Promoting the globally successful SMEs for Inclusive & sustained Growth:

Firms Strategies and Public Policies

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Korean Growth regimes:
imbalanced, or exclusive, growth, not inclusive growth

Leading, strong
Big Business (chaebols)
Government
Export-oriented Bus.
Manufacturing
Outward FDI

following; weak
SMEs
Civilians
Domestic-oriented
Services
Inward FDI

-> It worked fine (rapid catch-up) until the 1997 Asian crisis;
then we had globalization and significant opening
-> increasing polarization and inequality
TFP catch-up of Korean firms with Japanese firms

Note: Note TFP level of all Japanese listed firms in each year is set to be 100. The difference a=% gap of TFP between two countries.

Rapid catch-up (about 30%)
Sustained Gap (about 10%)
Convergence in IT: Samsung vs. Matsushita

Sam. Elect.: OVER
While Industry: JUST
But, increasing Polarization since 2000: TFP level by firm size
economy: Shared, inclusive, growth

1) Presidential Commission on Shared growth
   headed by the former PM

2) Designated the business items exclusively for the SMEs

3) Performance sharing schemes between the Big final assembler and small suppliers:
   eg) on fair procurement pricing and cash payments on delivery, rather than by 3 month checks
How to bring up globally successful SMEs

1. Strategic Fundamentals of Catching-up:
   = Innovation Capability and Path Creation

2. Strategy to overcome Challenges in the Course of Catching-up

3. Sustainable Positioning of Post-Catching up

4. Understanding Sectoral Differences in Catching-up

5. Role of Government and Policy Implications
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<td>Dishware</td>
<td>Hankook Chinaware &amp; Lock&amp;Lock</td>
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<td>Musical Instruments</td>
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Korean Firms’ Market Shares in US Car Markets
What happened in Hyundai during late 80s & early 90s

Source: The automobile Association of Korea,
Trends of Sales by Aurora World
with 1992 the year of own brand marketing
showing “U” shaped OEM trap over 1991-97
(unit: million Won)
Criteria to be a Success: consumer vs. producer goods

1) Consumer, final, goods firms:
   a OBM firm (Own-brand manufacturing, eg, NIKE)

   cf) OEM – ODM -> OBM

   Own-equipment -> own design -> own brand

2) Producer, intermediate, goods firms:

   supplier to multiple number of client firms, including overseas

   cf) startups      -> exclusive, dependent, supplier to a single big business

   -> independent supplier to multi-clients
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<td>Upgrading by successive Entries into new industries</td>
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<td><strong>Upgrading</strong></td>
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<td>Upgrading into the higher value-added in the same industry</td>
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<td><strong>Government</strong></td>
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<tr>
<td>Market protection / R&amp;D consortium</td>
<td>Little involvement</td>
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<td><strong>Challenges</strong></td>
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<td>Synergy among affiliates</td>
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<td><strong>Risks</strong></td>
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<td>Choosing right technology/standards</td>
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<td><strong>Position</strong></td>
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<td>Product Innovation based on broad knowledge basis (Technological diversification/ integration)</td>
<td>Firm-specific, often trial-and-error based knowledge in a narrow field</td>
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What do you need to stage a successful and sustainable Catching-up?
Three Patterns of Catch-up (Lee & Lim 2001: Research Policy)

Path of the Forerunner
stage A --> stage B --> stage C --> stage D

Path-Following Catch-up
stage A --> stage B --> stage C --> stage D
   eg. PC, some consumer goods, and Machine Tools

Stage-skipping Catch-up (leapfrogging I):
stage A ----------> stage C --> stage D
   eg. Hyundai's fuel-injection engine development (cf. carburetor engine)
      Samsung' 64 K D-Ram production tech.; 256 K D-ram design technology

Path-Creating Catch-up (leapfrogging II)
stage A --> stage B --> stage C' --> stage D'
   eg. CDMA development, digital TV (C and C', alternative technologies)
1. Path Creating = Common Success factor

- The cases show that successful catch-up tend to involve the element of path-creating, namely the late-comer picking up their path different from their forerunners.

*Shimro Musical Instruments* (custom-made technology + mass production technology),

*Cuckoo* (electric cooker + gas-pressure cooker = electric and gas cooker),

*HJC Helmet*: ABS copolymer + PC plastics = new plastics that stroke a critical balance between hardness and shock absorbing resilience

*Amore Pacific* (newly internally-developed oriental herbal cosmetics rather than copying the existing cosmetic products originating from the west)

1) **If target technology is “more” new: Learning from external sources becomes crucial.**

*Shimro Musical Instruments* (German artisans), *NHN* (M&A)

*Hankook Chinaware* (*Royal Doulton Group*: bone-China technology, silver nano-technology: establishment of a joint venture with *Miji* Tech.),

2) **If target technology is more related to one’s prior knowledge bases:**

   Application of tacit (internally developed) knowledge to new product development is essential elements for successful catching-up.

   : *HJC Helmet*, *Lock & Lock*, *Aurora World*
To create a path, you need Innovation Capability

- **Necessary Factors for Successful Catch-up: Innovation Capability (developing new products or processes):**

  *Aurora World, Jusung Engineering and Sunstar, Samsung Electronics’ catching-up*

- **Acquiring innovation capability → learning process**

  - Relevant “teachers”: foreign firms, universities, or public research institutes
  - Effective access to foreign technology: subcontracting (OEM), joint production, licensing, equity-based alliances, or joint R&D
  - Continuous in-house trial and error: in-house R&D

  → Acquiring capability of developing differentiated products: tacit knowledge based on one’s own experiences accumulated over time

  → Combining external explicit knowledge (lowers learner’s risks and is more efficient) and internal tacit knowledge is better
2. More Challenges in the Course of Catching-up

- Developing Independent Marketing Skills

The next task for firms who can conduct product development on their own capacity is to make good sales performance.

1) Knocking at emerging markets earlier than entering advanced economies (Sunstar),
2) Adopting the sales-on-credit strategy (Sunstar).
3) If a firm expands to an advanced economy as a stand-alone, hiring several marketing experts from the host country is an essential tip (Aurora World).
4) Adopting the latest marketing technique that no forerunner explored:

   *Lock & Lock* (home shopping), *Missha* (internet)
2. challenges: Counter-attack from the Incumbent

- Counter-attack from the incumbent firms

1) Cancelling orders (Aurora World)

2) Intellectual property rights litigation: Aurora World, Jusung Engineering, Sunstar

3) Price-cut or dumping: Jusung Engineering, Sunstar

Preparing for these counter-attacks:

Aurora World (got insured for manufacturing goods liability, registered as a new name for the subsidiary),

Cuckoo (did not disclose in public any plan for new product development; conduct R&D during nights)

Final winning in law suit: Jusung, Sunstar; be prepared for this
Sales & Share of OBM-based Sales in Aurora World

Aurora World

Beginning of OBM

KRW (mil.)


Sales OBM

%
<Stages in Dynamics of Catch-up by SMEs>

- Entry
  - entry
  - OEM
  - low value-added

- Gradual Catch-up
  - learning / upgrading
  - ODM/OEM
  - medium value-added

- Path-creating / Crisis

- Rapid Catch-up
  - sales stagnation

- Post Catch-up
  - sales spurt
  - post catch-up positioning

- diversified business group

Path creation begins

Path creation

Post catch-up

- path following
3. Sustainable Positioning of Post-Catching up

- Continuous innovation and tacit-knowledge accumulation

- In addition to continuous innovation and learning, firms may want to build their own entry barriers to strengthen their post-catching up positions.

: Case study shows that late-comer SMEs frequently fail to sustain their positions once achieving catching-up, and fall behind again. – *Missha vs. The Face Shop*

: Post-catchup entry barriers = firm-specific proprietary (often tacit) knowledge

*Cuckoo*: Consumed 4,000 tons of rice in order to find an optimal pressure for rice-cooking

*Shimro Musical Instruments*: After a long struggle, finally developed new urethane mould that overcomes weaknesses of both wooden and iron moulds

*Lock & Lock*: Experimented innumerably to find a new plastic glassware cap that satisfies pliability, hardness, and durability.

-For small and medium-sized firms, entering tacit knowledge-based industries is more less risky, and practically more feasible than entering high technology-oriented industries. It is realized by trials-and-errors rather than by creating frontier technologies requiring costly scientific experiments; not easy to be copied by others.
3. Post-Catching up: Globalization

- Conduct R&D in home country and operate overseas subsidiaries for production and distribution, and thus enhance price competitiveness as an entry barrier by going global.

  : Aurora World: established factories in both Indonesia and China -> Flexibly re-allocated production volume from China to Indonesia

- Develop and produce high-end products in advanced economies.

  : Shimro Musical Instruments (has a factory in Germany) produces Saint Antonio (a low-end violin product) in China and sells in the local market; produces Karl Heinlich (a high-end violin brand) in Germany and supplies it to the local market; and produces the original medium-end violin product in Korea.

- Adopt different marketing strategies in emerging markets vis-à-vis in advanced economies.

  : Amore Pacific (Highlighted country-of-origin as a selling point in emerging markets; but concealing Korean nationality in Europe),

  Aurora World (Does not promote local sales in China),

  Lock & Lock (All products manufactured in China are exported to the United States, but imports from Korea for the China market)
Post-Catching up: Corporate-Images, Brand power, standards/Spec

1) Branding: Tacit knowledge to be protected either by patent or more often by trade secrets, and eventually be the basis for brand power.

   ex) Aurora World, Lock & Lock, Hankook Chinaware, Shimro Musical Instruments

2) Corporate image constitutes entry barriers

   - Amore Pacific (upgraded its oriental herbal cosmetics to the premium market after refinement of its image), The face shop (naturalism)

3) Safety standards or quality standards as a powerful sources for entry barriers against others

   – Shimro Musical Instruments (Violin: specification of Stradivari)

   Cuckoo (safety against explosion), HJC Helmet (helmets: snack standard)
4. Niches for the SMEs? And How to sustain them

- Besides continuous innovation and learning, firms need to sustain their positions.

- Industries with high-entry barriers consist largely of two types: (a) high science or technology-oriented or (b) experience or tacit knowledge-based industries.

- The high-tech industries require the acquisition of expensive human resources or research labs, -> good for big businesses

- Given the financial constraints faced by SMEs, entering (b)-type industries seems less risky

- Practically more feasible for SMEs to develop proprietary knowledge from experiencing trial-and-error rather

  - Field expertise, once acquired, becomes a formidable entry barrier that others cannot easily replicate.

  -> close to traditional tech. knowledge that Rosenberg (1982) defines as knowledge accumulated in crude empirical ways with no reliance on science.
4. Niches for the SMEs? And How to sustain them (2)

Importance of tacit knowledge generated by a process of trial-and-error (experience), although it might be codifiable in an *ex post* sense.

Koskinen and Vanharanta (2002): smaller firms have advantages in tacit-knowledge-intensive business because its dissemination is easier within smaller firms with shorter lines of interaction and less intra-firm divisions.

In this way, new tacit knowledge not only constitutes core technology, but also contributes to firm idiosyncrasies.

The degree of tacitness of knowledge differs across technological sectors;

...a higher degree of tacitness interferes with the learning of latecomers, as proven by an econometric study (Jung and Lee, 2010) that measured the explicitness (inverse of tacitness) of sectors in terms of average patent to R&D ratios of the sectors.
## Inverse Tacitness of Knowledge at the Sectoral Level

<table>
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<tr>
<th>Industry</th>
<th>Patent/R&amp;D</th>
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<tbody>
<tr>
<td>Manufacture of electrical machinery and equipment</td>
<td>9.043</td>
</tr>
<tr>
<td>Electronic parts, computers, audio/video equipment; telecomm. equipment</td>
<td>2.961</td>
</tr>
<tr>
<td>Manufacture and processing of ferrous metals</td>
<td>2.818</td>
</tr>
<tr>
<td>Chemical materials and chemical products, excluding medicines</td>
<td>2.388</td>
</tr>
<tr>
<td>Manufacture of vehicle and trucks</td>
<td>2.064</td>
</tr>
<tr>
<td>Manufacture of rubber and plastic products</td>
<td>1.523</td>
</tr>
<tr>
<td>Manufacture of other machinery</td>
<td>1.383</td>
</tr>
<tr>
<td>Manufacture of foods and beverage</td>
<td>1.273</td>
</tr>
<tr>
<td>Medical equipment, fine machinery, optical instrument, and clocks</td>
<td>1.054</td>
</tr>
<tr>
<td>Manufacture of furniture</td>
<td>0.952</td>
</tr>
<tr>
<td>Non-ferrous metals, excluding machinery and metallic furniture</td>
<td>0.891</td>
</tr>
<tr>
<td>Manufacture of pulp, paper, and paper products</td>
<td>0.831</td>
</tr>
<tr>
<td>Manufacture of non-metallic mineral products</td>
<td>0.814</td>
</tr>
<tr>
<td>Manufacture of other transportation equipment</td>
<td>0.709</td>
</tr>
<tr>
<td>Manufacture of tobacco</td>
<td>0.634</td>
</tr>
<tr>
<td>Manufacture of textile goods, excluding apparel</td>
<td>0.561</td>
</tr>
<tr>
<td>Manufacture of medical materials and medicines</td>
<td>0.435</td>
</tr>
<tr>
<td>Manufacture of leather, leather goods, and footwear</td>
<td>0.023</td>
</tr>
<tr>
<td>Manufacture of apparel and accessories, and fur products</td>
<td>0.129</td>
</tr>
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5. Role of Government and Policy Implications

- Justification for intervention: only when foreign firms systematically stay in the way of the domestic firms with their market power, government tries to protect the domestic firms.

- However, industrial policies designed to nurture late entrants (or small and medium-sized firms) should consider sectoral differences.

: The dynamics that small and medium-sized firms become transformed into the category killers (innovators) requires conversion of tacit knowledge into proprietary knowledge, which involves learning-by-doing based on trials and errors.

-> An efficient industrial policy should help such firms develop tacit knowledge.

⇒ Government: subsidize trial & error – intensive R&D for tacit-knowledge based sectors and SMEs in such industries, rather than randomly funding whatever R&D projects.

⇒ As knowledge of a later entrant becomes more tacit and proprietary, the firm is more likely to survive from competition against lower-wage countries (such as China) or from threats imposed by the forerunners.
5. Role of Government (2): help in IPRs Dispute

1) A direct sharing of costs of legal IPR disputes by the SMEs:
   
   eg) Selling commercial insurance against possible IPR lawsuits where the government pays 70% or more of the insurance premium with the maximum amount set for a company.

2) Service to conduct pre-marketing/exporting investigation of possibility of legal disputes when the SMEs plan to go for exporting to some countries.

3) Ex-post measure included the package consulting for the SMEs who faced the IPR lawsuits with foreign entities;

   -- in 2009, 42 SMEs resorted to this service and got the help in the forms of analysis of legal documents and involved patents, exploring solutions such as licensing, patent pools, countervailing patents, counter claims, and going through with the legal processes.

4) A public-private consortium fund, the so-called “patent angel,” was created to purchase, manage, license, and sell various types of IPRs and help the SMEs;
   
   -- SMEs joined this fund either as a fee-based membership or as a equity holder;
   -- a patent umbrella for the SMEs exposed to the possible claims by the patent trolls.
Meu Amigo!
Obrigado!

Thank you!!