation, amongst others. Measures and recommendations in these issues, along with the government policy and other related organization's plans have been planned to encourage value creation of SMEs for sustainability development.

Case Example of a Value Creation Program

One of the examples of success program that considered value creation is "OTOP". Our OTOP, or "One Tambon, One Product", scheme has leveraged Thai traditional knowledge, creativity, and skills into a profitable and growing industry. Under this program, each community is given charge of its own economic potential. The Government plays a supporting role, assisting on supply chain issues, giving advice in manufacturing and technology, networking, and opening up new markets. The benefits of OTOP have not only been economic. Local community leadership and pride have also grown as a result.

The One Tambon One Product (OTOP) policy was initiated at the same time as and in conjunction with the supportive policies for SME, both of which are regarded as laying the economic foundation of Thailand's sustainable growth into the foreseeable future. In essence, the policies of OTOP and SME have one goal in common, which is the attempt to strengthen small business units all over the country for the benefit of the country's sustainable economy.

The only difference between SME and OTOP is that OTOP policy stresses the community's ability to be self-reliant; job and income generation is by using rural folk wisdom and local resources; and future walks of life from generation to generation. Once people in the community are united and the local means are sufficient, the whole of mechanisms in both the public and private sectors will be properly linked with fast access to information and prompt corrective action for problems relating to supply, manufacture or distribution.

A 'Tambon' is roughly equivalent to a county in America. There are about 6,000 Tambons in Thailand, comprising nearly 25,000 villages and towns. In other words, a Tambon is the concern of 3 to 5 villages in very close proximity to each other, in very much the same micro-ecological system with similar weather, environment and resources available to and influencing their lives and capabilities.

Cotton and silk production, hand-looms and homespun, coconut-shell and copra and pandanus leaf handicrafts; woven water-tight basketry; wooden utensil and wooden decorative skills; metal-working cottage industries and canning-pickling cottage industries provide some of the mainstays and impetus for OTOP, while the sharing by elders of an area with the youth who follow in their footsteps to learn traditional values of respect for an all-knowing, all-provident Creator provides the motivating energy informing this nation-wide grass-roots project.

Thai government has taken the OTOP policy seriously and generated a number of tangible plans, for instance, the establishment of special agencies for assistance in product development to meet quality standards and marketing requirements; arrangement of financial sources; business advisories; market promotion and promotional websites such as <http://www.Thaitambon.com>. The OTOP Program has been implemented since 2002, having the national committee in directing of policies, strategies, master plan, standards and other measures to support the OTOP. The strategy program comprises of :

1) Capacity Building: Quality & Standards
2) Marketing & Distribution
3) Develop and Support the linkages to strengthen the community
4) Enhance the efficiency of management

The Permanent Secretary of Prime Minister Office is the secretary of the national OTOP committee. There are 5 sub-committees in production, marketing, quality & standard, and rural areas level.

OTOP, while implemented with Thai government help, was conceived by many at rural, non-governmental levels and carried to the Thai government which had the wisdom and foresight to recognize its value, applicability and cohesive capacity. OTOP has been well-received by virtually every citizen in every Tambon. In fact, local products from communities under the OTOP policy do not just mean the product itself but also include the thinking process, services, natural and environmental conservation, the way of living, tourism, folk-wisdom, culture and tradition and all things regarding the valuable resources of that community.

In recent years, local products from various communities are drawing attention from many countries as they support the long-term development and solid economic foundations of the nation. Thailand has successfully implemented the OTOP policy as a tool for furthering fundamental economic development and a better quality of life. Since the launch of the OTOP policy, sales volume of local products has been remarkably boosted, from 215.5 million baht in 2001 to 22,286 million baht in 2002, a tenfold increase in its first year.

Appendices

LIST OF PARTICIPANTS

Republic of China	Ms. Su Wen-Ling Section Chief Division of Entrepreneurship and Incubation Small and Medium Enterprise Administration Ministry of Economic Affairs
India	Dr. Gopalaswamy Arun Kumar Assistant Professor Department of Management Studies Indian Institute of Technology, Madras
India	Mr. Prabhat Kumar Jha Joint Manager The National Small Industries Corporation Limited
India	Mr. Praveen Badole Consultant RPMG Mumbai National Productivity Council
Indonesia	Mr. Ikhwan Asrin Assistant Deputy Minister for Creating New Entrepreneurship Ministry for Cooperatives and SME's
Islamic Republic of Iran	Dr. Ghassem Ansari Ranani Vice Chairman of Board of Director National Iranian Productivity Organization (NIPO)
Japan	Mr. Katsumasa Ariki Acting Manager Organization for Small & Medium Enterprises and Regional Innovation
Republic of Korea	Dr. Keunhoo Lee President/CEO Enerpia, Inc.
Republic of Korea	Ms. Kyong-Ok Kim Director & International Committee Chair Korean Business Women's Federation

Malaysia	Mr. Razman Bin Ruslan Mara District Officer Majlis Amanah Rakyat Mara State Office of Selangor
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Singapore	Dr. Francis S. C. Yeoh CEO Green Dot Internet Services Pte Ltd.
Sri Lanka	Mr. Krishnapillai Sakthidasan General Manager Link Natural Products (PVT) Ltd. Ceylon National Chamber of Industries
Thailand	Mr. Wullop Liwiwathanapornchai Managing Director Thai Interplast Co., Ltd.
Thailand	Ms. Nuttha Toonsuwan Chief of Research Section Office of Development and Research Office of SMEs Promotion

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PROGRAM AND SCHEDULE

20 July 2005 (Wednesday)	
Morning	Opening Remarks
	APO Resource Speaker's Presentation (I): "Value Creation Imperative" by Prof. Tan Wee Liang, Singapore Management University
	Local Resource Speaker's Presentation (I): "Taiwanese SMEs and Value Creation through Innovations" by Prof. Benjamin Yuan, National Chiao-Tung University, ROC
	Local Resource Speaker's Presentation (II): "The In^{6} IncuVestor® Model of Business Incubation,Value Creation by Encouraging Co-Entrepreneurship" by Mrs. Lin Lee, Lee, Founder/CEO, In^{6} IncuVestor®Inc., ROC.
Afternoon	Visit: Inventec Appliances Corp.
	Local Resource Speaker's Presentation (III): "Business Development and Organization Evolution: The Case of IAC" by Mr. Jackson Chang, Chairman, Inventec Appliances Corp., ROC
	Country Paper Presentations (I)
21 July 2005 (Thursday)	
Morning	APO Resource Speaker's Presentation (II): 'Value Creation through Innovation in SMEs Sector' by Dr. Jung Dae Suh, Korea Small Business Institute, ROK
	Country Paper Presentation (II)
Afternoon	APO Resource Speaker's Presentation (III) "Value Creation in SMEs/Venture Businesses through the Hands-on Supports" by Mr. Tetsuya Okuyama, Innovation 21, Japan
	Country Paper Presentations (III)
	Group Discussion
	APO Welcome Dinner at Ambassador Hotel
22 July 2005 (Friday)	
Morning	Country Paper Presentations (IV)
	Country Paper Presentations (V)
Afternoon	Group Discussion
	Syndicate Discussion/Outcome Presentation by Groups
	Summing-up and Closing
	Closing Dinner at Howard Plaza Hotel