***Supply Chain Management – Strategy***

🡨 Flow of Information 🡨

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Supplier | 🡪 | Manufacturer | 🡪 | Distributor | 🡪 | Retailer | 🡪 | Customer |

🡪 Flow of Material 🡪

***Design for Logistics***

***Chapter 11***

|  |  |  |
| --- | --- | --- |
| **Design** |  | **Example** |
| Design Supply Chain and Development ChainDesign material and processesDesign logisticsDesign production | 🡪🡪🡪🡪 | PUSH-PULLDesign for LogisticsSupplier IntegrationMass Customization |

**Design Supply Chain and Development Chain**

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| --- | --- | --- |
| Chain Design | 🡪 | Drivers |
| Supply Chain |  | >Demand uncertainty>Economies of scale>Lead time |
| Development Chain |  | >Product/technology clockspeed. Project Introduction. Innovative product vs. Functional product>Make/buy decisions. Outsourcing Decisions. Modular product vs. Integral product combined with knowledge or capacity.>Product structure (Design for logistics). Packaging, parallel processing, standardization. |

**Supply Chain**. Push vs. Pull

|  |  |
| --- | --- |
| Demand uncertainty: Economies of scale: Lead time: | High uncertainty (PULL) vs. Low uncertainty (PUSH)Low dependence (PULL) vs. High dependence (PUSH)Short lead times (PULL) vs. Long lead times (PUSH) |

**Development Chain**. Innovative (Modular) vs. Functional (Integral)

|  |  |
| --- | --- |
| Clockspeed:  | Innovative (Fast) vs. Functional (Slow) |
| Project Variety: | Innovative (High) vs. Functional (Low) |
| Profit Margins: | Innovative (High) vs. Functional (Low) |

**Product Design**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  | Demand Uncertainty |  | Examples1. Cell Phones2. PC & Fashion3. Furniture & Tires 4. Pasta & Diapers |
|  | Characteristics |  | Low | High |  |
|  | Clockspeed | Designs | PUSH | PULL |  |
|  | Fast | Modular | 1 | 2 |  |
|  | Slow | Integral | 4 | 3 |  |
|  |  |

***Design for Logistics (DFL) – Inventory, Transportation***

Packaging.

 >Design dimensions to reduce space.

 >Design product for delayed packaging to support cross-docking.

Parallel processing.

 >Translate series functions to parallel functions.

 >Decouple processes to support parallel functions.

Standardization.

 >Aggregate demand to support risk pooling and economies of scale.

 >Create modularity. Create a modular product and/or modular process.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Standardization*** | Process NOT Modular |  |  | Modular Process |
| Modular Product | Part Standardization | 1 | 2 | Process Standardization |
| Product NOT Modular | Product Standardization | 3 | 4 | Procurement Standardization |

1. Part Standardization.

 >Commonality

2. Process Standardization.

 >Postponement or Delayed Product Differentiation.

 >Process re-sequencing to support postponement.

 >Modularity of products through re-sequencing of processes to support postponement.

3. Product Standardization.

 >Downward substitution.

 >Super product design.

4. Procurement Standardization.

 >Equipment procurement to meet multiple internal process needs.

|  |
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| Where would PUSH-PULL boundary occur? What are Drivers for location?How does Outsourcing correspond to DFL? |

**Extend production system design to “Mass Customization”**

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| --- | --- | --- | --- | --- | --- | --- |
| Craft production |  |  |  |  |  | IncreasedVariety and Service |
|  |  |  |  |  |
|  |  |  | Mass customization |  |  |  |
|  |  |  |  |  | DecreasedCost and Time to market |
| Mass production |  |  |  |  |  |
|  |  |  |  |  |  |

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| Where would these attributes be most effective in supporting mass customization? *Instantaneousness – Costless – Seamless – Frictionless* |