Order of Presentation

- Network Capabilities for Competitive Advantage
- Why Korea and Japan?
- Korea: Rapid Catch Up!
- Japan: Technological Advantage!
- Updates
- Summary of Book Volume I and II
Network Capabilities for Competitive Advantage
Key Research Question:

How do Asian global firms accomplish rapid catch-up with the leading firms of North America and Europe and establish their global competitive advantage?
"The first Asian economic miracle was Japan’s after World War II, rooted in the changes of the Meiji restoration ... The Asian Tigers ... began to emerge from 1960 onward ...” Luis Alberto Moreno, 2006
# Global Fortune 500 Companies

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>United States</td>
<td>133</td>
</tr>
<tr>
<td>2</td>
<td>Japan</td>
<td>68</td>
</tr>
<tr>
<td>3</td>
<td>China</td>
<td>61</td>
</tr>
<tr>
<td>4</td>
<td>France</td>
<td>35</td>
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<tr>
<td>5</td>
<td>Germany</td>
<td>34</td>
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<tr>
<td>6</td>
<td>United Kingdom</td>
<td>30</td>
</tr>
<tr>
<td>7</td>
<td>Switzerland</td>
<td>15</td>
</tr>
<tr>
<td>8</td>
<td>South Korea</td>
<td>14</td>
</tr>
<tr>
<td>9</td>
<td>Netherlands</td>
<td>12</td>
</tr>
<tr>
<td>10</td>
<td>Canada</td>
<td>11</td>
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<tr>
<td>11</td>
<td>Italy</td>
<td>10</td>
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</table>
## Global Fortune 500 Companies

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>United States</td>
<td>179</td>
<td>176</td>
<td>133</td>
</tr>
<tr>
<td>Japan</td>
<td>107</td>
<td>81</td>
<td>68</td>
</tr>
<tr>
<td>China</td>
<td>10</td>
<td>16</td>
<td>61</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>38</td>
<td>35</td>
<td>30</td>
</tr>
<tr>
<td>Germany</td>
<td>37</td>
<td>37</td>
<td>34</td>
</tr>
<tr>
<td>France</td>
<td>37</td>
<td>39</td>
<td>35</td>
</tr>
<tr>
<td>South Korea</td>
<td>10</td>
<td>11</td>
<td>14</td>
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<tr>
<td>Switzerland</td>
<td>11</td>
<td>11</td>
<td>15</td>
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<tr>
<td>Italy</td>
<td>10</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Netherlands</td>
<td>10</td>
<td>14</td>
<td>12</td>
</tr>
</tbody>
</table>
Global Fortune 500 by Regions (2011)

- North America (147)
- Asia (163)
- European Union
- Others (42)
Global Firms grow out of the rich soil of network capabilities.
Network Capabilities

Socio-technological collaborative infrastructures that achieve shared goals of competitive advantage.

Korea and Japan provides fine examples of building network capabilities
Horizontal Network

Supply chain network structure

Tier 3 to initial suppliers
Tier 2 suppliers
Tier 1 suppliers
Tier 1 Customers
Tier 2 Customers
Tier 3 to Consumers/End-Customers

Initial Suppliers
Tier 3 to n suppliers
1
2
n
1
n
1
2
n
1
2
n
1
n
1
n
1
2
n
n
Focal Company
Five Levels of Industrial Systems: from factory to national and international industrial systems  
By Yongjiang Shi, Cambridge University, 2012
[2] Why Korea and Japan?

For Illustration Purpose
Korea and Japan
<table>
<thead>
<tr>
<th></th>
<th>Korea</th>
<th>Japan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population (2011)</strong></td>
<td>South 49.0 Millions (2011)</td>
<td>126.2 Millions (2011)</td>
</tr>
<tr>
<td></td>
<td>North: 24.4 Millions (2010)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>US $ 40 billions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>US $1,900 (2009, North)</td>
<td></td>
</tr>
<tr>
<td><strong># of Fortune 500</strong></td>
<td>14</td>
<td>68</td>
</tr>
<tr>
<td><strong>(2011)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serious Catching-up Efforts</td>
<td>Korea</td>
<td>Japan</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td><strong>1970-2010</strong></td>
<td>Digital Era</td>
<td>Analog Era</td>
</tr>
<tr>
<td>Emerging Economies and Rapid Global Market Expansion /Changes</td>
<td>North America and Europe Dominating Market Steady Market Growth</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technological Capabilities</th>
<th>Medium and Focused</th>
<th>Deep and Large</th>
</tr>
</thead>
</table>

| Market Orientation | Small Domestic Market Export and Global Market-Driven | Large Domestic Market Balanced (Domestic vs. Export) |
# Korea’s Rapid Growth

Rapid economic, social and cultural transitions

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Population</strong></td>
<td>32,241</td>
<td>38,124</td>
<td>42,869</td>
<td>47,008</td>
<td>48,875</td>
</tr>
<tr>
<td>(thousands)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>GDP per capita</strong></td>
<td>252</td>
<td>1,592</td>
<td>5,886</td>
<td>9,628</td>
<td>20,759</td>
</tr>
<tr>
<td><strong>Population growth rate</strong></td>
<td>2.21</td>
<td>1.57</td>
<td>0.99</td>
<td>0.84</td>
<td>0.26</td>
</tr>
<tr>
<td><strong>Aging population indicator (%)</strong></td>
<td>7.2</td>
<td>11.2</td>
<td>20.0</td>
<td>34.3</td>
<td>67.7</td>
</tr>
<tr>
<td><strong>Urbanization indicator (%)</strong></td>
<td>40.7</td>
<td>56.9</td>
<td>73.8</td>
<td>81.9</td>
<td>90.8</td>
</tr>
<tr>
<td><strong>% of high school graduates that enter colleges</strong></td>
<td>26.9</td>
<td>23.7</td>
<td>33.2</td>
<td>66.9</td>
<td>79.0</td>
</tr>
<tr>
<td><strong>Population per medical doctor</strong></td>
<td>2,159</td>
<td>1,690</td>
<td>1,007</td>
<td>687</td>
<td>639</td>
</tr>
<tr>
<td><strong>% of household that three generations live together</strong></td>
<td>23.2</td>
<td>18.4</td>
<td>13.9</td>
<td>11.6</td>
<td>6.8</td>
</tr>
<tr>
<td><strong>Indus. Str. (no of empl)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture/Forestry/Fishery</td>
<td>50.4</td>
<td>34.0</td>
<td>17.9</td>
<td>10.9</td>
<td>7.3</td>
</tr>
<tr>
<td>Mining/Manufacturing</td>
<td>14.3</td>
<td>22.5</td>
<td>27.6</td>
<td>20.2</td>
<td>17.0</td>
</tr>
<tr>
<td>Services</td>
<td>35.3</td>
<td>43.5</td>
<td>54.5</td>
<td>68.9</td>
<td>75.7</td>
</tr>
</tbody>
</table>
## Top Five Major Industry-Level Export Items (South Korea)

<table>
<thead>
<tr>
<th>Rank</th>
<th>1990</th>
<th>2000</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clothing/ Texties (11.7%)</td>
<td>Semi-conductors (15.1%)</td>
<td>Shipbuilding (12.4%)</td>
</tr>
<tr>
<td>2</td>
<td>Semi-conductors (7.0%)</td>
<td>Computers (8.5%)</td>
<td>Semi-conductors (8.5%)</td>
</tr>
<tr>
<td>3</td>
<td>Shoes (6.6%)</td>
<td>Automobiles (7.7%)</td>
<td>Hand phones (8.5%)</td>
</tr>
<tr>
<td>4</td>
<td>Video Equipments (5.6%)</td>
<td>Petro-chemicals (5.3%)</td>
<td>Displays (8.5%)</td>
</tr>
<tr>
<td>5</td>
<td>Shipbuilding (4.4%)</td>
<td>Shipbuilding (4.9%)</td>
<td>Automobiles (7.0%)</td>
</tr>
</tbody>
</table>
## Korea's future growth engines

<table>
<thead>
<tr>
<th>Green Technologies</th>
<th>Integrative Industries</th>
<th>Premium Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Carbon Reduced Energy</td>
<td>8. IT Integrative Systems</td>
<td>14. Global educational services</td>
</tr>
<tr>
<td>5. Green Transportations</td>
<td>11. Bio-Pharmaceutical, Medical Equipments</td>
<td>17. MICE, Leisure Industries</td>
</tr>
</tbody>
</table>

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http://t.co/XWEa0AMq Sign up now! 10 days ago

Samsung Galaxy S™ II
Meet an Amazing Phone

Samsung’s Green Guide
Samsung

- Year established (1938)
- 4 major business areas:
  - Electronics - Electronics, Mobile display, SDS, SDI, Corning, LED (7 companies)
  - Heavy/Chemical - Heavy/ship building, Petrochemical, BP chemical, Precision mfg. (6 companies)
  - Finance - Insurance, Card, Securities, Venture capital (6 companies)
  - Independent - Trading, Engineering/Construction, Hospital, Theme park, Hotels, Advertising (9 companies)
LG Electronics named 2012 ENERGY STAR® Partner of the Year

The EPA is honoring LG for our "outstanding contributions to reducing greenhouse gas emissions by manufacturing energy-efficient products and helping to educate consumers about those products."

LEARN MORE
LG

- Established 1947
- Electronics and Chemical engineering industry (1960).
- 3 major business areas:
  - Electronics - Electronics, Display, Aircon Engineering, etc (9 companies)
  - Chemical - Petrochemical, Bio-technology (13 companies)
  - Telecommunication /Service - Dacom, Consulting (33 companies)

This section “Samsung, LG and Hyundai “ and “Characteristics of Korean Global Firms” are adapted from the materials presented in 5th Symposium and Workshop in International Supply Chain Management, Tokyo, Japan, March 8-10, 2012 by Seungchul Kim, Hanyang University, Korea.
Hyundai

- Established 1947 as a construction company.
- Major business areas:
  - Automobile
  - Heavy Industry/Ship building
  - Marine, Securities, Elevator
  - Engineering & Construction
### Hyundai-Kia Motor Company (HKMC)

<table>
<thead>
<tr>
<th></th>
<th>Capital (billion Won)</th>
<th>Production (Vehicle)</th>
<th>Sales (billion Won)</th>
<th>Employers</th>
<th>Brand Value (billion dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before (in 1968)</td>
<td>0.1</td>
<td>533</td>
<td>0.528</td>
<td>590</td>
<td>0</td>
</tr>
<tr>
<td>Now (in 2007)</td>
<td>1,485</td>
<td>2,602,322</td>
<td>31,134</td>
<td>55,501</td>
<td>4.45</td>
</tr>
</tbody>
</table>
Characteristics of Korean Global Firms

1. Healthy Sense of optimism in view of challenges and opportunities
   - North-South tension
   - Rapid social and economic transitions
   - Surrounded by global powers
Characteristics of Korean Global Firms

2. Strong ownership-based leadership
   - Charismatic leadership
   - Fast and quick decision making process
   - Clear strategic direction for the firm.
   - Strong driver/enabler for risky projects - can take risk when necessary in crisis period.
   - Experiences of overcoming several major crisis (1997 Asian economic crisis, 2008 World financial crisis)
Characteristics of Korean Global Firms

3. Strong global supply chain management
   - maintain a cluster of suppliers around main business.
     - source of competitiveness (SMEs in the back)
   - continue to extend vertical network collaboration for competitiveness
     - forward - logistics and distribution channel integration.
     - backward - network of supplier companies (SMEs)
   - Hyundai Motor's supply chain & network integration
Characteristics of Korean Global Firms

4. Focus on global market-orientation
   - Constant aim for the top echelon of the global market.
   - Move beyond the national border and domestic market.
     - Overcome small domestic market constraints.
     - Utilize Free Trade Agreements (FTAs) with partner nations.

Integral Product Architecture
The one sales event you don't want to miss. Hurry to your Toyota dealer today.
Product/Process Architecture

The Basic Type of Product Architecture

Modular Type: PC system

- Computing
- Projection
- Printing

Function

Structure

Divisible, Simplified
Segmented
<Open Box>

Integral Type: Automobile

- Handling
- Ride
- Fuel Efficiency
- Suspension
- Engine
- Body

Function

Structure

Interlinked, Complex,
Integrated
<Black Box>

Fujimoto(2004)
Product Classification by Product Architecture


Figure shows that automobile products are on the top of integral side and desk top computer is on the other opposite modular side.

In between these two extremes, car navigation, printer, digital camera, mobile PC and mobile phones are positioned.
Figure shows how different nations specialized in particular segment of DVD industry. Firms from NIES/BRICs produce DVD Players and Recording DVD Drive whose product architecture is modular. Chinese firms have more than 60% of world market share for DVD players which are based on the most advanced form of modular product architecture. It is interesting to note that firms from Korea and Taiwan dominate the global market (80% market share) of DVD Recording which applies mostly integral product architecture. Chinese firms do not yet enter this market.
Note:

Japanese technological competencies are in the areas of product design capabilities and organizational process capabilities (e.g., Toyota Production System) that are regarded integral (highly complex, inter-related, and not easily divisible and transferrable)
Figure shows miraculous growth of global market by change in product architecture. Within five years the small market (less than 10 millions) evolved to a global market with than 120 millions. Such phenomenal market growth occurred in CD-R Drive as product architecture changes from integral to modular types. This is somewhat similar to how developed nations cooperated with NIES/BRICs nations in the course of transforming PC industry in the global market through international specialization and mutual interdependence.
The diagram illustrates the interdependence of part design depending on the characteristics of the industry. It categorizes industries based on openness and modularity:

- **Closed** (standardized) industries are characterized by high product complexity, cross-functional project organizations, and heavy-weight project managers. These industries require long-term capability building and incentives.
- **Open** industries are characterized by low product complexity, functional project organizations, and light-weight project managers. These industries focus on short-term capability building and incentives.

**Technology Competence**:
- Closed-Integral (Car Industry): Product development with much interaction, high-complexity product, gentle PLC, cross-functional project organization, heavy-weight project manager, internal human resource, long-term capability building/incentive.
- Closed-Modular: Difference of architecture and competence, difference of PLC, difference of product development and management.

**Customer Competence**:
- Open-Integral (Electronic Industry): Product development with little interaction, low-complexity product, stiff PLC, functional project organization, light-weight project manager, mid-career recruiting, short-term capability building/incentive.

(Source: Adapted from Park and Hong (2011))
Then what happened?

(1) Japanese Electronic Firms (e.g., Sony, Toshiba, Panasonic,): Outstanding Technological Capabilities (i.e., Integral Architecture) do not necessarily make their products most competitive in the global market

- Domestic market focus vs. Global Market-Orientation
- Based on deep technological capabilities, pursue excessive product quality or features that customers do not value
- In view of integral (close) product architecture, organizational capabilities are not necessarily well globally-linked (e.g., excellent design capabilities are not necessarily shared effectively through IT infrastructure)
This is what happened:

(2) Korean Electronic Firms (e.g., Samsung and LG): Modest Technological Capabilities with Outstanding market responsiveness

- Move beyond their small domestic market; Global standards and global market orientation
- Provide products that customers value
- In view of modular (open) product architecture, organizational capabilities are well-globally linked (e.g., effective supply chain connectivity through IT infrastructure)
**Concluding Remarks**

**Competencies** (Technological, Organizational and Network) are important. Yet, competencies are tools not goals. Goals of business are Competitiveness.

**Competitiveness** (e.g., Competitive Advantage) is about translating technological competencies into market competencies. Ultimate test of business is not merely develop their network capabilities but to deploy them in ways to stay competitive in the market. Thus, this is about building network capabilities in turbulent competitive environments. Interesting stories and lessons from Korea and Japan.
For more information, please refer to:

[5] Updates
East Japan Earthquake & Supply Chain Crises

Unprecedented! Complete Destruction in Broad Area

Past Example of Disasters: Nihonzaka Tunnel Fire, Kobe Earthquake, Aishin Fire, Chuetsu-Oki Earthquake, etc.

Difference from the Past Disaster:
Global Operation, Global Competition, Product Electronification

Redefined -- “A Huge Disaster that Happened in a High-cost Country in the Era of Global Competition”
Overall, Japanese firms—in particular, Toyota’s Recovery from the Supply Chain Destruction by the Earthquake was Faster than Initially Expected.

C Takahiro Fujimoto, University of Tokyo
Lessons

- **Sense of urgency and priority.** Recover information flow first and restore physical flows.

- **Shared sense of destiny.** Focus on rescuing any plants within reach, not just your own plants only.

- **Robustness with competitiveness.** Disaster someday—but competition every day. Thus, do not waste resources for events with small probability but focus on what is important everyday.
Building Network Capabilities in Turbulent Competitive Environments

Theory and Practices of Global Firms from Brazil, Russia, India and China (BRICs)

YOUNG WON PARK and PAUL HONG
<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Building Network Capabilities in Turbulent Competitive Environments:</strong>&lt;br&gt;Practices of Global Firms from Korea and Japan</td>
<td></td>
</tr>
<tr>
<td><strong>Building Network Capabilities in Turbulent Competitive Environments:</strong>&lt;br&gt;Theory and Practices of Global Firms from Brazil, Russia, India and China (BRICs)</td>
<td></td>
</tr>
<tr>
<td>(1) Focus on key global Japanese and Korean firms (e.g., Samsung, Hyundai, POSCO, Japanese electronic firms).</td>
<td></td>
</tr>
<tr>
<td>(1) Expanded focus beyond selected Korean and Japanese firms.</td>
<td></td>
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<tr>
<td>(2) The market is mostly in North America and Europe.</td>
<td></td>
</tr>
<tr>
<td>(2) The market focus is on emerging large economies of Brazil, Russia, China and India.</td>
<td></td>
</tr>
<tr>
<td>(3) Several strategic suppliers are briefly mentioned.</td>
<td></td>
</tr>
<tr>
<td>(3) Indigenous firms from BRICs countries are included and extensively examined.</td>
<td></td>
</tr>
<tr>
<td>(4) The theory base is product architecture and supply chain management of selected firms.</td>
<td></td>
</tr>
<tr>
<td>(4) The theory base is expanded to include three core competence theories and international business theories as well as product architecture and supply chain management.</td>
<td></td>
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</table>
Thank you for your attention!

☐ For additional information please contact

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