Unsecured Economies: Protecting Vital IP

Karthik Kannan, Ph.D.
Assistant Professor of Management Information Systems
Krannert School of Management
Center for Education and Research in Information Assurance and Security
Purdue University
“Before, criminals used to steal money to become rich, but now they have realized that they can be rich by stealing corporate information.”

– An official from the US Treasury Department
Motivation for the Study

- Information is increasingly becoming digital
  - Includes intellectual property and sensitive data.
- ... and data is moving beyond the traditional boundaries of the firm.
- Therefore, protecting information leaks is becoming increasingly harder, and risks higher.
- Information security is primarily related to the perception of risk.
Questions

- How do security perceptions and practices vary across economies and industries?

- How do the perceptions regarding economies affect the transfer of intellectual properties?
Survey

- “Senior IT decision makers” (CIO/director level) in 790 firms
- Survey administered over phone and web
- Countries surveyed:
  - US, UK, Germany, Brazil, China, Japan, India, Dubai
- Industry Sectors surveyed:
  - Defense, Retail, Product Development and Manufacturing, Financial Services, Government, Information Technology and Services
Intellectual Property (IP)

- Majority of the IP originates from North America and Western Europe (47% of the respondents).
- On average $17 million worth of intellectual property and sensitive information is moved outside the country of origin.
Security and IP Loss

- Information security investment as a fraction of IT budget is lower in developed countries (US, UK, Germany, Japan) than in developing countries (China, India, Brazil).
  - Developing countries are motivated to invest to maintain competitive advantage
  - Developed countries invest in response to regulations
- On average firms lost $4.6 million worth of IP last year
The Perfect Storm: Economic Downturn

- 39% percent of respondents believe sensitive information has become more vulnerable now due to the current economic climate.
- 68% reported insider-threat as their top concern above un-patched vulnerabilities, cyber-terrorism and cyber espionage
- 42% are worried about laid-off workers
Security Investment During the Downturn

- Investments are not expected to increase
  - Majority of respondents indicated that they are not considering an increase (62%)
    - China was the exception (57% expected to increase investments)
  - Majority of US firms do not expect change in investments
Information Security Perception

- China, Russia and Pakistan were considered the serious threats.
- Perceptions appear to be more rooted in historical conflicts and modern economic, cultural and political differences.
  - China vs. Japan; India vs. Pakistan; US vs. Russia
- Except for Japan and US, all the countries perceived themselves better than how other countries perceived them.
Some Key Challenges Ahead

- Information security is simply not a technology issue – it is an important managerial issue
  - Organizational silos and information security
- Information security threats are global. Yet, we don’t have proper procedures to deal with the global threats
Thank you!