

**A REVIEW ON KUCHIKI'S FLOWCHART APPROACH
TO INDUSTRIAL CLUSTER POLICY
- CANON EFFECT IN HANOI VIETNAM -**



*Hitotsubashi University, School of International and Public Policy (IPP)
Public Economics Program Master Course Sophomore*

Anh Dinh

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Abstract

Whether a region can survive in the competitive world may depend on the success of its industrial cluster policy. Many East Asian countries and regions have successfully developed their economies by adopting their industrial clusters such as Hong Kong, Taiwan, Singapore and Korea. Some other less developed countries like China and Vietnam are trying hard to learn from these experiences.

Kuchiki has developed an original theory to analyze and modelize how to adopt an industrial cluster. It's called the flowchart approach to industrial cluster policy. This paper is to make a review on Kuchiki's flowchart approach and apply this model into the case of Canon electronics cluster in Hanoi, Vietnam.

Chapter 1 simply gives a brief introduction of Kuchiki's the flowchart approach to industrial cluster policy.

Chapter 2 and Chapter 3 are my contribution to the flowchart approach to industrial cluster policy. Using data and papers of various institutions on the case of Canon, I would like to apply the model to Canon cluster to see how it works in reality, and to find out problems we encountered when applying the model in Hanoi. Taking into account of the experience of Canon and the problems that arose, I try to offer some proposals to the government of Vietnam on how to successfully and efficiently form an industrial cluster in the country.

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A Review on Kuchiki's Flowchart Approach to Industrial Cluster Policy: Canon Effect in Vietnam

Chapter I The Flowchart Approach to Industrial Cluster Policy

1. The importance of Industrial Clusters to a region

It is a known fact that FDI has greatly contributed to economic growth in many Asian countries by agglomerating firms in their many cities. This has been well testified by those cases in South Korea, Malaysia and Thailand, etc. In these countries, the so-called industrial policy for export-oriented development has been widely adopted with effective measures to lure foreign investment such as establishing export processing zones (EPZs) and industrial zones (IZs) and offering more favorable tax incentives. This led to the success and the formation of NIEs: Hong Kong, Singapore, South Korea and Taiwan.

Being attracted to favorable investment environment and cheap labor of these Asian countries, foreign multinational corporations (MNCs) choose to enter newly built EPZs and IZs to seek for low-cost high-profit production opportunities. Mutually related companies tend to gather together around the same region as long as they want to keep operation cost down, and by doing so, they form industrial agglomeration, or the so-called "industrial clusters".

What is a cluster?

"A cluster is a geographically proximate group of companies and associated institutions in a particular field, linked by commonalities and complementarities."

(Michael E. Porter, On Competition. P 199)

Why do clusters exist?

Industries tend to cluster. Basically, proximity brings:

- *Easy access to specialized suppliers, services and human resources*
- *Information spillovers*
- *Flexibility and fast change reaction due to extreme specialization*
- *Imitation facilitates faster innovation adoption*

All in all, a cluster allows SMEs to compete globally thanks to a better access to information and specialized resources, flexibility and rapid adoption of innovations.

Using a new data set on the growth of large industries in 170 U.S. cities between 1956 and 1987, Glaeser, Kallal, Scheinkman and Shleifer (1992) find that agglomeration of people and enterprises into a spatially narrow scope may facilitate information transaction and technology innovation, thus encourage industrial development along with municipal growth.

Making the best use of industrial cluster policy to form industrial clusters suitable for a region's conditions can be an efficient way to adopt and develop industries and therefore accelerate poverty reduction and economic growth in developing countries.

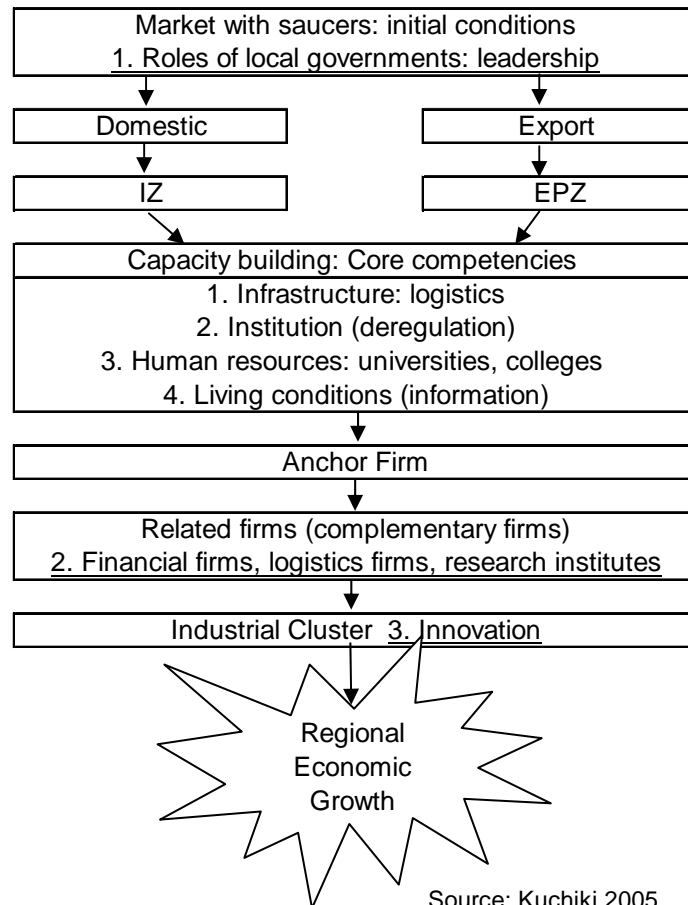
2. The flowchart approach to industrial cluster policy

The success or failure of industrial cluster policy of a region may determine whether it can survive in nowadays competitive world or not. There is a variety of types of industrial clusters in Asia: the automobile industry cluster in Guangzhou, China; the electronics cluster in Penang, Malaysia; and the electronics industry cluster in Thang Long Industrial Park (TLIP).

There have been efforts made to search for a way, a model of how to create a cluster by implementing industrial cluster policy. Kuchiki (2005) proposed a "flowchart approach

to industrial cluster policy”, theorizing that cluster policy is effective in forming industrial clusters by establishing EPZs and/or IZs, building capacity, and inviting anchor firms. The model can be seen in the flowchart below.

Figure 1. Flowchart Approach to Industrial Cluster Policy



To begin with, there are some premises that are to be taken into account of: the strong relation between an anchor firm and related firms, and necessity of prioritization of actions and appointment of actors in charge.

If thou trap the mother duck, thou also have her babies

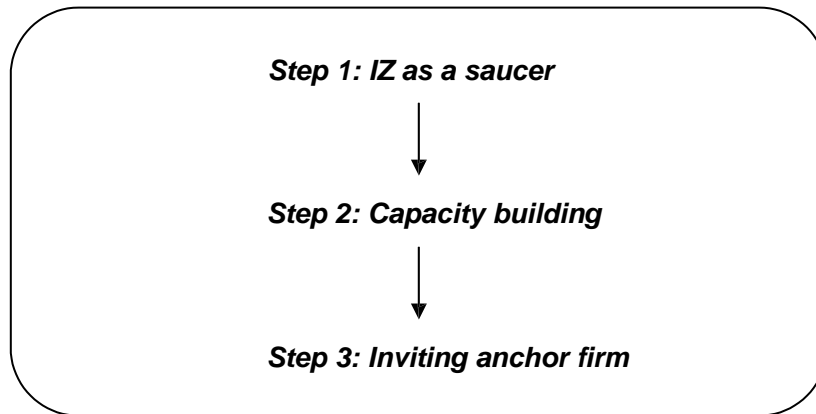
In the manufacturing industry, an anchor firm means a firm that assembles many parts and components into products. The relation between an anchor firm and its

related companies, which produce and sell parts and components to the anchor firm, can be described as that of *a mother duck and her babies*. An anchor firm in the automobile industry needs more than twenty thousand parts to assemble one car, and that in the printer industry requires about eight hundred parts per printer. So once the anchor firm has moved into an IZ, its related companies will follow suit, just like the way baby ducks follow their mother, because they find it convenient and economical to stay near their anchor firm, as it is easier to access and exchange information as well as transport goods between each other. As a result, an industrial cluster will be formed around the IZ by the anchor firm's related firms if sufficient conditions are met. This agglomeration will bring regional growth as we can observe in those cases of the automobile industry cluster in Tianjin and Guangzhou in China.

The effective way is to make a list of things to be done then determine priorities and actors in charge

It is advised that in this model, priorities of actions and roles of actors in charge of each action are extremely imperative. The process of creating a cluster consists of so many phases and in each phase there are many actions to take. Which we should do first, which we should do next and who should do each action are really important and if we know the right answers to these questions, it's likely that we can find the key to success in establishing a cluster.

3 Steps To Industrial Cluster Formation



Step 1: IZ as a saucer

In many East Asian countries, an industrial cluster is started with building an IZ typically with the central government being in charge. An IZ plays the role as a saucer, with fulfilled conditions ready for business and manufacturing operation, to invite foreign investors. This is the initial condition for foreign companies to consider investing into the region.

As a matter of fact, in the early stage of development in Thailand and Malaysia in the 1980s, actors in the semi-public sector were responsible for establishing EPZs and the Free Trade Zones or IZs. Japanese trading corporations also established many IZs in the ASEAN countries.

If this condition is met, which means there is at least one IZ in the region, then we move to the next step.

Step 2: Capacity building

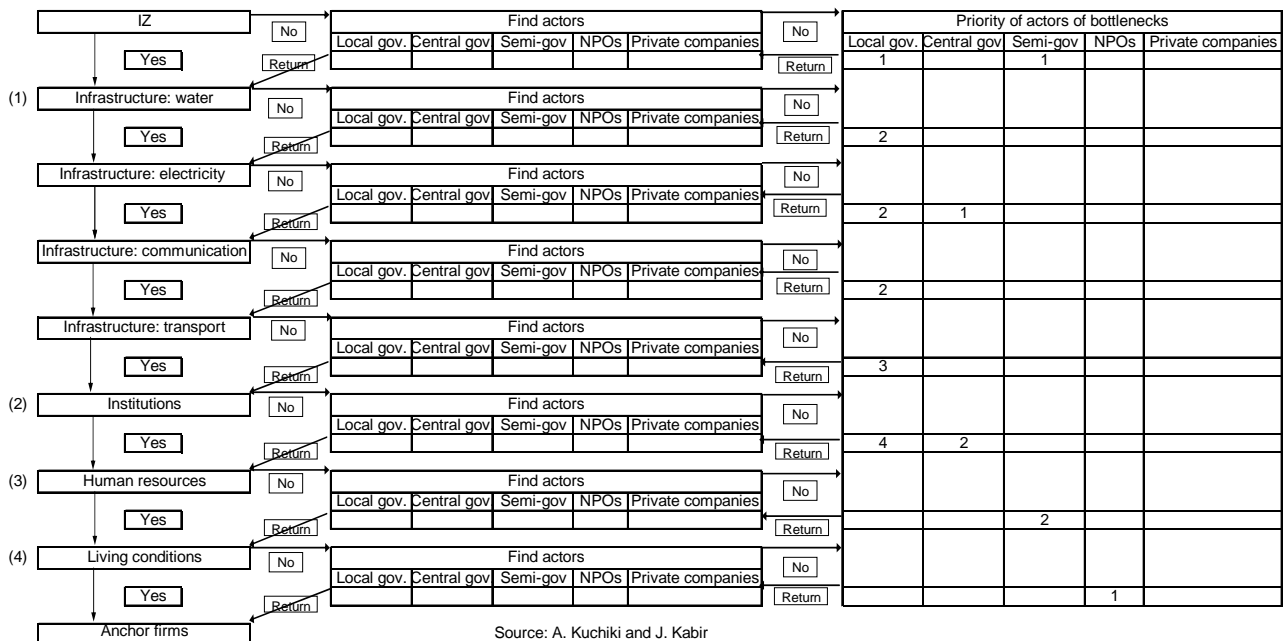
Physical Infrastructure

The process of capacity building is described precisely in the following Figure 2-1. First we start with **water supply**. “Is water sufficient for the IZs?”. There are 2 possible answers: “Yes” and “No”. If it is “Yes” then we proceed right down to the next one: Electricity, but if it should be “No”, we have to work on it. In case it is “No”, follow the arrow, we try to find actors

who should be in charge of building water supply system inside the IZs. Generally the actors tend to be local government (the 1st priority) and semi-government (also the 1st priority, such as JICA, JBIC, etc).

After determining the actor(s) in charge of water supply, we proceed down along the flowchart to examine **power supply**, **communication** and **transportation**.

Figure 2 Flowchart Approach to Industrial Cluster Policy



Source: A. Kuchiki and J. Kabir

Among all, power supply is the most important, since in both China and Vietnam there has been a severe power shortage that affects production activities of industries. In 2004 a serious deficiency of electricity occurred in China and thus degraded the fascinating Chinese investment environment, helped Vietnam rank higher than China on the list (Infrastructure issues of countries to which Japanese companies are likely to invest, JBIC). However, in 2005 a large deficiency of power in Vietnam reversed the situation: Vietnam ranked lower than China. The JBIC report also mentions that the so-called power problem has improved, and is now switching to “surplus” status in China, while in Vietnam the problem is

getting much worse. With the quickly growing economy, increasing foreign investment, and the high dependence on weather conditions of the power supply system (Vietnam has many hydro power stations), Vietnam is expected to keep putting up with power shortage for the next few years. In big cities like Hanoi and Ho Chi Minh City, rotational blackouts and a decrease in public lighting have been applied to help cope with the ongoing power hardship. It is reported by EVN that the shortage can reach 1000 MW every day. The government is also trying to make it suffice by purchasing power from Yunnan, China and operating more gas power stations.

Institutions (tax systems, one-stop services)

At this stage, the central government must institutionalize national tax systems and the local government has to institutionalize local tax systems. **Tax incentives, deregulation** and **one-stop services**, etc are imperative in attracting foreign investors in the contemporary competitive world.

Human Resources

Foreign investors in manufacturing industry obviously seek for cheap labor in developing countries in order to keep the cost down. Therefore, an abundance of cheap unskilled labor with a high literacy rate is crucial to invite the above-mentioned kind of anchor firms. Besides, what industrial clusters always face is the shortage of skilled labor after industrialization progressed: universities and OJT centers for innovation are thus necessary for further development.

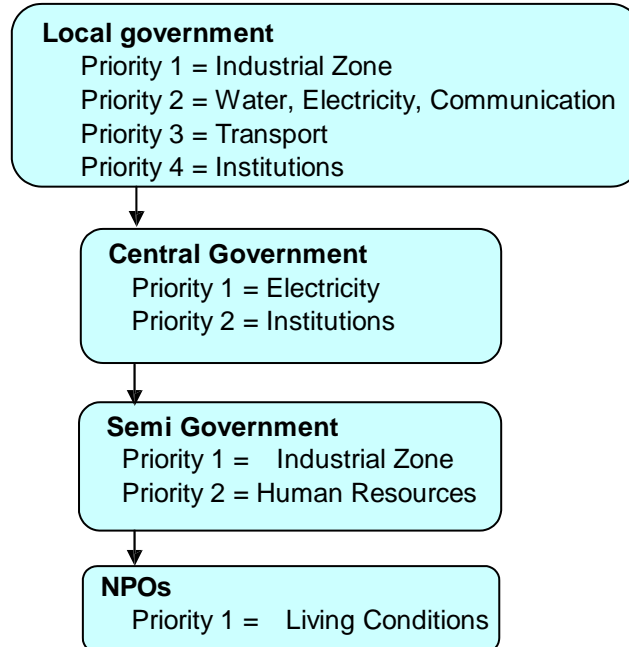
Living Conditions

Comfortable and satisfactory living conditions are needed to assure that staff members of foreign companies enjoy their lives and feel fulfilled to work hard. **Housing, schools, hospitals, shopping centers, and entertainment facilities** etc should be sufficient and of high-quality so foreign investors, who tend to be from countries more developed than the host one, of high positions and thus very high demanding, can be

satisfied.

Priorities of actors

Figure 3 Priorities of actors



Source: A. Kuchiki and J. Kabir

As shown in Figure 3, local governments play the main role in constructing IZs, supplying electricity, facilitating transport, and forming institutions. The first priority of local governments in Figure 2-2 is to construct IZs as saucers to invite foreign investors. The second priority during the same stage is to supply electricity, facilitate transport and form institutions. Central governments are in charge of supplying electricity and building institutions with these at an equal level of priority.

Step 3: Anchor Firm – Here comes Prince Charming to the rescue

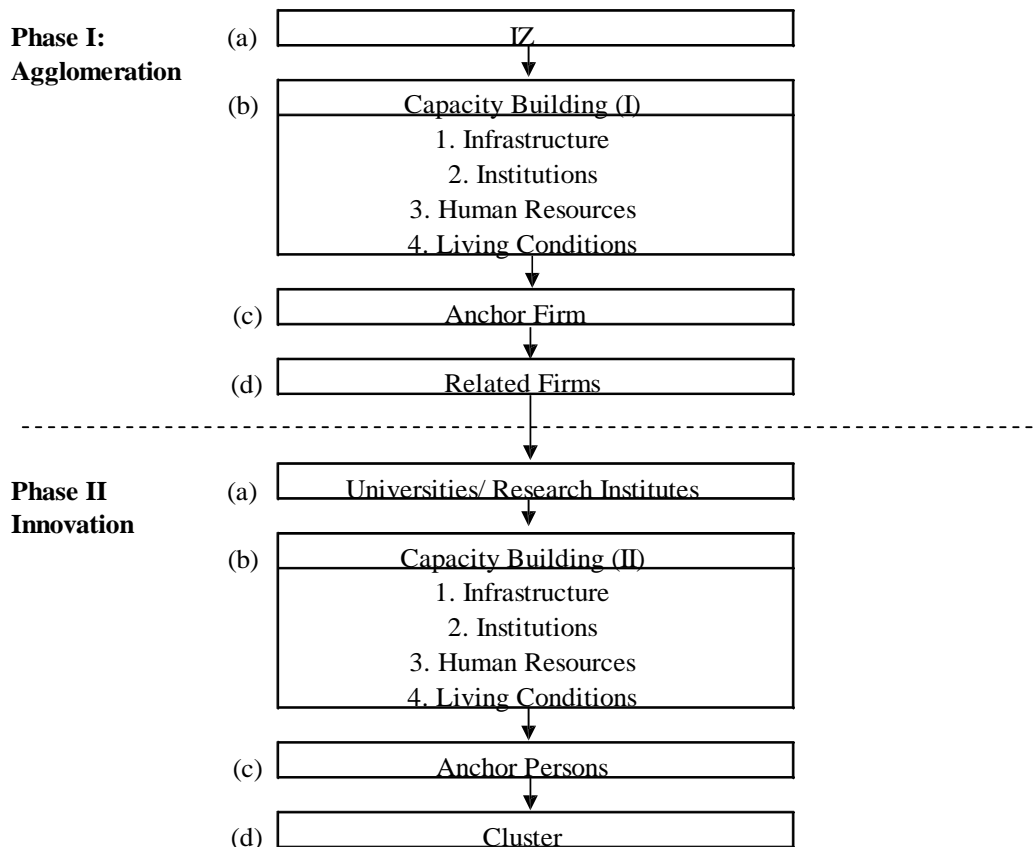
After all conditions above-mentioned are satisfied, the IZ is ready for anchor firm(s) to become a tenant. The anchor firm coming to the IZ will bring with it a lot of related suppliers and partners; and that brings prosperity to the IZ and the local region. It forms an industrial cluster inside and around the IZ. Even if it is a poor area with a low income level and high unemployment rate, after the arrival of the anchor firm, it will rise and become the Mecca for not only economic/production activities but also municipal development.

Two Major Phases to an Industrial Cluster

We have examined the 3 steps to build an industrial zone above, and will discuss two major phases to an industrial cluster hereafter, as described in the following Figure 4.

Industrial agglomeration (Phase I) consists of the 3 steps that we analyzed above, and Innovation (Phase II) has the same “Capacity Building” as Phase I, only at a higher level. The differences here are: (1) Once Phase 1 has been accomplished, the demand for more skilled labor and R&D activities for the sake of further development will urge universities and research institutes to grow and enhance themselves; (2) The advent of anchor person(s), such as Bill Gates, Japanese Prime Minister, Honda CEO, and Keidanren President, etc can encourage further foreign investment into the region, enlarge the scope as well as enhance the quality of the industrial cluster(s).

Figure 4 Flowchart Approach to Industrial Cluster



Source: A. Kuchiki and K. Yoshida

Chapter II In Light Of Canon Effect In Hanoi, Vietnam

1. Canon in TLIP, Hanoi, Vietnam

The Canon cluster in Hanoi can be observed during 3 phases:


- (1) *Step 1*: The construction of Thang Long Industrial Park (TLIP, Thang Long is the old name for Hanoi) completed in 2000
- (2) *Step 2*: Capacity building (core competence, infrastructure, institutions)
- (3) *Step 3*: The advent of anchor firm Canon in TLIP

Hereafter let us analyze details on the case of Canon cluster in Hanoi.

STEP 1: TLIP construction

The construction of TLIP, a joint project between Sumitomo Corporation (Japanese, 58%) and Dong Anh Mechanical Company (Vietnamese, 42%) was commenced in 1998 and completed in 2000. Being located on one side of the highway from Noi Bai Airport to Hanoi city central area, it is an outstanding spot that every one accessing to or leaving the airport for Hanoi can easily notice.

Information on TLIP

Location	 <p>16 km from the center of Hanoi City (30mins by car) 14 km from Noi Bai International Airport (15mins) 122 km from Hai Phong Port (100mins) 120 km from Cai Lan Port (100mins)</p>
Nationality	Japanese-Vietnamese (Sumitomo Corporation 58% / Dong Anh Mechanical Company 42%)
Scale	<p>[Phase1] Development Area: 121 ha Sellable Area: 87 ha</p> <p>[Phase2] 74 ha (completed by end Sep.2004)</p> <p>[Phase3] 89 ha (construction started in 2005)</p>
Total FDI registered capital	US\$ 439,623,667 (total of 1998-2003)
Characteristic	<ul style="list-style-type: none"> ▶ Various types of support are provided including the One-door Service, bank, cargo distribution centre, post office, general engineering and maintenance companies operating inside TLIP. ▶ Standard rental factories are available, that makes tenants start their operation in the IP easily with a minimum start-up time. ▶ Hanoi Steel Center was opened in the IP in July 2003. ▶ TLIP is the first IP with ISO14001 (certified by BVQI in Feb 2000).
Infrastructures	<p>Water Purification and Supply System</p> <p>TLIP provides tenants with purified water for industrial use through the distribution</p>

pipe network made of ductile iron.

Electricity

TLIP has its own on-site sub-station with capacity of 40MVA x 2 which receives the extra high voltage electricity directly from the national network, through 2 circuits. Tapping from the new 110kV transmission line from the Hoa Binh Hydraulic Power Plant via Chem sub-station as one source; and from Pha Lai Thermal Power Plant via Dong Anh sub-station as the second source can ensure the stability of power supply to tenants with less fluctuation of voltage.

Transformer and Switch-gear in Chem sub-station was renewed and expanded to 250MVA x 2 in 1999 with financial support from the World Bank.

The internal power distribution system is also underground and is a double loop system for making sure the power supply to the tenant is uninterrupted and reliable enough for manufacturing operation. Tenants receive electricity from ring main units which are installed right at every plot.

Road System

Internal roads are classified into two types as shown below. The road system in TLIP is designed to cope with the increase of traffic volume in the future and traffic characteristic of Vietnam.

Main Road

Width of the road ranging between 37 m (121 feet) and 42 m (138 feet). Asphalt pavement road with 6 traffic lanes for 2 sides. Street light poles are aligning in parallel with 40 m (131 feet) interval at both sides of road. 3 m - wide (10 feet) median and sidewalk at both sides. This Main Road, which is as high as the Hanoi - Noi Bai Highway, meets Level C in Japanese Traffic Classification.

Secondary Road

Width of the road ranging between 26 m (85 feet) and 27 m (89 feet). Asphalt pavement road with 2 traffic lanes for 2 sides. Street light poles are aligning in zigzag with 45 m (148 feet) interval at both sides of road. Sidewalk at both sides.

Telecommunications System

The internal telecommunication network is underground, with consideration of appearance and safety. 400 lines are available for the Phase 1 (121 ha) and Hanoi Post and Telecom Company will supply more lines for the future in capacity and quality with optical fiber to accommodate high speed data communication, ISDN and so on.

Source: GRIPS website

TLIP was not built by the central or local government of Vietnam, but by the initiative of the Japanese trading company Sumitomo Corporation. However, there are also industrial zones developed by private companies such as Nam Sach IP and Noi Bai IZ, or those constructed by central or local governments such as Que Vo IP (Bac Ninh city) and Hoa Lac Hi-Tech Park (Ministry of Science and Technology).

STEP 2 Capacity Building

Infrastructure:

Capacity building process inside TLIP was conducted during the construction of TLIP. Here we only emphasize the roles of Japan ODA, Vietnamese and the central/local governments.

Role of Japan ODA

Japan ODA has played an extremely important role in infrastructure development of Vietnam including Northern area.

In the first years of the 90s, Vietnam former Vice Minister of industry ministry Le Van Dy visited Japan and attended a meeting with Mitsui Corporation, where he asked the company to draw a Master Plan for Industrial Development for Vietnam. Mitsui has made the Master Plan in which some crucial proposals were given:

- Vietnam should give top priority to infrastructure development
- Vietnam should take advantage of both public and private sectors: use public sector in infrastructure development which costs a great deal of capital with little profit and strengthen private sector by inviting foreign investors. Private sector is imperative to industrial development.

Along with the master plan, Japan restarted its ODA towards Vietnam, which helped bloom infrastructure projects in the country, especially those relating transport and power. There were also several projects that positively contributed to the investment environment of TLIP. National highway 5 is the highway that connects Hanoi and Hai Phong port and very important for cargo transport in Northern area. It used to be nasty, jumpy and narrow with a lot of ruts and tracks on the surface so it took about 5 hours to drive from Hanoi to Hai Phong, but after the restoration the time needed to finish the distance of 102 km was shortened to only 2 hours. Hai Phong port and Cai Lan port, both accessible within 100 minutes drive from TLIP, have been renovated to increase their capacities. That was before the construction of TLIP, after that in 2005 the Hanoi – Noibai highway which passes the front of TLIP was also restored with Japan ODA.

On the other hand, Japan ODA has also helped finance many projects on power supply such as: Phu My power station construction, power development master plan research (1995-1996), etc. However, it could never satisfy the increasing thirst for electricity of the growing economy of Vietnam. There is still so much to work on.

Table 1: Japan ODA on Vietnam Infrastructure Improvement

Year	Budget (billion yen)	Content	Effect
1993	8.782	National highway 5 rehabilitation (1st term)	Shorten the time needed to travel from Hanoi to Hai Phong from 4-5 hours to about 2 hours. Lessen traffic jams,
	39.75	Hai Phong port restoration work (1st term)	Raise the water level, eliminate mud so bigger ships can enter, reduce cost per container
1995	54.7	National highway 5 rehabilitation (2nd term)	Improve further quality of the highway
	102.73	Cai Lan port expansion	Enlarge the port to receive more capacities
1999	132.67	Hai Phong port restoration work (2nd term)	Improve further quality of the port
2005	44	<i>Hanoi - Noi Bai highway restoration</i>	<i>More bridges for vehicles and pedestrians, more safe lanes and exits for vehicles: faster access, a modern face for Hanoi</i>

Source: Japan MOFA, made by consultant

Role of the government

Due to the limitation of research papers relating central/local government's attitude towards infrastructure building, this is really hard to examine, but we can still make the following conclusions:

- Initiative in industrial development master plan (according to Mitsui Corporation report)
- High priority to power supply in IZs
- Hanoi was at first was in charge of constructing TLIP but then it was switched to Ministry of Construction, with the cooperation of Sumitomo Corporation.
- Hanoi allowed and collaborated to support the construction of TLIP under the initiation of Sumitomo Corporation. Hanoi was too inexperienced to do such a big project. Central government wanted to invite more well-known companies to the North so as to industrialize the area, which was a good timing for TLIP and Canon. Hanoi, with the big boss' okay, didn't hesitate to facilitate administrative procedures for TLIP and Canon. (JICA report on TLIP development project)

Institutions:

- **Tax incentives:** To invite foreign investors to Vietnam, the central government has to implement favorable tax system to compete with other Southeast Asian countries. The following Table 2 (Page 17) shows that as of 2001 Vietnam had given foreign investors a lot of tax incentives: dividend withholding taxes, tax holiday length, and reduced CIT rates, etc of Vietnam are quite favorable compared to Indonesia, Malaysia, Thailand and so on.
- **One-door service:** with the support of Hanoi, a support center, where no F/S is required, investment licenses can be done within 14 days, custom procedures can be completed, was formed inside TLIP.
- **The Cargo Distribution Center:** was built and operated by Dragon Logistics Co., Ltd (powered mostly by Sumitomo Corporation). The company provides domestic and international logistics services to enterprises located inside TLIP.

Human Resources:

- **Unskilled labor:** TLIP is located in Dong Anh province, the countryside of Hanoi, where there is an abundance of unskilled labor. Besides, there are so many young unskilled unemployed Vietnamese people who flock to big cities like Hanoi to look for jobs. According to the Japanese project consultant of Vietnam Toyo Denso, a manufacturing company in the North of Vietnam, job opportunities are always applied with times more than the number of real vacancies. Vietnamese are well-known as hardworking and handy people. There is no need to worry about the supply of unskilled labor in Hanoi. However, there is always an ongoing raise in wages due to annual inflation.
- **Middle-class management, professional:** There are 22 universities and a lot of colleges

Table 2 Tax Incentives in Selected Southeast Asian Countries

	Cambodia	Indonesia	Laos	Malaysia	Philippines	Thailand	Vietnam
<i>Standard CIT Rate 1</i>	20%	Progressive rates:	Greater of 35 % or 1% of turnover	28%	32%	30%	32%
<i>Dividend withholding taxes</i>	Taxed at relevant CIT rate, creditable against CIT	15%: residents, 10-20%: non-residents (50% reduction in favored sectors/zones)	10%; creditable against CIT		10-25% on dividends remitted abroad	10% on dividends remitted abroad; domestic intercompany dividends are partly or wholly	3,5, or 7% on dividends remitted abroad
<i>Tax Sectors qualifying for incentives (not exhaustive)</i>	Hi-tech, export, tourism, infrastructure, energy, rural, development, environmental protection	Exports, hard-crop plantations, mining, businesses in remote areas		Corporations in manufacturing, agriculture, tourism, and various other activities may receive "pioneer"	Exporters	Exporters, various other industries	Exporters, agricultural processors, certain locations
<i>Tax holidays</i>	Up to 8 years	3-8 years income tax holidays for new enterprises in 22 specific sectors	Negotiable but rare	5 year tax holiday on 70-100% of statutory income (10 years for companies of national/state significance)	3-8 year income tax holiday	3-8 year income tax holiday	Up to 8 years
<i>Reduced CIT rates</i>	9% after end of holiday for favored projects		20%: foreign investors; 15% companies in lowlands, 10% companies in remote areas	3%: offshore companies in Labuan, 10%: foreign fund management companies		Enterprises in investment promotion zones get 50% reduction of CIT for 5 years	25%: foreign investors; 10,15, and 20% for 10+ years when certain are criteria.
<i>Investment allowances and credits</i>		Reduction of taxable income by up to 30% of investment in priority sectors		Investment allowances of 60-100% of qualifying capital expenditure	Tax credits for purchases of domestic breeding stocks and genetic material, as well as for incremental export revenue.	Allowance of 25% for investment in infrastructure	If profits reinvested for 3 consecutive years, a portion or all of CIT may be refunded.
<i>Accelerated depreciation</i>	Immediate expensing of plant and equipment investment financed from reinvested profit	Doubling of depreciation rates in favored zones/sectors		Accelerated depreciation of computer, technology, and environmental protection investments	Immediate expensing of major infrastructure investments by export enterprises in less developed areas		
<i>Import duty and VAT exemptions</i>	Import duty exemptions for promoted investments	Exemptions and reduced import duty and VAT rates on inputs in certain sectors, esp. exporters	Reduced import duties on inputs: 1%-foreign investors; 0%: exporters	Exemptions and reduced import duty and VAT rates on inputs in certain sectors, esp. exporters	Exemptions and reduced import and VAT rates on inputs in certain sectors, esp. exporters	Exemptions and reduced import duty and VAT rates on inputs in certain sectors, esp. exporters	Exemptions from import duties and VAT in certain sectors
<i>EPZs</i>					After tax holiday lapse, enterprises in these zones pay only 5% tax on gross		Various additional incentives apply in these zones
<i>Other</i>		Loss carry-forward extended to 10 years for companies in favored zones/sectors	Investors can negotiate for special incentives on a case-by-case basis	Double deduction of certain expenses (e.g., R&D, training).	Additional 50-100% deductions for labor expenses for export projects above a certain capital/labor ratio.	Dividend distributions during holidays are tax exempt.	

Source: Chalk (2001) and PriceWaterhouseCoopers (2001)

as well as vocational schools in Hanoi, including famous technical education institutes such as Hanoi Poly-technical University, Hanoi National University, Hanoi Open University. In terms of Japanese education, there are Hanoi Foreign Trade University, Hanoi University of Foreign Studies, Hanoi Open University, Phuong Dong University. An interpreter can be hired at US\$ 200 – 1000/month depending on the nature of projects. But as investment from Japan increases, there can be a shortage in the number of Japanese speakers in Hanoi. Hanoi local government, education institutes, and private companies (Eikoh Seminar has a branch in Hanoi. It supports Japanese education, head-hunting, training, etc) should gather together and solve this problem.

- High-level management: this is always a problem in countries of the 3rd world. Vietnam is not an exception. Mr. Ken Arakawa, JETRO investment advisor, who studied Vietnam history, has lived in Vietnam for more than 10 years, and was Seiyu General Director in Hanoi, also mentioned that it is hard to find qualified top management in Vietnam. Foreign companies have to hire people from abroad. This is a difficult problem, which can only be solved by the efforts of companies themselves (they should hire and nurture their own local top management since to reach top management, OJT experience is very much required) and the government, education institutes as well as private companies.

Living conditions:

Being located near Hanoi is an advantage to the living conditions around TLIP. Hanoi is the second biggest city in the country so it has many sophisticated aspects.

- Accommodation:

It is not difficult for foreign investors to find accommodation in Hanoi. There are many international top class hotels such as: Hanoi Hilton, Hanoi Tower, Hanoi Melia, Daewoo, Sheraton, Sofitel Metropole, Hanoi Nikko, etc and some have

extravagant apartments. Rents range from US\$ 1000 – 5000 a month. This is reasonable for foreign staff members of foreign companies.

- Hospitals:

There is a French international hospital (Japanese OK) next to Bach Mai hospital, which is 5 minutes drive from Nikko Hotel. There are also many hospitals with Japanese speaking staff such as: International SOS in Hai Ba Trung Street, Family Medical Practice.

- Shopping centers:

Food shops are all over the city but it would be safer to buy in super markets. Hanoi is full of medium-sized super markets, even some particularly for foreigners. There is also a huge German whole sale super market called METRO and located 20 minutes drive from TLIP with a variety of food, beverage, clothes, electronics, office equipments, etc. There are also many tailors around Hanoi old town, or expensive fashion shops around Hoan Kiem Lake area or in Hanoi Tower, etc. Shiseido also has a branch in Hanoi.

There are a lot of good Japanese restaurants such as: Edo in Daewoo Hotel, Ky Y restaurant, Taiyo Restaurant, Café Mot, etc.

- International, Japanese Schools:

There are at least 4 international kindergartens, 2 international schools (HIS secondary school, UN International school with elementary, junior high and high school levels) and a Japanese school for Japanese children (Hanoi Nihonjin Gakko located inside Hanoi Transport University, 5 minutes drive from Japan Embassy in Hanoi).

- Entertainment facilities:

There is a variety of choices when it comes to entertainment in Hanoi.

- Parks: Thong Nhat Park, Ho Tay Park, Bach Thao Park. All are peaceful and large.

- Music: Hanoi Opera House concerts, several jazz clubs, etc
- Cinemas: Dan Chu, Fa Film Vietnam, National Cinema, etc
- Sports: pools (Bon Mua, Sao Mai, etc), My Dinh National Stadium, Thai Ha Tennis, Thai Ha Golf Court, a lot of gyms, etc.
- Library for Japanese: VJCC in Hanoi Foreign Trade University. NHK, Nikkei Shinbum, Japanese books, etc are available.

With these living conditions, sure enough foreign staff members can enjoy their lives to the fullest in Hanoi.

And then a hero comes along...

When all the above-mentioned conditions are sufficient to satisfy foreign manufacturing firms, they will make their decisions and settle down in TLIP.

STEP 3 Anchor Firm Canon

Canon became a tenant of TLIP in 2001 and started its operation in 2002. At the same time, its related companies also followed suit such as Parker Processing Vn Co., Volex Cable Assembly, Sumitomo Coil Center, Santomas Vn Co., etc.

We will analyze the Canon effect further in section 2 below.

2. Canon Effect:

Positive Effects

- ***Create an industrial cluster in TLIP***

Canon is an internationally well-known manufacturing corporation. But it can't manufacture products on its own: it needs parts and components from suppliers to assemble into products. As soon as Canon started to build its plant in TLIP, its suppliers would move into the IZ to look for new business chance. This has formed an electronics cluster in TLIP.

As we can see in the following tables, in 2000 and 2001, the number of tenants in TLIP raised from 22 firms in 2001 to twice as much (40 firms) in 2007. This can be explained as

follows:

- The advent of Canon at TLIP has urged its related companies to move into TLIP.
- The restoration of Hai Phong port a part of Japan ODA towards Vietnam in 1999 improved its capacities and therefore TLIP became more attractive and accessible for foreign investors, especially those belonging to manufacturing industries.

This once more proves the fact that ODA for infrastructure and successful invitation to an anchor firm are 2 of the key factors to form an industrial cluster.

List of Tenants in TLIP

Entered TLIP in 2000 and 2001

No	Company Name	Date of Investment License	Nationality	Land Rental (ha)	Products
1	Parker Processing Vietnam Co., Ltd.	8-Aug-00	Japan	2.31	Paint & Surface treatment for metal parts
2	Mitsubishi Pencil Vietnam Co., Ltd.	29-Nov-00	Japan	3.8	Writing implements
3	SD Vietnam Co., Ltd.	15-Sep-03	Japan	1.65	Wire harness & power supply cord
4	Canon Vietnam Co., Ltd.	11-Apr-01	Japan	20	Ink jet printers
5	Volex Cable Assembly (Vietnam) Co., Ltd.	9-Aug-01	Singapore	0.47	Power supply cord, Interconnectors
6	Sumitomo Bakelite Vietnam Co., Ltd.	10-Aug-01	Japan	6.55	Flexible printed circuit board
7	Denso Manufacturing Vietnam Co., Ltd.	4-Oct-01	Japan	5.48	Parts for automobile
8	TOA Vietnam Co., Ltd.	5-Nov-01	Japan	1	Security camera
9	Santomas Vietnam Co., Ltd.	9-Jan-02	Malaysia	0.5	Precision plastic injection molding
10	Abe Asian Tech Hanoi Ltd.	22-Mar-02	Japan	Rental Office	Film & Manuals
11	TOTO Vietnam Co., Ltd.	1-Mar-02	Japan	7.2	Sanitary wares
12	Dragon Logistics Co., Ltd.		Vietnam	2.5	Logistic services
13	Sakurai Vietnam Ltd.	29-Apr-02	Japan	1.76	Parts of machine tools, machines, laser beam machines, semi-conductor equipment
14	Matsuo Industries Vietnam Inc.	13-Jun-02	Japan	1.26	Plastic molding parts & steel processing parts for automobile and others
15	Fujikin Vietnam Co., Ltd.	3-Jul-02	Japan	0.52	Super precision flow control systems, equipments and parts
16	Yabashi Vietnam CAD Technology Corporation	18-Jul-02	Japan	Rental Office	Designs, design processing and software products
17	Ohara Plastics Vietnam Co., Ltd.	30-Aug-02	Japan	0.98	Plastic molding products
18	Seed Vietnam Co., Ltd.	17-Sep-02	Japan	0.6	Manufacturing and sales of stationery products
19	Hanoi Steel Center Co., Ltd.	16-Sep-02	Japan	1.89	Processing steel sheets
20	TOHO Vietnam Co., Ltd.	9-Oct-02	Japan	1.36	Design and manufacturing mold for plastic products
21	Kayaba Vietnam Co., Ltd.	22-Oct-02	Japan	0.56	Manufacture and sales of parts and components of automobile, motorcycles, and others
22	HAL Vietnam Co., Ltd.	17-Nov-02	Japan	1.97	Production and sales of all types of aluminum castings, casting mole

Source: TLIP website archive

LIST OF TLIP TENANTS IN 2007

#	Company Name	Date of Investment License	Nationality	Land Rental (ha)	Products
1	<i>Parker Processing Vietnam Co., Ltd.</i>	8-Aug-00	Japan	2.31	Paint & Surface treatment for metal parts
2	<i>Mitsubishi Pencil Vietnam Co., Ltd.</i>	29-Nov-00	Japan	3.8	Writing implements
3	<i>Vina KDC Wiring Industries Ltd.</i>	15-Jan-01	Japan	0.48 (Rental factory)	Wire harness & power supply cord
4	<i>Canon Vietnam Co. Ltd</i>	11-Apr-01	Japan	20	Ink jet printers
5	<i>Voilex Cable Assembly (Vietnam) Co., Ltd.</i>	9-Aug-01	Singapore	0.47 (Rental Factory)	Power supply cord, Interconnectors
6	<i>Sumitomo Bakelite Vietnam Co., Ltd.</i>	10-Aug-01	Japan	6.55	Flexible printed circuit board
7	<i>Denso Manufacturing Vietnam Co., Ltd.</i>	4-Oct-01	Japan	5.48	Parts for automobile
8	<i>TOA Vietnam Co., Ltd.</i>	5-Nov-01	Japan	1	Security camera
9	<i>Santomas Vietnam Co., Ltd.</i>	9-Jan-02	Malaysia	0.5	Precision plastic injection molding
10	<i>Abe Asian Tech Hanoi Ltd.</i>	22-Mar-02	Japan	Rental Office	Film & Manuals
11	<i>TOTO Vietnam Co., Ltd.</i>	1-Mar-02	Japan	7.2	Sanitary wares
12	<i>Dragon Logistics Co., Ltd.</i>		Vietnam	2.5	Logistic services
13	<i>Sakurai Vietnam Ltd.</i>	29-Apr-02	Japan	1.76	Parts of machine tools, machines, laser beam machines, semiconductor equipment
14	<i>Matsuo Industries Vietnam Inc.</i>	13-Jun-02	Japan	1.26	Plastic molding parts & steel processing parts for automobile and others
15	<i>Fujikin Vietnam Co., Ltd.</i>	3-Jul-02	Japan	0.52 (Rental)	Super precision flow control systems, equipments and parts
16	<i>Yabashi Vietnam CAD Technology Corporation</i>	18-Jul-02	Japan	Rental Office	Designs, design processing and software products
17	<i>Ohara Plastics Vietnam Co., Ltd.</i>	30-Aug-02	Japan	0.98 (Rental)	Plastic molding products
18	<i>Seed Vietnam Co., Ltd.</i>	17-Sep-02	Japan	0.6 (Rental)	Manufacturing and sales of stationery products
19	<i>Hanoi Steel Center Co., Ltd.</i>	16-Sep-02	Japan	1.89	Processing steel sheets
20	<i>TOHO Vietnam Co., Ltd.</i>	9-Oct-02	Japan	1.36	Design and manufacturing mold for plastic products
21	<i>Kayaba Vietnam Co., Ltd.</i>	22-Oct-02	Japan	0.56 (Rental)	Manufacture and sales of parts and components of automobile, motorcycles, and others
22	<i>HAL Vietnam Co., Ltd.</i>	17-Nov-02	Japan	1.97	Production and sales of all types of aluminum castings, casting mole
23	<i>Matsushita Home Appliances Vietnam Co., Ltd.</i>	16-Jun-03	Japan	5 (Rental Factory)	Manufacture, assemble, install, research, design, development of products: electric home appliances, housing-related products, semi-products, components, and parts thereof.
24	<i>Kein Hing Muramoto (Vietnam) Co., Ltd.</i>	28-Aug-03	Malaysia/ Japan	1.57	Sheet metal forming, precision machining and assembly of components for electrical , electronic, automotive and other industries.
25	<i>Ryonan Electric Vietnam Co., Ltd.</i>	29-Sep-03	Japan	0.48 (Rental)	Wire harness for home appliances & electronics
26	<i>Chiyoda Integre Vietnam Co., Ltd.</i>	2-Oct-03	Japan	1.28	Stamping, printing parts & components for electric, electronic, automotive industries
27	<i>Yasufuku Vietnam Co., Ltd.</i>	9-Nov-03	Japan	0.59 (Rental)	Industrial rubber, plastic parts for automobiles
28	<i>Tokyo Micro Vietnam Co., Ltd.</i>	6-Nov-03	Japan	1.24	Micro motors for digital cameras, AV equipment, ...
29	<i>Bemac Panels Manufacturing Vietnam Co., Ltd</i>	6-Apr-04	Japan	1.24	Manufacturing and installing the electric equipments and systems for vessels.
30	<i>SATO Vietnam Co., Ltd</i>	9-Jun-04	Japan	4	Manufacture, process, assembly, sale of Electronic Printers, Hand Labellers
31	<i>Daiwa Plastic Thang Long Joint Venture Co.,Ltd</i>	5-Aug-04	Japan	1.53	Manufacturing and processing plastic parts
32	<i>HOYA Glass Disk Vietnam Ltd</i>	4-Nov-04	Netherlands	10.3	Manufacture of glass substrates for magnetic memory disk
33	<i>Suncall Technology Vietnam Co., Ltd</i>	25-Nov-04	Japan	2	Manufacturing and processing of electronics and information technology related parts
34	<i>Fujipla Engineering Vietnam Co., Ltd</i>	26-Nov-04	Japan	0.65	Manufacture of plastic Injection moldings
35	<i>Kane Package Vietnam Co., Ltd</i>	6-Dec-04	Japan	1.42	Manufacturing and processing packages
36	<i>Kyoei Diotech Vietnam Co., Ltd</i>	6-Dec-04	Japan	Rental Office	Manufacturing and Maintenance of Circuit Board Die and related Business
37	<i>IKEUCHI Vietnam Co.,Ltd</i>	30-Dec-04	Japan	0.81	Manufacturing of spray nozzles and parts thereof.
38	<i>JSW Plastics Machinery Vietnam Co., Ltd</i>	31-Dec-04	Japan	Rental Office	Maintenance service for injection molding machinery
39	<i>Yamaha Motor Parts Manufacturing Vietnam Co., Ltd</i>	4-Jan-05	Japan	10	Automotives parts
40	<i>Takara Tool & Die Hanoi Co., Ltd</i>	12-Jan-05	Japan	4	Design and manufacture of dies, processing of plastic and metal parts for various industries

Source: TLIP website

Certainly, not all tenants of TLIP are related companies of Canon, but through the nature of their businesses (products) we can speculate that they are Canon's suppliers, such as Parker Processing Vietnam Co., Ltd., Sumitomo Bakelite Vietnam Co., Ltd, etc.

And the cluster soon created jobs, increased income of the region as analyzed below.

- ***Help create more jobs for locals:***

According to Mr. Takeichi Omata – General Director of TLIP in 2004, the cluster in TLIP had created 8 thousand jobs in which 90% is of manual labor. The cluster was expected to create 30 thousand more jobs in the next few years.

- ***Nurture local supporting industries:***

Canon needs a lot of parts and components to produce printers. If Vietnam has a good master plan for developing local supporting industries in the country and the region, the demand of Canon will help local makers grow and accumulate technology know-how. We will discuss this further in Chapter 3.

- **Increase local income:**

Jobs soon bring more income for local people. And the business growth of Canon will bring tax income to the local government and they can use it to invest into local public facilities to improve living standards of the area. For Canon it is unknown but for Honda, it is said that more than 40% of tax income of Vinh Phuc province where Honda motorbike plant is located is from this firm itself.



Nothing comes for free. There is always a price for economic development and whether this price is high or not depends on how well the government handles the trade-off situation, which can be seen as a haggle. If it makes efforts to maximize benefits and minimize flaws of the economy model, then the price is low and the haggle succeeds.

Likewise, industrial clusters do not only bring economic development and all, they bring

negative effects too. Those are slums, local security deterioration and pollution.

- **Cause slums around the IZ:**

According to Hanoi Socio-economic Development Research Institute (March 2006), around TLIP there are about 350 households who own lodgings for rent and approximately 4 thousand workers are now renting these lodgings.

These so-called lodgings are actually 8-10 m²rooms with a 4 m²flat wooden board (half size of the room) used as a bed. The space left is only enough to put a bicycle and save a place to cook: there's no kitchen. It's even hard to walk inside the room. 2-4 persons share a room like this, and the rent is usually 200,000 – 300,000 VND a month (US\$ 12.5 – 18.75) while the average income of each worker who works 12 hours a day is about 900,000 – 1000,000 VND (US\$ 56.25 – 62.5). So the ratio of rent/income is about 22.22% - 30%. Workers who rent rooms like this tend to be away from home and have to send money back to their families so they have to save money. They cannot afford better accommodation.

Lodgings like this are very simply constructed, with a thin roof so it's really hot when the summer comes. Workers have to sit in front of their doors to escape the hot air inside their rooms. This is not good for their health.

The rear of lodging buildings is often filled with trash, because there is no trash dealer in the area. They have to put up with all the smell and the dirty environment.

Hanoi has set up a plan to build apartment buildings for workers in TLIP at the nearby Kim Chung village in 2000. It took 7 years for the plan to start and it is promised to open 4 new apartment buildings with the capacity of 2400 persons, and the rent is expected to be 130,000 VND (US\$ 8,125). This is not enough for all workers of the expanding TLIP but if it succeeds it will be a good model to apply nationwide.

- **Contaminate surrounding environment:**

Because most of TLIP tenants are Japanese firms, environment standards seem to be

well-complied. There has been almost no complaint about environment relating TLIP tenants around the region, but there are a lot related to workers of TLIP living in villages around the IZ.

The most typical example is that of Kim Chung commune which is home for some 7 thousand workers (by a resident of Kim Chung commune, Bau village, 2007). Everyday workers emit several tons of garbage but there is no space to dispose. Some people even bring their garbage out and throw it into some pond or lake nearby.

Wastewater from everyday life is also directly drawn into drainage system of which capacity is originally only enough for old local villagers. No wonder there is always flood all over the village every time it rains.

Rivers are therefore polluted and stinky. All residents still use underground water, and this can also be threaten since once surface water is polluted so is underground water.

Villagers are requesting Hanoi to improve infrastructure conditions of their village.

- **Deteriorate security of local community:**

Some firms in TLIP (Ohara Plastics, Machino) reported that their contracted guards gave outsiders confidential information of their firms so they can steal properties from the firms and their staff. The total loss was about US\$6400 and the police have found the thieves.

Local police also reported that there have been too many larceny cases (money, bicycles, clothes, etc) in lodging area and around the village. Drug abuse, gambling are similarly very serious problems that they have to deal with.

Chapter III Lessons from the experience of Canon Effect

From the analysis of the experience in the formation of Canon cluster in TLIP above we can extract some worthy lessons for future reference. These lessons are presented in orders that show decreasing importance and priorities. Therefore, number 1 will be the most important and has to be done first, then number 2, 3, etc and the final one to be done will be number 8. However, we *can*, and at times *should*, implement several measures at the same time, if these are required at the same level of importance. Priorities given here are only on a case-by-case basis, and can be changes to be kept in accordance with the particular conditions and requirements of each project.

As a constitution is necessary for the legislation and administration of justice in a country, a master plan for national, and master plans for regional industrial development are very crucial to form industrial clusters efficiently.

1. Master plans for regional industrial development

Canon cluster started its formation with the construction of TLIP in 1998, but we cannot tell the story of Canon Vietnam without mentioning the role of the Master Plan for (National) Industrial Development which was proposed by Mitsui Corporation with the initiative of a Vietnamese government official. Without this Master Plan, it might have been harder for the government to seek a way to attract foreign investment to nurture national industries.

We can think the same way about regional industrial development: regional industrial master plans are imperative in developing regions' industries. A master plan helps lead the way of which way to go, what to do and focus on, who to ask for support and to put in charge, etc, which ensures the efficiency of industrial development process. This is especially important to developing countries where resources are limited and scarce.

Dong Anh district in Hanoi has adopted a new plan for its industrial zone development in October 2006. The district will construct 5 more concentrated IZs to create dozens of thousands of more jobs, aiming at a 17.65% average annual industrial value index.

2. Smart and efficient usage of ODA in infrastructure building

We have learned that Japan ODA helped construct and restore a lot of roads, sea ports, power stations which were crucial factors for Canon to make up their mind on moving into TLIP.

A good infrastructure system helps companies save time and money on transport, enjoy a good and smooth low-cost business environment. Without good conditions in infrastructure, it is hard for a region to invite foreign investors, especially in terms of manufacturing industries.

In general, ODA plays an important role in facilitating the following conditions of a region:

- Infrastructure: make a list of infrastructure items of high-priorities and try to distribute ODA to these items first. Once these items are accomplished and foreign investors are investing into the region, that will bring prosperity and we will have all the resource to cover the items of lower-priorities.
- Institution: the joint project of Japanese and Vietnamese governments “Japan-Vietnam joint initiative to improve investment environment of Vietnam” was a good testimonial. ODA can be used for improving tax systems, trade regulations, the transparency and simplicity of the administrative system to ensure foreign investors a smooth process of investing in Vietnam. From now on, Vietnam should use ODA to keep improving the legislative system and create incentives and a fair playground for foreign investors.
- Education, human resources: JASSO, JICA, etc has made great efforts to enhance the quality of human resources of Vietnam. JASSO and JICA have programs to send Vietnamese young talents to Japan for undergraduate and graduate studies. To name

a few: the MEXT program which allows Vietnamese students and government officials come to Japanese universities under Monbusho scholarships; JICA also brings some non-government-official Vietnamese who already have working experience to Japan for graduate studies every year.

JICA and JBIC also help universities and schools in Vietnam with their Japanese education and educational, vocational facilities, and research institutes. Japanese speakers are needed for Japanese investment projects and with the ongoing 2nd Vietnam investment boom today, it is predicted that salary of Japanese interpreters will rise in the future.

Using ODA capital, Vietnam should open more vocational facilities, improve education quality of universities in the planned region according to its industrial development plan. ODA can hardly fill the lack of middle-class management since this can only be solved by inviting middle-class management from Japan, or sending Vietnamese staff to Japan to educate from the beginning.

- Living conditions: Japan ODA has been distributed to Bach Mai hospital in Hanoi, Cho Ray hospital in HCMC, garbage classification education program in some major cities in Vietnam, etc. Vietnam should make advantage of ODA to improve living conditions not only in big cities but also small towns and countryside regions where foreign investors might be interested in investing into.

...

3. Active overseas marketing towards foreign investors

In Vietnam, as in other developing countries, IZs are often constructed spontaneously without serious and careful research on foreign investors' needs. This lack of marketing knowledge and experience causes many failures in the IZ operating business. In fact, full IZs are almost those built around Hanoi and HCMC areas,

the rest are reported to be almost empty or have only few tenants.

Vietnam (the country as a whole and each region) should go overseas and cooperate with foreign experts to do research on investors' needs, build IZs according to their needs and Vietnam's development plans, use every network (Vietnamese embassies, city representative offices, foreign government institutes like JETRO, etc) to promote Vietnam's sales points. With China and other ASEAN countries competing, Vietnam should not stay home and wait for foreigners to come to invest. Every central government top official, MPI official, local government staff member, embassy staff member, etc must be a salesman to invite foreigner investors into Vietnam.

Concerning sales points of IZs, we can name a few:

- **Location:** the golden rule of real estate business works everywhere. Only if an IZ is located near sea ports, airports, big cities to assure low transport cost, good business/living conditions and abundant human resources, it can lure foreign investors to come.
- **Infrastructure:** in Vietnam since local developers are inexperienced and do not have enough capital, at the first stage foreign developers should join and help Vietnam to construct infrastructure in its IZs and perhaps operate them.

On the other hand, Vietnam should emphasize on its following advantages to gain foreign investors' attention:

- **Reasonable and handy labor force:** This is a known fact. A Japanese production manager in Honda Vietnam said that Vietnamese workers can do some work better than their counterparts in Japan or Thailand. It's even said that Vietnamese handcrafters can do *kimono* embroidery finer than their counterparts in Japan, and Vietnamese workers can put more chips on a print board within a limited time range than their counterparts in China. However, the salary level is rising in Vietnam in line with the raise in living expenses.

- **Low country risk:** Vietnam is relatively safe in terms of living and business environment. There are almost no racial/political/religion conflicts, terrorism, etc and unpredictable changes in foreign exchange rate.
- **Favorable geographical location:** Being located between China and other ASEAN countries, Vietnam is more likely to be picked as an investment host country in the region.
- **Investment incentives:** As analyzed in Chapter 2, Vietnam has many tax and institution incentives to attract foreign investment such as CIT rates, tax holiday and remittance tax, compared to other neighboring countries.
- **Free trade commitments:** Vietnam-US Bilateral Trade Agreement is a huge possibility for US market penetration. AFTA might as well facilitate regional division of labor. Vietnam's WTO affiliation also brings promises of policy consistence and international rule compliance to the country's business environment.

"JETRO Hanoi Center Survey: Why Canon made its decision and moved in TLIP?"

In February 2007, author made a visit to JETRO Hanoi Center to interview Mr. Arakawa Ken, an investment advisor there, on Vietnam's invest environment and the motivation of Canon upon its decision of investing in TLIP.

Arakawa Ken Profile

MA, Vietnam History Major. After graduation, in charge of Vietnamese market at a trading company, visited Vietnam 50 times. From 1994 in charge of ODA in Hanoi. From 2000 manager of Hanoi Seiyu Supermarket, etc.

Survey Outcome

⌘ **Vietnam's Investment Environment (compared to neighboring countries):**

Vietnam has advantages in water, power supply, transport, one-door services, de-regulation, **tax incentives**, unskilled labor, and **country risk**. But Vietnam has disadvantages in **telecommunication, law and regulations, middle/high-class management and**

professionals.

⌘ **Why Canon chose TLIP:**

- Location (near No 5 national road and Hai Phong port, convenient for logistics)
- Tax incentives
- Cheap labor
- Low country risk
- China risk hedge

4. Workers' life support measures

Beside accommodation issue mentioned above, workers at IZs also face many other problems with their everyday life for instance: health care, entertainment and security, etc.

Here is a proposal for some measures to help workers deal with problems that might arise in their lives at IZs.

- Local government should build enough apartments or dorms for workers of each IZ.
Rooms can be shared among 2 – 4 people, wider than 15 square meters,
- Establish in each IZ a consult/community center, to help workers solve problems they face in everyday life. Most workers are from the countryside, come to town to seek for jobs. In Vietnam there is a big gap between rural and urban lifestyles so they may need instructions. Centers of this kind also help to teach workers how to comply with local rules (environment protection, etc), organize some clubs (English, Japanese, cooking, dating, etc) for workers to join and spend their weekend time meaningfully, and offer some extra services such as TV, video, etc (most workers don't have a TV in their rooms and thus they are isolated from the outside fast changing dynamic world).
- Increase the number of policemen in the community and enhance people's awareness to prevent thieves and robberies.

5. Environment protection measures

In Vietnam there is a big gap of lifestyle between rural and urban regions and environment awareness of people is not high. Most workers tend to come from rural areas where education level and environment awareness level are of the lowest in the country. As a result, workers tend to throw garbage somewhere in their residence area without thinking about protecting living environment. It gets even worse when there is no trash dealer in the area, which can be explained by the fast proliferation of population and the weak community capacity to deal with the problem.

There are some measures against this issue:

- Have commune/village/town leader and representatives come to each household to persuade and educate workers and local people of environment protection responsibility.
- Contract with a trash dealer and collect a small sum of money from each household to pay this dealer.
- Weekend voluntary community cleaner program: workers and some other local residents may be free during weekend and it's a good chance for them to meet, get to know each other while doing something meaningful for the community.

6. Local supporting industry development plan

As of 2003, localization ratio of Japanese makers in Vietnam was 22.6%, very low compared to higher than 44% in Malaysia and Thailand. Vietnam's supporting industry is weak and underdeveloped (GRIPS report). In the case of Canon, there is no local parts supplier to be known of.

Vietnam has a Master Plan for Supporting Industries Development but it is advised that Vietnam has a plan for each supporting industry. Without strong supporting industries, it cannot achieve sustainable, independent and stable development. These are some measures to develop supporting industries in the country:

Promote industrial human resources: Vietnam should establish more modern training

centers, apply meister system, conduct curriculum reform at industrial universities & colleges, overseas education & training, form incentives for brain return, etc.

Promote supporting industries: Vietnam should work on SME promotion (HRD, technology, finance), invite FDI parts makers, form industrial standards, quality standards, adopt local-FDI matching services, promote SME networking, conduct trade fairs & reverse trade fairs, construct database relating supporting industries, take advantage of JETRO services.

These measures are well known and have been highly efficient for a long time in ASEAN.

However the real question is not *what* to do, but *how effectively* you do it.

Conclusions

The flowchart approach to industrial cluster policy is an action plan for arranging and prioritizing policy measures in a time-ordered series. This paper dared to make a review on this flowchart approach by Kuchiki and then make a further step to apply the model to Hanoi's Canon printer cluster from 2001 to 2007.

We can obtain the following conclusions and these are also my contribution to Kuchiki's flowchart approach model:

- Firstly, I examined both negative and positive effects of Canon on its agglomeration in Hanoi. From this result, we can know how to increase or maximize positive effects while controlling negative ones.
- Secondly, it is assuredly confirmed that the flowchart approach model works in the case of Canon as well. Knowing this we can think of ways to apply this model to more clusters in other regions in Vietnam.
- Finally, it is clearly realized that ODA and local governments play crucial roles in the success of industrial cluster policy. Also, in the case of Vietnam a national master plan for industrial development was necessary, and from now on various master plans for respective supporting industries are highly in need. Yet without the big boss' okay local governments can do nothing to help foreign investors. It is apparent that the collaboration and harmony between central and local governments are imperative.

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