Understanding the Service Revolution - Services to Service Science
從服務到服務科學

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The Service Revolution

- 1900 - 30% employed in the U.S. service sector; 1950 - 62%; 2006 - 83%
- Japan = 80%
- United Kingdom = 79%
- China = 34%
- Taiwan = 71%
“Service science is just ___<name your discipline>____”
The application of scientific, management, and engineering disciplines to tasks that one organization beneficially performs for and with another (‘service’)

- Make productivity, quality, performance, compliance, growth, and learning improvements more predictable in work sharing and risk sharing (coproduction) relationships.
The study of service system

- **Evolution & Design**: Services systems are rationally designed path dependent interactions between economic entities, acting in the roles of clients and providers coproducing value.

- **Interactions & Value Coproduction**: Service system dynamics are driven by the constantly shifting value of knowledge distributed among people, organizations, technological artifacts (culture), and embedded in networks or ecosystems of relationships amongst them.

- **Specialization & Coordination**: 1) specialization of clients and providers, 2) the need for coordination via markets, organizational hierarchies, and other mechanisms.
Service, Not Just Services

- Service is growing fast in the goods sector
- Why? – Technology (IT)
Transition of Taiwan’s Economy and Industrial Structure

Manufacturing-Led  
Labor-Intensive Industry

Investment-Led  
Capital-Intensive Industry

Innovation-Led  
Technology-Intensive Industry

Knowledge-Intensive Industry

<table>
<thead>
<tr>
<th>Year</th>
<th>GNP (US$)</th>
<th>GNP/Capita (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1952</td>
<td>631</td>
<td>196 (1952)</td>
</tr>
<tr>
<td>1985</td>
<td>3,139</td>
<td>14,188 (2000)</td>
</tr>
<tr>
<td>2000</td>
<td>14,188</td>
<td>14,188 (2000)</td>
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Quickly Adaptive Strategies & Response Capability

The Changing Business Operation in Taiwan IT Firms

Before the mid-1980s

<table>
<thead>
<tr>
<th>R&amp;D</th>
<th>Manufacturing</th>
<th>Marketing</th>
</tr>
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</table>

In the late 1980s
Early 1990s

<table>
<thead>
<tr>
<th>R&amp;D</th>
<th>Manufacturing</th>
<th>Marketing</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>OEM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ODM</td>
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After the mid-1990s

<table>
<thead>
<tr>
<th>R&amp;D</th>
<th>Manufacturing</th>
<th>Logistics</th>
<th>Marketing</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ODL/GL</td>
<td></td>
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</table>

Early 2000s

<table>
<thead>
<tr>
<th>R&amp;D</th>
<th>Manufacturing</th>
<th>Logistics</th>
<th>Marketing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>IDM/GL</td>
<td></td>
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</tbody>
</table>

OEM Original Equipment Manufacturing
ODM Original design Manufacturing
ODL/GL Original design logistics/global logistics
IDM/GL innovative design manufacturing/global logistics
Every Business is a Service Business

- Central is the service provided (HP printer, SAP service)
- This may or may not involve selling a good
Service as Part of the Car
Cars as a Service Business
- Innovative thinking
The Business Reality

- Goods are commodities
- Service sells the product
Satisfaction-Productivity
Trade-Off in Service

• Standardization => Productivity
• Customization => Satisfaction
• Business moral = can’t do both well, so pick one
Benefits of Technology

- Decrease costs
- Increase revenues by improving service
- So far business are paying attention mostly to the cost side
Transforming Companies
Information => Service
Design, Delivery, & Implementation
Information = Service

- Communicating with customers (agent, eBay)
- Understanding customers (holistic view, priceline)
- Customizing for customers (processing information, Amazon)
Customizing for Customers
Li & Fung
Power to the Consumer (End User)

- Information = Power
- Personal search
- Agents (MySimon)
- Business must provide the best value
Service Outsourcing -
Global perspective
Information Technology => Smaller Segments

- IT lowers cost of customization
- Smaller segments become economically feasible
- Logical end is 1-to-1 marketing
How to Justify Service Improvements?

Measurement issue

- Increased customers’ brand choice
- Increased customer attraction & retention
- Increase customer lifetime value and Customer Equity
Drivers of Customer Equity

- Value Equity
- Brand Equity
- Relationship Equity
Improve Customer Equity

Improve Customer Lifetime Value

Improve Switching Matrix

Improve Value Equity

Improve Brand Equity

Improve Relationship Equity

Improve Value Equity Drivers

Improve Brand Equity Drivers

Improve Relationship Equity Drivers
Projecting the Future – Service Gets More Important

- Information technology advances
- Service advances
- Customer relationships deepen
- Service sector expands
- Goods become more information-intensive
How to Visualize the Future of Service

- Communications become instantaneous, anywhere, anytime
- Companies and customers know everything about each other
- Unlimited computing capacity leads to unprecedented customization ability
Service innovation is inherently multidisciplinary…

Knowledge sources driving service innovations…

Science & Engineering

Technology Innovation

Social-Organizational Innovation

Social Sciences

Business Innovation

Demand Innovation

Business Administration Management

Global Economy & Markets

SSME = Service Sciences, Management, and Engineering
So, What is SSME?  
($Services Sciences, Management, and Engineering$)

- Science is a way to create knowledge
- Engineering is a way to apply knowledge and create new value
- Business Model is a way to apply knowledge and capture value
- Management improves the process of creating and capturing value
# A Service-Logic Shift for Service Science

<table>
<thead>
<tr>
<th>Meta Questions?</th>
<th>G-D Logic</th>
<th>S-D Logic</th>
</tr>
</thead>
<tbody>
<tr>
<td>What do firms do this?</td>
<td>They produce output, thus emphasis is on <em>efficient</em> production.</td>
<td>They produce inputs to service systems, thus emphasis on how to <em>effectively</em> co-produce inputs.</td>
</tr>
<tr>
<td>How do firms do this?</td>
<td>Through operand resources, thus must know how to <em>control</em> people and stuff (static)</td>
<td>Through operant resources, thus must know how to <em>collaboratively</em> create apply operant (dynamic) resources.</td>
</tr>
<tr>
<td>Who do firms do this?</td>
<td>To maximize <em>shareholder</em> wealth, thus must know how to increase profit, cash flow and share price.</td>
<td>To build mutually beneficial exchange relationships that enhance mutual wellbeing for the firm and stakeholders i.e., serve <em>all stakeholders</em>.</td>
</tr>
<tr>
<td>What scientific concepts and tools are dominant?</td>
<td>Optimization Models; Controlled Experiments; Static Equilibrium; Logic of Justification.</td>
<td>Evolutionary Computing; Ethnography; Complex Adaptive Systems; Logic of Discovery</td>
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## Difficult Conceptual Transitions

<table>
<thead>
<tr>
<th>Good-Dominant Concepts</th>
<th>Transitional Concepts</th>
<th>Service-Dominant Concepts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goods</td>
<td>Services</td>
<td>Service</td>
</tr>
<tr>
<td>Products</td>
<td>Offerings</td>
<td>Experiences</td>
</tr>
<tr>
<td>Feature/attribute</td>
<td>Benefit</td>
<td>Solution</td>
</tr>
<tr>
<td>Value-added</td>
<td>Co-production</td>
<td>Co-creation of value</td>
</tr>
<tr>
<td>Profit maximization</td>
<td>Financial Engineering</td>
<td>Financial feedback/learning</td>
</tr>
<tr>
<td>Price</td>
<td>Value delivery</td>
<td>Value proposition</td>
</tr>
<tr>
<td>Equilibrium systems</td>
<td>Dynamic systems</td>
<td>Complex adaptive systems</td>
</tr>
<tr>
<td>Supply chain</td>
<td>Value-Chain</td>
<td>Value-creation</td>
</tr>
<tr>
<td>Promotion</td>
<td>Integrated Marketing</td>
<td>network/constellation</td>
</tr>
<tr>
<td>To market</td>
<td>Market to</td>
<td>Dialog</td>
</tr>
<tr>
<td>Product orientation</td>
<td>Market Orientation</td>
<td>Service-Dominant Logic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Consumer and relational)</td>
</tr>
</tbody>
</table>
A Few Ideas for Future Development

- What are the best ways to transform a company from a goods company to a service company?
- How can mobile communication devices be used to provide better service?
- What are the most effective means of data mining in large customer databases?
More Developments

- What will be the results of service outsourcing?
- Can we provide that the use of technology to expand service pays off better than using it to cut costs?
- Are there ways to model customer equity and ROI more effectively?
Thank You!

Questions?