How big is the map data set?

- 1200 data points mapped
- 608 companies
- 8 sectors
- Public info
- CDO Subset:
  - 179 companies
  - 397 total locations
Map data set: Services

- Services: 67%
- Manufacturing/Defence/Aerospace/Automotive: 19%
- Energy/Extractive/Environment: 11%
- Agriculture/Fish/Food/Related Services: 3%
- Other Services: 26%
- ICT: 16%
- Infrastructure/Transport/Engineering/Construction: 7%
- Financial Services/Indirect Investment: 8%
- Education: 10%
CDO data set: locations in Asia markets

- Publicly available data plus Bloomberg
- 75% of Canadian firms are represented in at least 2 Asian countries
- Expanding definitions of “Asia-Pacific”
  - Companies now include Australia and NZ within this category
  - Trend to recognize China, Hong Kong, Taiwan, and Macau as “Greater China”
How is the firm set up in each market location?

- Joint ventures more common in other map sectors
- CDO dataset: Asian operations are 100% Foreign Owned Enterprises
  - Substantial # of privately held operations in licensing agreements
- What does this signify?
  - Ownership choices reflect proprietary and IP protection
• Some employee head counts provided in aggregate
• Sample size is still small
• 2/3 firms employ between 51-500 people
Major clients by sector

Auto & Aviation

- Audi
- BMW
- Land Rover
- Ford
- Saab
- Rolls Royce
- Boeing
- KLM
- Toyota
- Air Canada
- Bombardier
Major clients by sector

Network Architecture & Communications

- 3M
- Bell
- Motorola
- Honeywell
- Cisco
- IBM
- Microsoft
- Toshiba
- Oracle
- Samsung
- BlackBerry
Major clients by sector

Services supply chains?
Revenue from Asian markets?

- Senes/Arcadis – 26%
- ATS Automation – 24%
- Blackberry – 12%
- Absolute Software – 11%
- CAE – 16%
- CGI – 4%
- Descartes – 3%

- Data from publicly traded companies only
- Further analysis is required
- Robust growth forecasts for entertainment industries (IMAX, D-Box) as disposable incomes rise in China and India
Location of head office

- Ontario: 63
  - Toronto/GTA: 35
  - Ottawa/Kanata: 13
  - Kitchener/Waterloo: 13
- British Columbia: 31
  - Vancouver: 12
  - Richmond: 12
- Quebec: 27
  - Montreal: 16
- Alberta: 6

Canadian Digital Economy Firms
Asian presence % by Head Office Province

- B.C.: 22.5%
- Alberta: 4.3%
- Ontario: 45.7%
- Quebec: 19.6%
- Other, N/A: 8%
CDO dataset locations in Asia

- Roughly 25% of Canadian business operations in Asia are in only 1 country
- Japan tops locations for Toronto/Waterloo
- About 20% of corporate websites had Asian language options
  - Majority in Chinese
Internal supply chain dynamics?

- China + Taiwan = 71
- Japan + South Korea = 61
- Singapore + Malaysia = 59
Internal supply chain dynamics?
Next steps

- Service supply chains?
- Research Europe, USA?
- CDO-only map?
- NAICS code classification?
CDO supply chain mapping
PWC 2012 BC TechMap: 1400 Companies
PWC 2012 BC TechMap: Classifications

**Sector Descriptions**
*Industries represented on the Global Map*

- **Software**
  Companies involved in developing enterprise applications software, middleware, tools, and personalized applications

- **Electronics & Peripherals**
  Companies involved in designing, manufacturing and implementing subassemblies, set-top boxes, integration devices, electronic components, computers, storage devices, photonics, and advanced control and measuring devices

- **Digital & Media**
  Companies involved in developing multimedia and e-commerce enabling technologies, multimedia content, portals, and e-learning

- **Clean Technology**
  Companies involved in developing fuel cells, solar energy, hydro electric or wind energy systems

- **Mobile & Web**
  Companies involved in developing (iOS, Android, Windows, etc.) business social and game platforms

- **Telecommunications & Wireless Communications**
  Companies involved in developing telecommunication, data, wireless, and satellite communication products

- **Advanced Manufacturing & Semiconductors**
  Companies involved in developing technologies that combine manufacturing with information technology and microelectronics including aerospace, advanced materials, lasers, and robotics. Companies involved in designing and manufacturing semiconductors and semiconductor equipment

- **Cloud Integration**
  Companies involved in the cloud integration technology platforms for data storage as well as virtualization and virtualization-based cloud infrastructure solutions

- **Life Sciences**
  Companies working in pharmaceuticals, biotechnology, medical devices, bioinformatics, and environmental technology

- **Energy Technology**
  Companies involved in developing energy conversion, energy storage, systems or components for stationary, portable or transportation use that are not clean technology

- **Services & Analytics**
  Companies involved in delivery of software, internet, and information technology services, including mobile and web analytics, other technology services as well as diagnostics of technology-related equipment