Governance of Networked Organizations

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Networked Organizations & Governance

- A number of independent companies, each concentrating on its core businesses, form an alliance towards a specific goal performing activities along the value chain, acting together as a single corporation
- Partner selection, coordination and control are three parts of Governance of global value chains
- Coordination involves deciding on key parameters such as product definition, specification, technology to be used, production schedule and location, quality systems, labour and environmental standards, targeted price and communicating to the partners.
NETWORK STRUCTURE IN A GARMENT INDUSTRY
Network governance facilitates integrating multiple autonomous, diversely skilled parties to create complex products or services meeting time and quality requirements.

Three types of Governing structures
- **Hierarchy**: Co-ordination and control of production and related activities is internalized to the firm
- **Markets**: Company independently produces to the market
- **Network structure**: Interactions take place through networks of companies engaged in mutually supportive actions i.e. one party is dependent on the resources controlled by another, and there are gains to be had by the pooling of resources.

Network governance is a “distinct form of coordinating economic activity”, which contrasts (and competes) with markets and hierarchies.
Integrator

- Integrator is either a OEM or Propriety Technology Owner or Financier or a Trader

- Develops the strategy, conceives winning products and co-ordinates work flow among all the partners, trains the human resources and helps in the event of trouble.
  - Auto manufacturers such as Chrysler use their buying power and size to their and network’s advantage.
  - Apple uses its propriety technology as a leverage and protects itself through non-compete and non-disclosure agreements and moving rapidly to new technologies.
  - Financiers (Investment bankers) have been traditional integrators
  - Information Owners leverage (Book stores, Super markets & Chain stores) their closeness to the customer.

- Benneton, Nike, Cisco, Mark and Spencer are best known network integrators outside of auto industry.
A channel master is an enterprise within a supply chain that has compelling control over the sales of a product.

<table>
<thead>
<tr>
<th>Company</th>
<th>Supply Chain</th>
<th>Rationale</th>
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<tbody>
<tr>
<td>GM, Ford, Daimler</td>
<td>Automotive Manufacturing</td>
<td>Top 3 automakers command 73.7% of annual vehicle sales</td>
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<td>Chrysler</td>
<td></td>
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<tr>
<td>Coca Cola, Pepsi,</td>
<td>Beverages and Soft Drinks</td>
<td>Top 3 manufacturers account for 80.1% of soft drink market</td>
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<tr>
<td>Cadbury-Schweppes</td>
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<td>Dell Computer</td>
<td>Computer Manufacturing</td>
<td>Commands the largest share of desktop PC sales in the US</td>
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<tr>
<td>Cisco Systems</td>
<td>Networking Gear Manufacturing</td>
<td>Leading manufacturer that owns the electronic infrastructure of the supply chain, and customer mind</td>
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<tr>
<td>Wal-Mart</td>
<td>Mass-Retail</td>
<td>Biggest customer account of most CPG companies, requires vendors to operate through RetailLink^59</td>
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Features of Governance
Features of a Well-defined Network Governance Structure

- Identifies and manages relations with government, trade & social groups, labour, resources and B2B and B2C delivery mechanisms
- Builds business models and relationships for growth enhancement
- Builds systems for effective communication, collaboration and coordination among the network partners
- Identifies and categorises risks from various ecosystem sources and puts in place risk mitigation strategies in operational readiness
- For every customer order, selects the partners, allocates the tasks and responsibilities & forms the network
- Ensures that labour laws & environmental standards are followed.
- Manages a control room for monitoring and execution of the planned activities in a timely manner under both normal & severe conditions

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Talents Needed Supply Chain Governance

- **Deep Domain Knowledge**: Detailed understanding of practices and processes being coordinated, Intellectual Property relating to Products and Processes
- **Management of** Procurement, Acquisition, Partner selection, Monitoring, Supervision & Visibility across the SCN
- **Relationship Management** Trusted relationship with customers, Suppliers, Service Providers, Government, Employees
- **Capabilities** to Identify, Continually Redesign and Manage, Processes to changing market needs
- **Human resources**: Training, Mentoring, Performance evaluation
GSCNs and Interorganizational Social Networks
Global Supply Chains

- Networks of companies forming a goal specific chain.
- Inter-organizational social network with strong & weak ties
- Strong ties promote commitment.
  - Keiretsu (Japan), Chaebol (Korea), Guanxi (China)
  - The buyers may feel **socially obligated** to partners with obsolete capabilities & compelled to **ignore** more competent new comers.
- Weak ties (arm length relationships)
  - Can sever ties if not competitive.
  - Incentivizes partners to be on the cutting edge (cost & innovation)

**Tension between Weak and Strong Ties**
Three Types of Network Governance

- The Network Governance model
  - Highly Centralized External Broker (Li & Fung, Olam Intl.)
  - Participant Shared Governance by Elected Board (Healthcare, Dairies, Cooperatives)
  - Participant Shared Governance with a Lead Player
    - Producer-driven (Cisco, Nike)
    - Buyer-driven (Wal-Mart, Carrefour, Levi)

- All three governance forms are in practice & None proved superior.
Ecosystem Aware
Global Supply Chain Management

Multilayer Governance, Coordination & Execution
Governance: Partner Selection, Coordination & Control

- The supply chain is an inter-organizational network
- A separate chain is formed for each order
- **Partner selection** based on
  - Structural features (asset specificity, capabilities)
  - Relational ties (govt., social organizations, cluster managements, etc.)
- **Coordination**: Determining who does what and when and communicating to everyone
- **Execution**: Monitor order status so that processes work as per plan & control exceptional events
Ecosystem Aware
Global Supply Chain Management

Partner Selection
Transaction costs are the costs incurred to coordinate and connect all links in the global supply chain.

Transaction costs relate to finding a suitable trading partner, negotiating, setting up the contract and monitoring compliance with the selected partner.

Transaction costs include
- **Observable costs**: transport costs, import duties, customs tariffs and other formal trade barriers
- **Soft costs**: Costs for information gathering, negotiation & monitoring contracts, trust building, networking, risk handling and mitigation, making up for cultural differences and miscommunication, compliance with safety regulations, labor laws etc.

The hard observable costs decrease with trade liberalization and decreasing transport costs, the soft costs of social connections gain relative importance.
Transaction Costs

- Three characteristics of transactions affect the transaction costs: asset specificity, uncertainty and frequency.
- Transaction Cost Economics (TCE) Theory:
  - When transaction costs are low, use the spot market governance
  - When transaction costs are high, Hierarchy is efficient
- In between market and hierarchy, there is the governance structure hybrid.
Four Types of Supplier Asset Specificity

- **Physical asset specificity** refers to the mobile and physical features of assets such as specific dies, molds, and tooling for the manufacture of a contracted product.

- **Dedicated asset specificity** represents discrete and/or additional investment in generalized (as opposed to specific) production capacity in the expectation of making a significant sale of a product to a particular customer.

- **Human asset specificity** arises in a learning-by-doing fashion through long-standing customer-specific operations.

- **Site asset specificity** refers to the successive stages that are immobile and are located in close proximity to one another so as to economize on inventory and transportation.
Asset Specificity & Ecosystem

- **Supply chain** specific assets
  - Good relationships between members of network or cluster
  - Assets such as specific dies, molds, and tooling for the manufacture

- **Resources**: The human, clusters, financial institutions etc. ports and airports, Location specific assets

- **Institutions**: create benefits to companies in taxes and tariffs, by creating special economic zones, special universities for training manpower, etc

- **Delivery Infrastructure**: Ports, Airports, Rail roads, Highways Special trucks for carrying finished vehicles and heavy power plant equipment such as boilers, Temperature controlled warehouses, refrigerated vehicles, Forklift trucks, guidance systems, etc.

- Some of these costs are not flexible or transferable across products or organizations: Infrastructure created, Manpower trained, Costs of attracting 3 PLs, Software providers
Frequency and Uncertainty

- "Frequency of interactions" between the buyer and supplier is important for reasons of economies of scale
  - To recover the costs of specialized mechanisms created and establishing relations with partner’s network partners
  - For transfer of tacit knowledge in customized exchanges

- "Environmental uncertainty" can come from suppliers, customers, competitors, regulatory agencies, unions, or financial markets, etc
  - The mode of governance used to coordinate partners depends on the sources of uncertainty. High uncertainty recommends hierarchy
Transaction Costs

- Delivery
  - Shipping, Inventory, Asset specific
    - Hard & Soft Infrastructure

- Resource
  - Asset Specific Clusters, Human,
    - Financial, Power, etc.

- Institutions
  - Taxes, Tariffs, SEZs, FTAs,
    - Social groups

- Supply Chain
  - Production, Quality,
    - Transport
  - Coordination Costs
    - Broker fees

Ecosystem Aware
Global Supply Chain Management

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Coordination

- Coordination is to bring different complex activities or organizations into a harmonious relationship.
- The coordination includes
  - For every order, selection of suppliers; assigning functions to them such as what to supply, how is it to be produced (e.g., product tolerances and process standards), the production and delivery schedules, etc
  - Identifying key parameters such as the product specification, the technology and the quality systems, labor and environmental standards along with the targeted price and communicating to the chain partners.
  - Ensuring that all partners follow Governmental and international organizational regulations on product design and manufacture for ensuring consumer safety, environment and child & women labor
Execution : Online Supervisory Control

- 4PLs provide end to end B2B logistics services
- Coordinate all the services needed for the goods transfer
  - Warehousing at Shipper and Distributor Ends
  - Arrange for the trucks all the through the Journey
  - Manages the customs clearance at Ports or Airports
  - Loading and Unloading, Cross Docking, Merge in transit as required
  - Manage all exceptions through a control room: Truck failure, Truck registration, Payments at customs, Driver schedules, Expediting,…..
Governance: Partner selection, Coordination & Execution

Partner Selection

Other Agencies

Execution

Coordination

Order 1


Suppliers

Manufacturers

Distributors

Retailers

Logistics (L)

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Mathematical Models for Design of Governance Mechanisms

- The **partner selection problem** can be formulated as Fuzzy AHP or MIP problem. One can rank order the suppliers for each component based on the ecosystem parameters based on TCE.
- Coordination, scheduling problems can be solved using Optimization techniques.
- Expert systems, Decision support systems, Case based reasoning and Hybrid control systems are useful for **Exception Management and Execution**
Conclusions

- Dispersed Small Player Service/ Supply networks require help for Formation, Governance, Coordination and Execution for efficient & profitable product/service delivery.
- Identifying and managing relations with government, trade, social groups, labour, resources and B2B and B2C delivery mechanisms are required capabilities.
- Implementation of the Governance needs sensor networks, big data management, cloud computing.
- Can be used with advantage for SMEs, Hospitals, Cities, Villages, etc.
- Theory development needs Integration of Social networks, Inter-organizational theory, Machine learning, Optimization, Game theory with SCNs.