INNOVATION IN INDIAN IT INDUSTRY

Changing Focus and Perspectives

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Defining innovation in IT industry

- Changes in Product, Process or Practice (organizational routines)
  - New IT products or transition from less to more complex, risky & investment intensive activities
  - Application development/package implementation processes – requirement, design, coding, testing, solution definition, engineering
  - Practices - Coding (reusability), KM (tools, benchmarking), Security (data), HR (training, job-rotation, cross-functional teams)
Processes influencing innovation

- Transition from onsite to offshore
  - Process, practice innovation and labour market deepening

- Competition as well as collaboration on the rise
  - MNCs setting up subsidiaries in India for R&D
  - Nature of outsourcing undergoing change – chip design
  - Technology intensive alliances (local/non-local/international) facilitating transition to higher-end out-sourcing (especially in IT clusters)

- Increase in partnerships with industry and educational institutions (in IT clusters)

- IT market growth to take place in Asia especially China and India (IT adoption on the rise)
  - Products/services specific to these markets
  - Indian firms can reap advantages of proximity to the markets
Processes influencing innovation....

- Technological changes creating innovation opportunities
- Changes in semi-conductor industry
  - System-on-chip (SOC) integration promises further disintegration of the industry
  - Markets for design modules (DM)
  - Design opportunities for Indian firms, already being exploited
- Use of IT in other sectors
  - Changes in drug discovery processes
    - Synergies between biotech, pharma & IT
  - Use of IT in auto-industry
  - New opportunities for IP creation and entrepreneurship
  - Indian IT firms active in both domains
Firm responses to changing conditions

- Patent filings on the rise (especially in US) but not all IP created is protected
  - Small IT firms quite active
- Large share of worldwide IP by IT MNCs created in India
- Most IP protected by Indian firms in Western nations
  - Focus on protection where market exists (patentability?)
  - IP as a differentiating factor - Quality certifications do not differentiate anymore
  - Signal expertise in specific domains to seek business
  - Especially relevant for entry into high-end IT activities
- Focus on IP protection elsewhere slowly changing with expansion of Asian markets
- Industry demand for more stringent IP regimes
Firm Perceptions about appropriability

Relative effectiveness of different appropriability mechanisms to protect & profit from product innovations in the Indian IT Industry - hardware and software (Survey results – Gupta, 2004)
<table>
<thead>
<tr>
<th>Appropriability Mechanism</th>
<th>Response Score (Not effective = 1 to Very effective = 5)</th>
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<td>Average</td>
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<td>Complexity of technology/designs</td>
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<td>Encryption type copy protection measures</td>
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<td>Better lead-times than competitors</td>
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<tr>
<td>Brand building</td>
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<td>Access to competitive manufacturing</td>
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<td>Access to good marketing &amp; distribution</td>
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Firm Perceptions……

Relative effectiveness of different appropriability mechanisms to protect and profit from innovations in processes, methodologies, tools & techniques (Survey estimates – Gupta, 2004)
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Preferred appropriability mechanisms to benefit from innovation

- Market related complementary assets most critical
  - Expected, industry based on overseas markets
- Brand building becoming important
- Significant proportion of firms see legal IP protection as an effective mechanism
  - Patenting and copyright protection perceived to be useful
- Innovation very much on the radar of firms
Future potential of innovation

- Growth of the Indian IT market – adoption by other sectors
- Spread of IT and telecom infrastructure to facilitate labour market deepening
- Participation in global outsourcing and R&D networks
- Rise in internal and external competition and the associated need to remain competitive in low-end activities and moving up the value chain
Thank You

Comments & Questions?