

Development of Supporting Industries for Vietnam's Industrialization

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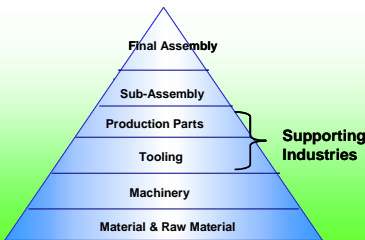
National Graduate Institute for Policy Studies (GRIPS)
 Vietnam Development Forum (VDF)
 Date: April 15 2006 14:00 – 17:00
 Venue: GRIPS Lecture Room G (5th floor)

Today's Menu

- I. What is supporting industries?
- II. Why is the development of supporting industries necessary for FDI-driven economic growth?
- III. What impede the development of supporting industries in Vietnam?
- IV. How can Vietnam overcome those obstacles?

I . What is Supporting Industry?

1. In economic theory, supporting industries are defined as a group of industries to supply **"manufactured" inputs**, which are mostly intermediate goods.
2. In framework of business, supporting industries manufacture **production parts** as well as **tooling** to produce those production parts.



I . What is Supporting Industry? (Cont.)

"Supporting industries produce something which looks easy, but needs high-quality engineering skills."

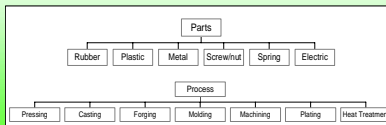
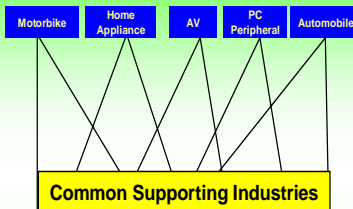
I . What is Supporting Industry? (Cont.)

3. Who are supporting industries?

- Local supplier
- FDI Supplier

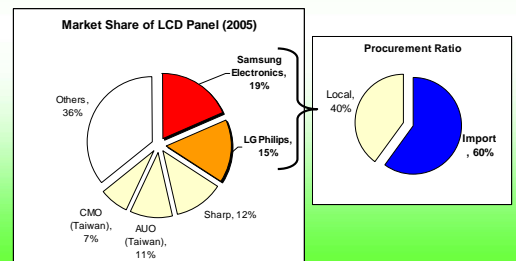
4. Characteristics

- Capital-intensive industry
- Cover broad range of industries
 - e.g. Plastic parts, metal parts



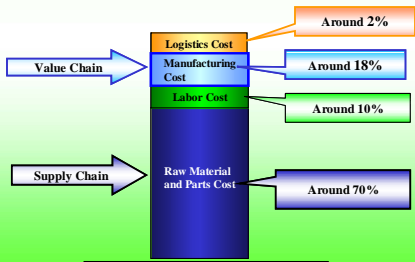
Why are Supporting Industries Important?

- ◆ Supporting industries are the primary sources of industrial competitiveness.
 - Japan's manufacturing sector is still competitive, because of high-level supporting industries.
 - Korea have large market share in LCD Panel, but most of core parts are imported from Japan.



Supporting Industries Enhance Cost Competitiveness

- Growth of supporting industries will allow assemblers to reduce production costs.
 - Parts costs account for 70% of product cost, while labor costs account for only 10%.



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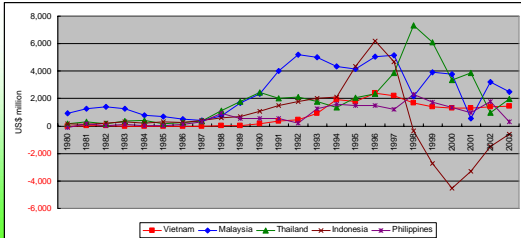
TOYOTA's Value Innovation (VI) Project

- Targeting 15% cost reduction of parts and material
 - Parts costs account for 60% of the whole product cost. So, this project aim to reduce 9% of the product cost.
 - It is almost impossible to achieve 9% cost reduction through cutting labor cost.
- The CCC21 project as "modular" cost reduction
 - It reduced 30% of parts costs in one car.
 - However, "by-parts" cost reduction reached the limit.
- VI project as "integral" cost reduction
 - Move the revaluation of product cost from designing stage to planning stage.
 - "System-by-system" cost reduction
 - Cost reduction is examined in a group of engine parts.
 - Find optimal combination of parts, cutting unnecessary parts.

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II. What is the Role of Supporting Industries in FDI-Driven Economic Growth?

- Many developing countries have tried to attract FDI, for the economic growth.
 - 103 countries offered tax concessions to foreign companies that set up production or administrative facilities.
 - In particular, ASEAN countries succeeded to attract massive volume of FDI since the middle of 1980s.



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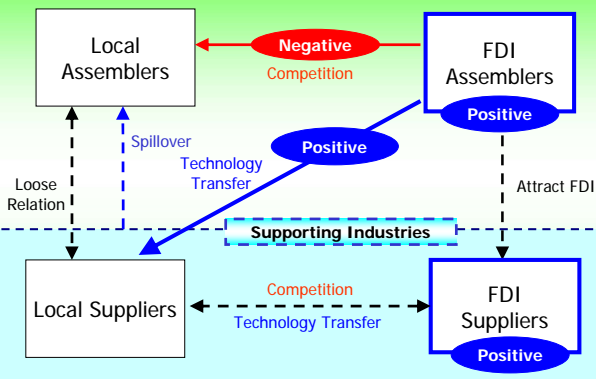
II. What is the Role of Supporting Industries in FDI-Driven Economic Growth? (Cont.)

- Source of productivity growth by FDI
 - Productivity growth within FDI firms
 - MNCs tend to have higher productivity than local firms.
 - Externalities (or Spillover effects) on local firms
 - Assemblers and suppliers

What is the net effect on the productivity growth?

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FDI's Impacts on the Productivity Growth



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II. What is the Role of Supporting Industries in FDI-Driven Economic Growth? (Cont.)

- Net externality effects of FDI are ambiguous!
 - FDI's positive vertical externalities
 - Domestic supporting industries would increase output and productivity through the business with MNC assemblers (backward linkage). Refer to an empirical study by Alfaro and Rodriquez-Clare (2003) on firms in Latin America.
 - FDI's negative horizontal externalities
 - Domestic assemblers may decrease output and productivity, after MNC assemblers enter the market (in short-run).
 - Net externality effects of FDI are ambiguous
 - Depend on the size of the above two externalities.

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II. What is the Role of Supporting Industries in FDI-Driven Economic Growth? (Cont.)

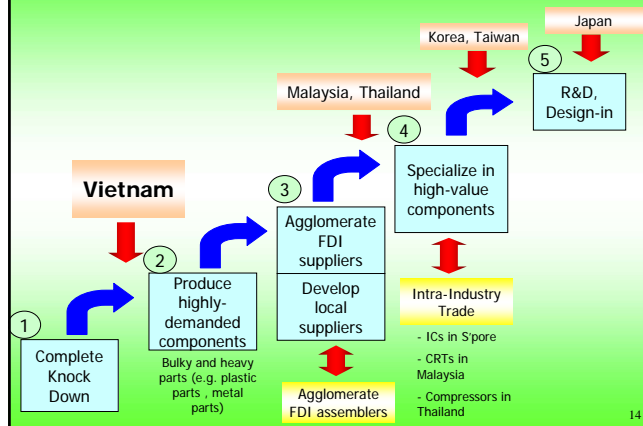
4. Development of supporting industries will make the net effects positive.

- Positive externalities consists of productivity growth in domestic supporting industries.
- If domestic supporting industries are sufficiently competitive to expand business with MNCs and absorb their technology, the net impact of FDI will become positive.
- On the other hand, if MNC assemblers import 100% of production parts, the vertical externalities may be zero or negative.

(Note: However, it should be also ineffective to force MNC to source 100% of parts locally.)

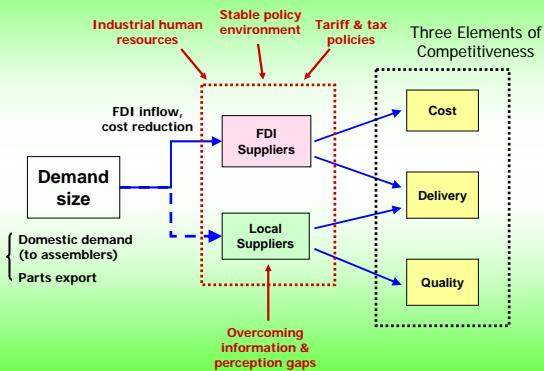
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5 Steps for Developing Supporting Industries



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Key Factors to Achieve Agglomeration and Competitiveness in Parts Industries



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III. Obstacles to Development of Supporting Industries in Vietnam

1. Limited demand size

- Focus on consumer-electronics sector

2. Shortage of high-level industrial human resources

- High import duty on parts and raw material
- Information and perception gaps
- Unstable policy environment

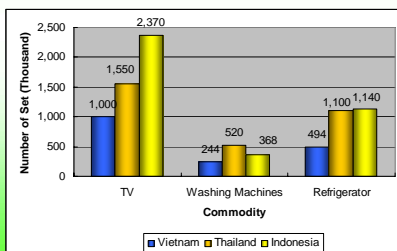
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Limited Demand for Production Parts

1. The domestic market for consumer electronics goods is growing in Vietnam

- The output value grew at the rate of 18% from 2002 to 2003.
- Vietnam has the third largest domestic market of home appliance products, next to Indonesia and Thailand.

Domestic Sales of Main Consumer-Electronics Goods (2003)

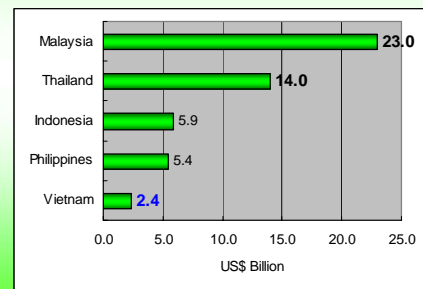


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Limited Demand for Production Parts (Cont.)

2. However, the total output is much smaller than other ASEAN countries

Output Values of Consumer-Electronics Industries in ASEAN Countries (2003)

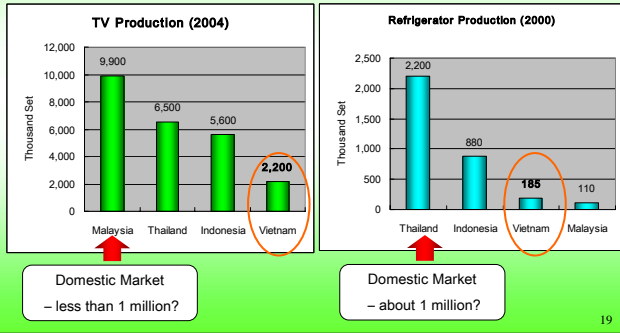


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Limited Demand for Production Parts (Cont.)

3. This is mainly due to Vietnam's small size export.

- 83% of total output in the consumer-electronics sector was sold in the domestic market.

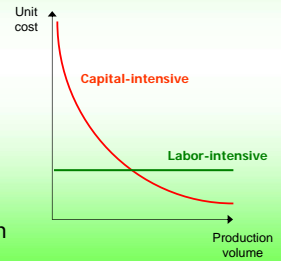


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Limited Demand for Production Parts (Cont.)

4. The smaller the demand size is, the fewer parts supplier can enter the market.

- Especially for FDI suppliers
- Generally, supporting industries are more capital-intensive than final assembly
- Large investment in equipment (indivisibility)
- Unit cost declines inversely with production volume



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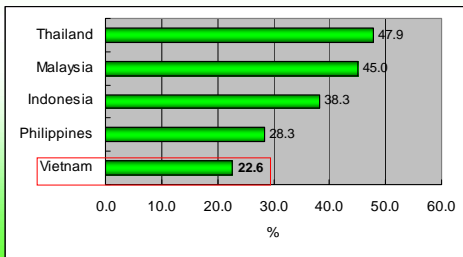
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Limited Demand for Production Parts (Cont.)

5. FDI assemblers want to increase local procurement, but they cannot achieve that.

- Demands for local procurement are there. For example, 72.9% of Japanese manufacturers intend to increase local procurement.

Japanese Manufacturers' local procurement ratios in ASEAN Countries
(The average of all industries)



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IV. The Ways to Overcome Limited Demand

1. Assembler-side solution

- Promote the healthy growth of domestic market
- Attract more export-oriented FDI assemblers - "indirect" parts export

2. Supplier-side solution

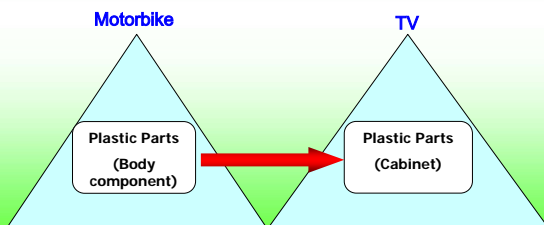
- Increase "direct" parts export
- Supply parts across more than one sector
- Expand the covering processes

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Supplying Parts More than One Sector

1. "Horizontal" business expansion

- This means increasing the variety of commodities across sectors.
- For example, plastic parts are used for both motorbike and TV.



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Supplying Parts More than One Sector (Cont.)

2. One plastic injection molding machine can be used for producing both electronics parts and motorbike parts.

- Showpla (Motorbike, TV, Daily Commodity)
- Daiwa Thang Long (Motorbike, Printer)
- Cat Thai (Washing Machine, Daily Commodity)

Range of Plastic Injection Machines by Product

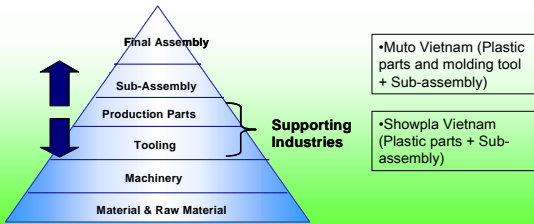
| Product | Parts | 0-500t | 501-1,000t | 1,001-1,500t |
|------------------|-------------------|----------|-------------|--------------|
| Motorbike | Exterior Parts | 80-850t | | |
| TV | Cabinet | | 850 -1,300t | |
| Washing Machines | Cover, Water Tank | | 550-1,300t | |
| Refrigerator | Interior Parts | 150-550t | | |

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Expanding the Covering Processes

2. "Vertical Business Expansion"

- This means enlarging specialized processes. Parts suppliers will increase value-added activities.
- One way is to add production or designing of molding tools to the parts manufacturing operation (**Downward expansion**).
- Another way is to step into sub-assembly process, which is a labor-intensive process (**Upward expansion**).
- E.g. Assembling speaker to TV cabinet, painting, and printing.

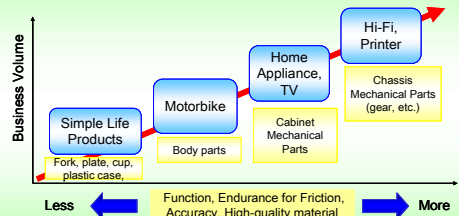


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High-quality Industrial Human Resources are Needed!!

1. Technology should be upgraded

- Electronics parts require better appearance and higher accuracy than motorbike parts.



2. "Meisters", high-level engineers, are needed

"Highly-skilled workers are required, rather than new machines. If we have high quality engineers, even second-hand machines are acceptable"
– a local plastic parts supplier.

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Who are "Meisters"?

1. Meisters pursue "100%" (perfection)

"Product quality should be always guaranteed 100%. 99% is not enough. This one percent explains the difference between FDI suppliers and local suppliers"
– a Japanese expert.

2. "Modular-type" Meisters

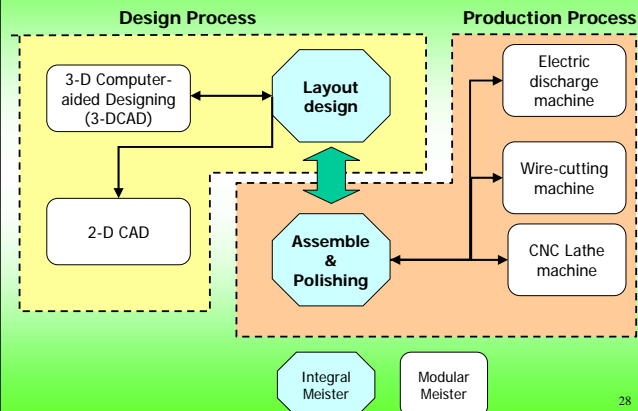
- Specialized in a certain skill
- Very skilled machine operator who can repair, adjust, improve, and teach

3. "Integral-type" Meisters

- Specialized in a certain process
- Coordinator who can manage & improve the whole process, not just one skill.

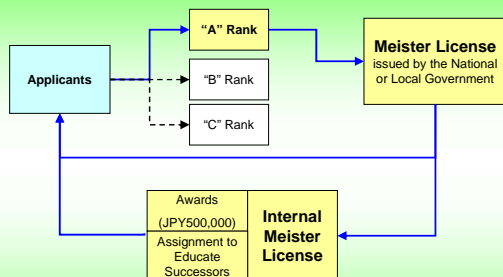
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Case of Molding Tool Manufacturing



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Canon's "Meister" System in Japan



There are

- Meister Systems at central or local government levels
- Meister Systems within individual companies

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Promote Collaborative Training Program

1. Both MNCs and domestic firms participate

- In contrast, conventional vocational training programs in developing countries tend to focus on educating domestic firms only.

2. Promote technology transfer

- MNCs' employees are participants or instructors.
- Provide opportunities to access various resources for domestic firms, which are not capable of obtaining business contracts with MNCs.

3. Reduce information and perception gaps

- MNC assemblers and domestic suppliers will meet each other.
- Domestic assemblers will have chance to understand MNCs' cost, quality and delivery requirement in classes or through information exchange.

4. Concerns

- MNCs' employees will also benefit from the training.
- It may be difficult to use ODA for this kind of project.

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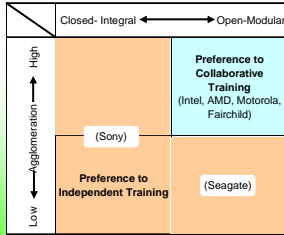
Case of Collaborative Training Program

■ Penang Skill Development Center (PSDC) in Malaysia

- PSDC was established and managed under MNCs' active leadership as a vocational training program.
- The Global Suppliers Program promotes information exchange between MNCs and domestic suppliers.

◇ Conditions of PSDC's success

- Great agglomeration of semiconductor industry, which raised the demand for skilled labor.
- Semiconductor is an open-modular type product
 - which means that the interfaces of production processes are standardized.



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Positive Signs for Collaborative Training in Vietnam

1. Rising demand for labor

- Many MNCs are expanding the investment in Vietnam.
- Job hopping is becoming a serious problem in some places.
- Middle-class managers or engineers tend to be "pinched off."
- Some MNCs expressed their interest in cooperating with vocational training schools.

2. Increasing demand for local procurement

- MNCs hope to increase the business with domestic supplier for further cost reduction.
- One motorbike assembler said, "if the government can provide the basic training such as 5S, we can support them to be our parts suppliers."

3. Potential demand for subcontracting

- Some foreign molding tool manufacturers want their factories in Vietnam to be a manufacturing base as well as design center.
- Some of them are also interested in increasing sub-contracting a part of process, in order to reduce their fixed costs.

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Thanks for listening

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