***Supply Chain Management***

***Topic 2. Inventory, Logistics, Alliances***

Chapters out of Simchi-Levi Text.

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| **Inventory** | **Logistics** | **Alliances** |
| Chapter 2 | Chapter 7 | Chapters 8,9 |
| \*Inventory Control  -Stochastic Demand  --Continuous Review  --Periodic Review  --Single Period EOQ  \*Inventory Risk Pooling  \*Echelon Inventory  \*ABC Classification | \*Configurations  -Direct Shipment  -Intermediate Shipping  --Warehousing  --Cross-docking  --Transshipment  \*Transportation Modes  -Truck, Air, Rail, Water,  Pipeline | \*Partnerships  -3PL (Third-party Logistics)  -RSP (Retailer-supplier Partnerships)  -DI (Distributor Integration)  \*Outsourcing  -Products  -Components  -e-Markets |

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| **Objectives of Supply Chain Management** |
| Balance “High Service Levels” with “Low Costs”  Emphasize “Continual Improvement” |

Summary for Supply Chain Management

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| **Alliances**. From Simchi-Levi Text, Chapters 8,9. | |
| \*Partnerships  -3PL (Third-party Logistics)  -RSP (Retailer-supplier Partnerships)  -DI (Distributor Integration) | \*Establishing the levels of partnerships define the type of Alliances within a supply chain.  -3PL (Third-party Logistics). Relationship with external partners to the supply chain.  -RSP (Retailer-supplier Partnerships). Relationship between upstream and downstream partners in the supply chain.  -DI (Distributor Integration). Relationship between partners at the same level in the supply chain. |
| \*Outsourcing  -Products  -Components  -e-Markets | \*Securing material or services from external sources.  -Products. Drivers & Risks.  -Components. Criteria & Decision Making.  -e-Markets. Types, Characteristics, Strategies. |

***Supply Chain Management – Alliances & Partnerships***

***Chapter 8***

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| Internal  activities | 🡺 | Acquisitions | 🡺 | Arm’s-length  transactions | 🡺 | Strategic  alliances |

Strategic Alliances: An integration of companies that shares risk & rewards, information & knowledge, capabilities & expertise, goals & growth.

Benefits: Products, Markets, Operations, Technology, Growth, Organizational Skills, Financial strength.

Risks: Jeopardizing differentiating core strengths in the market arena, trade-off between short-term and long-term advantages, drain of expertise due to uneven abilities, changing company emphasis.

Consider three alliances and partnerships: **3PL, RSP, DI**

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| **Third-party Logistics (3PL)**  *Relationship with external partners to the supply chain.* |
| **Retailer-Supplier Partnerships (RSP)**  *Relationship between upstream and downstream partners in the supply chain.* |
| **Distributor Integration (DI)**  *Relationship between partners at the same level in the supply chain.* |

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|  | Arm’s-length  transactions | 🡺 | Strategic  alliances |  |
| **DISCUSSION:**  1. What are challenges between “Arm’s-length” and “Strategic Alliances”?  (e.g., trust, communication, cooperation, etc. )  2. What are conditions that support one stage over the other?  (e.g., internal, external, industry, etc. ) | | | | |

**Third-party Logistics (3PL)**

*Relationship with external partners to the supply chain.*

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| ***Logistic Supplier Relationship*** | 🡪 | ***3PL Alliance*** |
| Transaction-based | Long term |
| Single-function specific | System specific |

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|  | Step 1. Identify drivers and need for 3PL.  Balance focusing on core competencies with loss of control. | | | | | |  |
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|  | Step 2.  Determine alternative 3PL applications.  Where are the most appropriate areas to use 3PL? (B2C,B2B, etc.) | |  |  | Step 3.  Determine scope of 3PL relationship.  How much control will be given away?  What will be the amount of authority and responsibility to the 3PL partner? | |  |
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|  | Step 4. Select partner.  Evaluate the adaptability, reliability, and flexibility of potential partners.  Examine the specialization and competency of potential partners.  Conduct evaluation, negotiation, and selection processes. | | | | | |  |
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|  | Step 5. Implement. Initiate the alliance with care.  Follow project management approach:  Scope, Team, Communications, Change Management, Technical Approach.  Only launch alliance after extensive planning and verification of scope and plan. | | | | | |  |
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| **DISCUSSION:**  1. What are benefits? (e.g., core competencies, cost, efficiency, etc. )  2. What are risks? (e.g., control, branding, intellectual property, etc. )  3. What are potential critical implementation issues?  (e.g., IT, PM, company cultures, etc. ). |

**Retailer-Supplier Partnerships (RSP)**

*Relationship between upstream and downstream partners in the supply chain.*

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| Supplier |  | Retailer |
| VMI | 🡨 EDI 🡨 | POS |

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| RSP | Ownership of Inventory | Inventory Policy Decisions |  | Characteristics: |
| Quick Response | Retailer | Retailer |  | Decrease Lead Time |
| Continuous Replenishment | Shared | Shared |  | Increase Service Level |
| Vendor Managed Inventory | Supplier | Supplier |  | Increase Inventory Turnover |

Requirements:

1. Top Management Commitment
2. Trust & Confidentiality
3. Communication & Cooperation

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| **DISCUSSION:**  1. What are important infrastructures to support RSP?  (e.g., POS, EDI, inventory skills, etc. )  2. How does forecasting skills, inventory control expertise, and logistic capability vary between the three RSPs?  3. Where in the supply chain could each be found?  (e.g., supplier, customer, etc. ) |

**Distributor Integration (DI)**

*Relationship between partners at the same level in the supply chain.*

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|  |  |  |  |  | Distributor |  |  |  |  |  |
|  | Manufacturer | **↔** |  | **↕** | *Inventory*  *Services*  *Information*  *Expertise* | **↕** |  | **↔** | Customer |  |
|  |  |  |  |  | Distributor |  |  |  |  |  |
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Features:

1. Inventory. Provide perception of expanded inventory to satisfy customer needs.
2. Services. Rely on technical ability of other distributors to expand expertise to customers.
3. Information. Increase forecast accuracy. Share customer satisfaction and needs of products and service.
4. Expertise. New product introduction. Education and training.

Risks:

* 1. Not adequate rewards, benefits, and recognition systems to all parties.
  2. Does not allow technical growth of perceived weaker partners.
  3. Imbalance of cooperation within system.

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| **DISCUSSION:**  1. What are major drivers for the consideration and implementation of DIs?  2. What challenges should be considered between DI partners in considering rewards, inequities, compensation, shared objectives, etc.?  3. What types of DIs could exist within a supply chain?  4. How can implementation, management, and governance of DIs address short-term and long-term risks?  5. What short-term and long-term challenges arise with ‘centers of excellence’ strategies within DIs? |

***Supply Chain Management – Outsourcing***

***Chapter 9***

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| ***Procurement of Material***  ***Outsourcing of Functions*** | |
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| ***Advantages*** | ***Disadvantages*** |
| **\*Lower Cost**  **\*Increased Flexibility**  **\*Focus on Core Competencies** | **\*Loss of Control**  **\*Increased Coordination**  **\*Loss of Brand Identification** |

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| **Outsourcing Products**  (*Fine & Whitney*) | | | | | |
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|  |  | *Make/Buy Decision* | Capacity | |  |
|  |  |  | **Capacity Exists** | **Capacity Lacking** |  |
|  | Knowledge | **Knowledge Exists** | *Keep In House*  *(Optimize Control)* | *Outsource*  *(Opportunity*  *to Lower Cost)* |  |
|  | **Knowledge Lacking** | *Outsource*  *(Opportunity to*  *Enhance Quality)* | *Outsource Risky*  *(Why In Business?)* |  |
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| **Outsourcing Components**  (*Fine*) | | | | |
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|  | *Component Criteria* |  |  |  |
|  | Customer Importance | High | Low |  |
|  | Clockspeed | Fast | Slow |  |
|  | Competitive Position | High | Low |  |
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|  | Outsourcing Strategy | **In House** | **Outsource** |  |
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| **Procurement Supply Strategies** |
| Factors in Procurement of Material (*Kraljic*).  \*Profit Impact. Monetary influence on cost, revenue, and growth.  \*Supply Risk. Logistical influence on supply, availability, and service. |

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|  | ***Kraljic’s Supply Matrix*** | | | |  |
|  |  |  | ***Profit Impact*** | |  |
|  |  | Low | High |  |
|  | ***Supply Risk*** | High | **Bottleneck Items**  *(Long-term Contracts)* | **Strategic Items**  *(Top Management Focus)* |  |
|  | Low | **Non-Critical Items**  *(Spot Purchase)* | **Leverage Items**  *(Supply Contracts)* |  |
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| **Supplier Footprint** |
| Two Types of Products (*Fisher*).  \*Functional Product. Slow clockspeed, low demand variability and low profit margins.  \*Innovative Product. Fast clockspeed, high demand variability and high profit margins. |

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|  | **Fisher’s Product Framework** | | |  |
|  | *Criteria* | **Functional Product** | **Innovative Product** |  |
|  | **Product Clockspeed** | Slow | Fast |  |
|  | **Predictable Product Demand** | High | Low |  |
|  | **Product Profit Margins** | Low | High |  |
|  |  | PUSH | PULL |  |
|  | **Strategy** | >Cost< | >Service< |  |
|  |  | Offshoring | Onshoring |  |
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**e-Markets**

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| **Supplier links through e-markets in business-to-business** | | |
| ***Characteristics*** | **🡪** | ***Drivers*** |
| Increased Competition | 🡪 | Lowering Cost |
| Increased Flexibility | 🡪 | Enhance Bidding Capabilities |
| Increased Knowledge | 🡪 | Increased Standardization |
| Increased Value | 🡪 | Supports Strategic Alliances |

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| Monetization.  \*Transaction Fee. Percentage of sale paid by supplier, buyer, or both.  \*Licensing Fee. Vendor licensing capability to access network.  \*Subscription Fee. Market charges membership fee to use the system. |

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| **e-Markets** | **Public** | **Consortium** |  | **Content** | **Private** |
| **Basis** | Competition-based | Buyer Negotiation-  based |  | Supplier Marketing-  based | Collaboration-based |
| **Benefits** | Service  Variety | Standardization  of Services |  | Standardization of  Material  (MRO & Industry-specific) | Control  (Reverse Auction) |
| **Owners** | Supplier  driven | Buyer driven  With Suppliers Collaborated |  | Supplier driven  With Buyers  Collaborated | Buyer  driven |