***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 Chain  Design material and processes  Design logistics  Design production | 🡪  🡪  🡪  🡪 | PUSH-PULL  Design for Logistics  Supplier Integration  Mass 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

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| --- | --- |
| 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)

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

**Product Design**

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| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Demand Uncertainty | |  | Examples  1. Cell Phones  2. PC & Fashion  3. 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.

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| ***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 |  |  |  |  |  | Increased  Variety and Service |
|  |  |  |  |  |
|  |  |  | Mass customization |  |  |  |
|  |  |  |  |  | Decreased  Cost 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* |