***Supply Chain Management – Strategy***

***PUSH-PULL Strategies***

***Chapter 6***

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 🡨 Flow of Information 🡨 | | | | | | | | |  |
|  | Supplier | 🡪 | Manufacturer | 🡪 | Distributor | 🡪 | Retailer | 🡪 | Customer |  |
|  | 🡪 Flow of Material 🡪 | | | | | | | | |  |

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| **PUSH-PULL Strategies**  **Chapter 6.** |
| *Integrating PUSH and PULL design strategies*  *throughout the supply chain.* |

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| PULL system. Dependent on actual (realized) demand. Dependent on system status.  PUSH system. Dependent on forecasted demand. Not dependent on system status.  PUSH–PULL Boundary. Position in the supply chain where PUSH and PULL characteristics meet.  Factors in implementing a system strategy include demand uncertainty, economies of scale, lead time, complexity of the supply chain structure, and the focus of the enterprise. |

***Characteristics of PUSH and PULL strategies.***

|  |  |  |
| --- | --- | --- |
| PUSH | 🡨 Strategy 🡪 | PULL |
| Low demand uncertainty  🡪 forecasted demand | Demand Uncertainty | High demand uncertainty  🡪 realized demand |
| High dependence | Economies of Scale | Low dependence |
| Long lead times | Lead Time | Short lead times |
| Complex | Supply Chain Structure | Simple |
| Cost  🡪 advanced planning  (efficient & lean systems) | Focus | Service  🡪 order fulfillment  (flexible & responsive systems) |

***Indication for PUSH–PULL boundary***

|  |  |  |
| --- | --- | --- |
| PUSH | Boundary | PULL |
|  |  |  |
| Supply chain planning 🡨 | Buffer Inventory | 🡪 Order fulfillment |
|  | *Integration using* |  |
|  | Forecasted Demand |  |
|  |  |  |

***Indications for PUSH-PULL & PULL-PUSH Strategies***

|  |  |  |
| --- | --- | --- |
| PUSH | ***Indication for PUSH–PULL strategy***  ***(e.g., Postponement)*** | PULL |
| Low demand uncertainty  🡪 forecasted demand |  |  |
|  | Upstream PUSH🡨🡪PULL Downstream  ( Continuous Replenishment )  (EDI with POS) |  |
|  |  | Short lead times |

|  |  |  |
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| PULL | ***Indication for PULL–PUSH strategy.***  ***(e.g., Separable, Nested, Integrated)*** | PUSH |
|  |  | Long lead times |
|  | Upstream PULL🡨🡪PUSH Downstream  ( Inventory Positioning )  🡨Upstream Production Strategy (PULL)  (PUSH) Downstream Distribution Strategy🡪  (Strategic safety stock) |  |
| High demand uncertainty  🡪 realized demand |  |  |

***Indication for PUSH–PULL boundary***

|  |  |  |
| --- | --- | --- |
| PUSH | Boundary | PULL |
|  |  |  |
| Supply chain planning 🡨 | Buffer Inventory | 🡪 Order fulfillment |
|  | *Integration using* |  |
|  | Forecasted Demand |  |
|  |  |  |

***Supply Chain Strategies: Demand Uncertainty & Economies of Scale***

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|  |  |  | | |  |  |
|  | Demand Uncertainty | High | PULL🡪 | I  Computer | II  Furniture |  |
|  | Low | PUSH🡪 | IV  Books & CDs | III  Grocery |  |
|  |  |  |  | PULL | PUSH |  |
|  |  |  |  | Low | High |  |
|  |  |  |  | Economies of Scale | |  |
|  |  |  |  |  |  |  |

***Supply Chain Strategies: Demand Uncertainty & Lead Time***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | | |  |  |
|  | Demand Uncertainty | High | PULL🡪 | Pull  A | Inventory  Positioning  D |  |
|  | Low | PUSH🡪 | Continuous  Replenishment  C | Push  B |  |
|  |  |  |  | PULL | PUSH |  |
|  |  |  |  | Short | Long |  |
|  |  |  |  | Lead Time | |  |
|  |  |  |  |  |  |  |

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| ***PUSH and PULL Strategies driven by “Demand” and “Lead Time”***  ***that impact “Cost” and “Service”*** | |
| **Demand** | **Lead Time** |
| Aggregated demand lowers error through ‘law of large numbers’ that lowers standard deviation.  Inter-demand forecasts to support supply chain strategies between stages. | Lower lead times traditionally support enhanced order fulfillment, customer service, and PULL. |
| Demand shaping, lowers error through ‘cause and effect’ that focuses on critical factors.  Intra-demand forecasts to support supply chain strategies within stages. | Greater lead times traditionally support enhanced economies of scale, lower cost, and PUSH. |
|  | |
| ***Balancing Supply and Demand with Supply Chain Strategies***  ***can be addressed through e-business capabilities.***  ( e-commerce, e-procurement, e-fulfillment, etc. )  ( B2B , B2C ) | |