Learn the Future by living in the Present

Introduction to Global Supply Chain Networks : Part 2

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Integrated Supply Chain Networks
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- Information Network
- Enterprise System or Web-site
- Supply Network
- Demand Network
- Logistics Network
- Logistics Hub
- Service Network
- Service Provider
- Financial Network
- Banks
- Supplier
- Manufacturer
- Distributor
- Retailer
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Disintegration of Production: Barbie doll

- The plastic and hair sourced from Taiwan & Japan.
- The molds & paints for decorating the dolls are from US.
- Assembly in low-cost locations Indonesia, Malaysia & China.
- China supplies only cotton cloth for dresses and the labor.
- The export value of the dolls at Hong Kong is $2.35 cents of Chinese labor, 65 cents of materials & rest for transport, overheads & profits.
- The doll sells for $10 in the US: 1$ for Mattel & the rest covers transport, marketing, wholesale and retailing in U.S.
Logistics Providers
The Six Dominant Players

- Suppliers
- Logistics Players: B2B and B2C
- Contract manufacturers
- Original Equipment Manufacturers
- Distributors
- Retailers

They are independent companies globally distributed & highly connected.
Life-cycle-based Logistics

- Logistics depends on the product life cycle
  - Movement of Semi finished items from one machine shop to another (Manufacturing logistics)
  - Movement of Finished products from end of the production line to the consumer (Outbound logistics)
  - Movement of Raw materials from source of supply to the beginning of the production line. (Inbound logistics)
  - Movement of Spare parts from manufacturers to the customers via dealers (Spare part logistics)
  - Movement of Used goods from consumer to the manufacturers (Reverse logistics)
Most manufacturers handle all logistics functions including trucking and warehousing (1PL).

2PLs are basic transportation and storage providers such as truckers, warehouses and container lines and have high levels of asset intensity.
- Airports and Seaports are categorized as 2PLs.

3PLs provide end to end total value added logistic solutions.
- Own some assets such as distribution centers and rent other assets from 2PLs.
- Freight management is the key process for 3PLs.
Lead Logistics Providers (LLP)

- The LLPs follow the leveraged growth model that mobilizes the needed assets and capabilities existing within other companies to deliver value to its customers.
- Assumes responsibility for the logistics and the management of collaborative relations in the network, and aligns the participants’ objectives with those of the complete chain.
- Orchestrators must be competent at recruiting the right providers and developing strong ties with them.
Global Trade Issues
Global Supply Chain Networks

- Global Manufacturing Supply Chains Networks have proliferated as a result of convergence of several technologies and co-evolution of several global players
  - Decline in transport costs
  - Standardized modular product assemblies & Outsourcing
  - Emergence of the Internet
  - Emergence of the Contract Manufacturers & Efficient Logistics service providers
  - Greater integration of economies by reducing the trade barriers
Institutions and Supply Chains

- Global supply chains pass through several countries through the ports and airports and are to be managed effectively to minimize the lead time and inventory.
- Soft infrastructure such as trade facilitation, free trade agreements, customs duties, business friendliness and economic diplomacy of the Governments, social factors such as labour unions and industry associations are important for superior performance.
- Favourable institutional environment reduces transaction costs and positively influence the trade.
Global Supply Chain Management

World seaborne trade in cargo ton-miles, 1999–2012 (Billions of ton-miles)

Source: UNCTAD secretariat based on data from Clarkson Research Services’ Shipping Review & Outlook, spring 2012.
There were only 16 FTAs at the end of 1989. As of August 2009, 171 FTAs were in effect.
Connectedness, Risk and Trade Collapse
High Performance Supply Chains: Efforts of Stake holders for last Two Decades

- Lean, JIT, TQM, Outsourcing, Collaboration, Visibility, Supply hubs, Cross docking, etc
- Web, Software, Consultants & Implementation Experts
- High performance: Low inventory, Just in time, Low cost, Shared services
- Global sourcing from low cost countries
- Highly connected (logistically, informationally and financially)
- Final Goal: Global Supply-Demand Matching
Tension between Weak and Strong Ties among Supply Chain partners

- Strong ties promote commitment but also restrict firms’ freedom to access new frontiers.
  - The buyers may **socially obligate** themselves to partners with obsolete capabilities & **ignore** potential new partners with lower costs or better technologies

- Weak ties (arm length relationships)
  - **Incentivizes** partners to be on the cutting edge in cost and innovation
  - Provides flexibility to severe ties if needs emerge.
SCNs act as Risk Transmitters & Amplifiers

- Efficiency Contributors of SCNs turned Risk Creators: Outsourcing, International Logistics, Internet, Credit through LCs, Trade & Financial Flow Liberalization, ...  
- 2008 Financial Crisis & Decline in Trade - De-Globalization  
- 2011 March 11, Earthquake, Tsunami, Nuclear crisis & Plant Shutdowns in Japan threatened supplies of semiconductors to car parts to the globe.
The synchronization was due to the connectivity of global supply chains that reacted “just in time” to the collapse in demand.

The Great Trade Collapse: Causes, Consequences and Prospects

VoxEU.org Publication Edited by Richard Baldwin page 3

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Conclusion
Globalization has created dispersed supply chains which are vulnerable to and dependent on factors that are exogenous to the supply chain.

Credit squeeze after the financial crisis, environmental regulations, protectionist policies of governments, political unrest, economic instability, and natural disasters are non-supply chain factors that affected the supply chains performance.

This course presents the supply chain ecosystem framework to holistically model all the factors that interact with the supply chain and visualize all Operational, Strategic, Management & Execution issues and risk mitigation strategies.