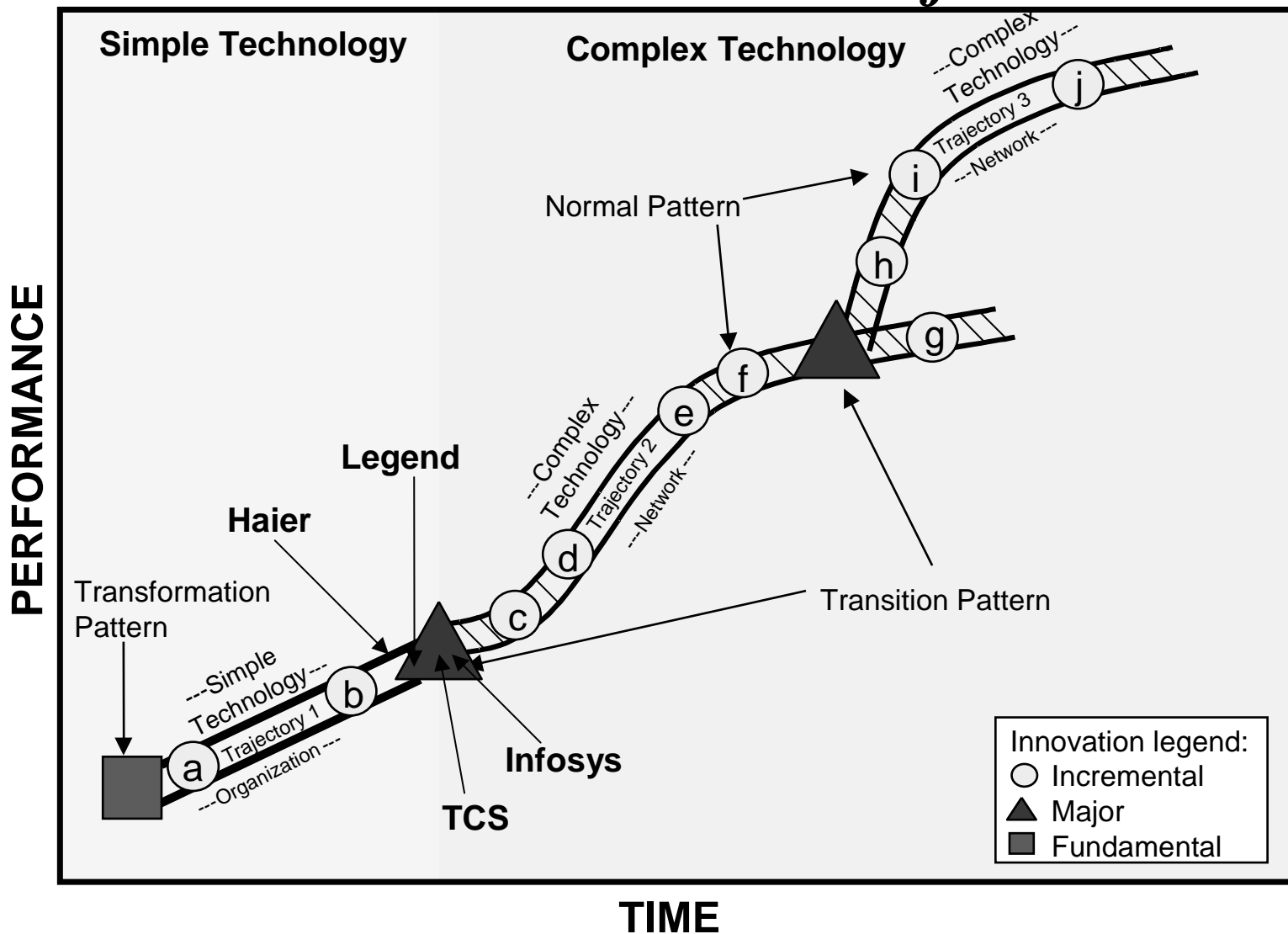
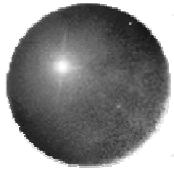


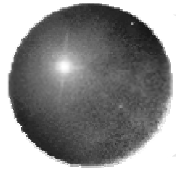
Generic Innovation Trajectories





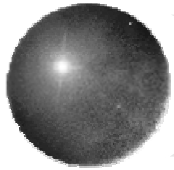
Case Studies

- ❖ **High-Pressure Turbine Blade, GE, US**
- ❖ **Radiation Therapy Accelerator, Varian, US**
- ❖ **Cardio-Imaging Technology, HP and Philips, US and Netherlands**
- ❖ **Microprocessor, Intel, US**
- ❖ **3.5" Micro Floppy Disk Drive, Sony, Japan**
- ❖ **Audio Compact Disc Player, Philips and Sony, Netherlands and Japan**
- ❖ **Fuel Injection Systems For Diesel Engines, Bosch, Germany**
- ❖ **Household Appliances, Haier, China**
- ❖ **TV, Changhong, China**
- ❖ **Computer Systems Technology, Legend, China**
- ❖ **Information Technology Services, Infosys, India**
- ❖ **Information Technology Services, TCS, India**
- ❖ **Diesel Fuel Injection Technology, MICO, India**

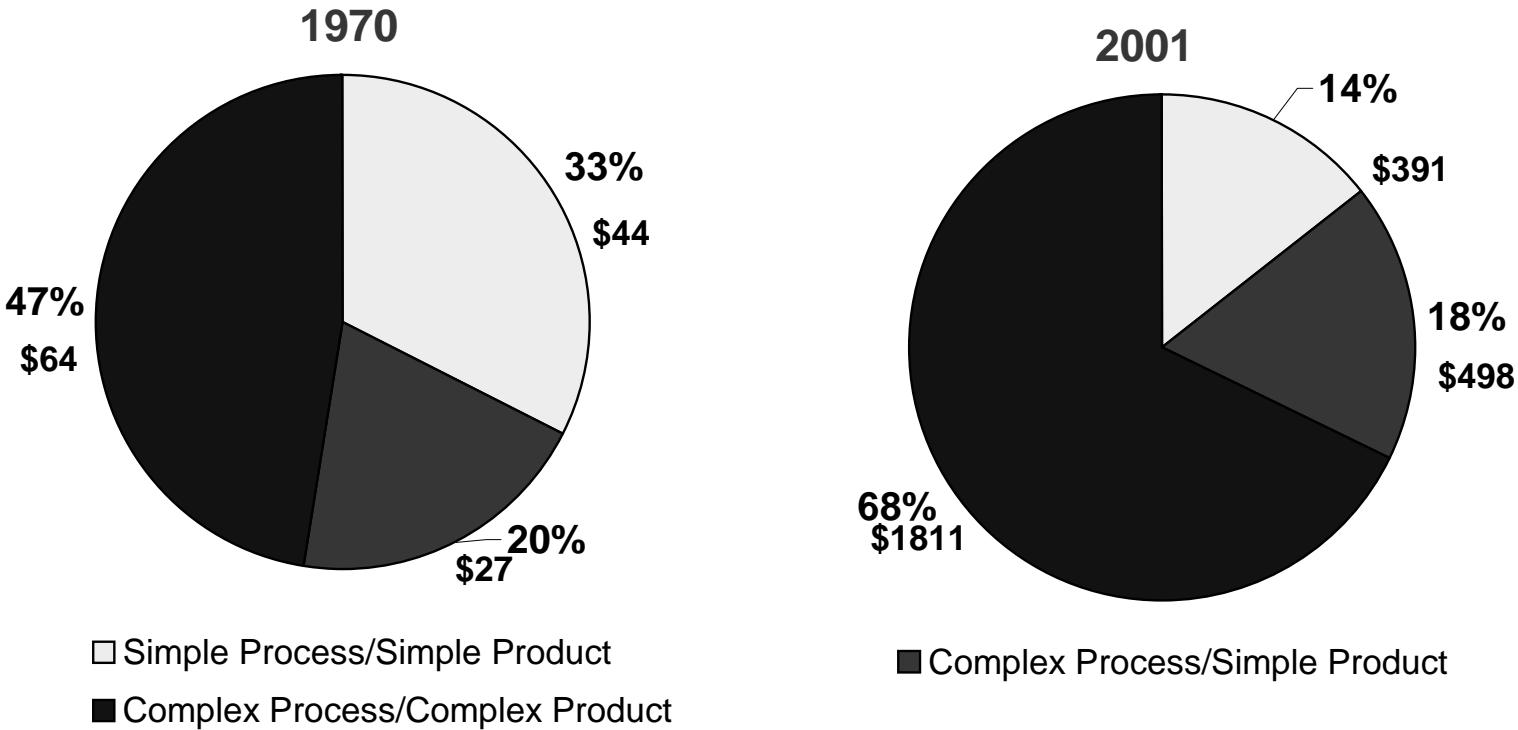


Definition of Complex Technologies

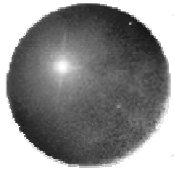
- ❖ **Complex technologies are those that cannot be understood by an individual so that the technology can be communicated across time and distance for precise reproduction**



Thirty Most Valuable Manufactured Goods Exports (Comparison of 1970 and 2001, \$Billions)

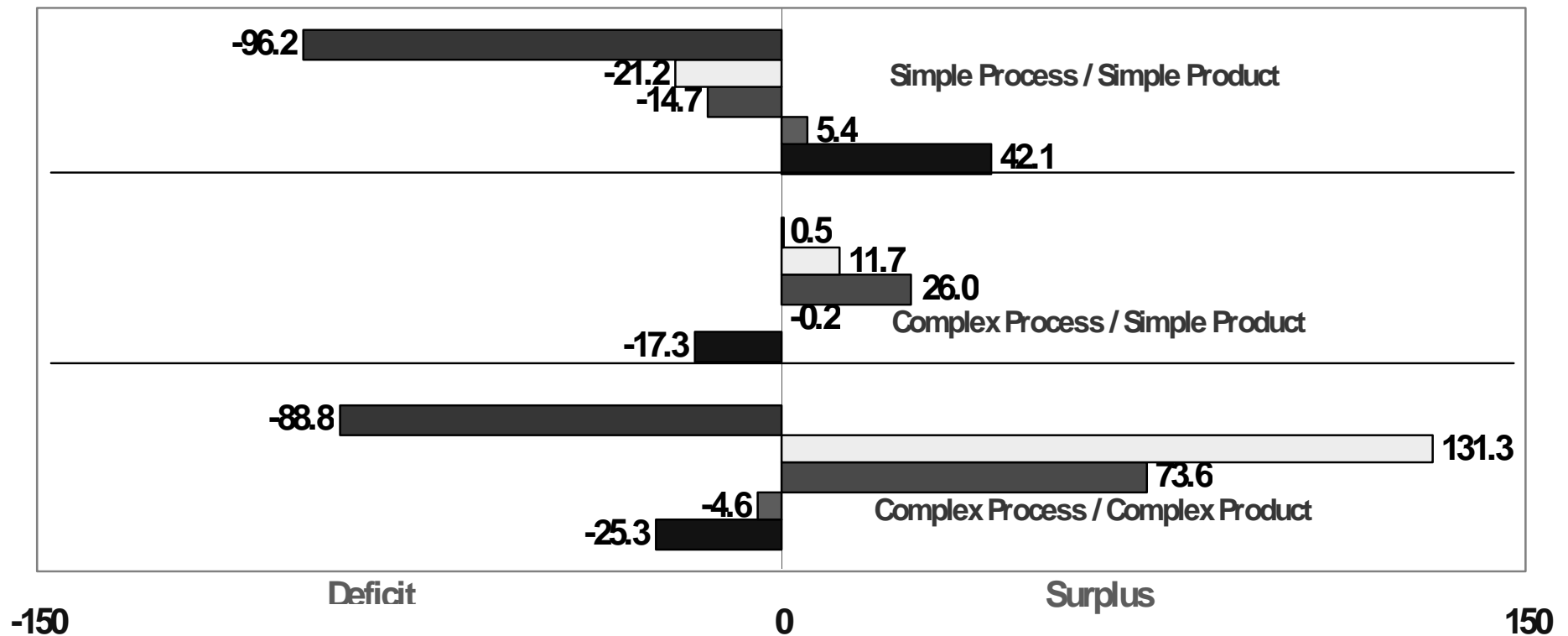


Source: Compiled from the United Nation: *Statistical Year Book of International Trade 1974, 2001*



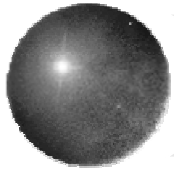
Comparison of International Trade Balance of the United States, Japan, Germany, India*, and China

(2001 Top 30 Manufactured Exports, \$Billions)



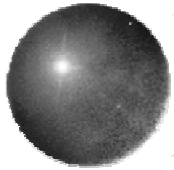
* 2000 Data





Cultural Variables

- (1) Trust:** Do ethical habits in your country/company give people grounds for trusting each other?
- (2) Comfort with tacit knowledge:** To what extent are people in your country/company comfortable with tacit knowledge?
- (3) Comfort with codified knowledge:** To what extent are people in your country/company comfortable with codified or explicit knowledge?
- (4) Equality vs. inequality:** Do you categorize your country/company as an equalitarian country/company or a hierarchical one?
- (5) Individualism vs. collectivism:** Do people in your country/company prefer teamwork or individual job responsibility?
- (6) Decision-making:** In your country/company, are decisions usually made by individual authorities or by team consensus?
- (7) Uncertainty:** Does your national/company culture avoid or favor uncertainty?



Five Questions

- 1. Is the technology simple or complex?**
- 2. In what technology sector or sectors are you seeking to innovate?**
- 3. Is the innovation normal (incremental), transitional (major redesign), or transformational (first-of-a-kind)?**
- 4. What mix of tacit and explicit knowledge is needed?**
- 5. What will be your major organizational sources of knowledge?**