Date :

Issues to Address when taking expansion decision:

Country level	Region level	City level	Product level
- Political Stability	- Infrastructure	- living cost	- Customer Presence
- Govt. Policies	- Labour Availability	- Wages	- Raw Material
- Tax Cuts	- Logistics	- Setup Cost	- Suppliers
- Currency Volatility	- Language		
- Currency Convertibility	- technology		
- Govt. laws	- Industrialization		
	- Skill of labour		

Currency: Convertibility, Volatility, Pegging

Bull Whip Effect → when end demand is hit (goes down), the entire chain sees effects with lag, and with greater variation.

Date :

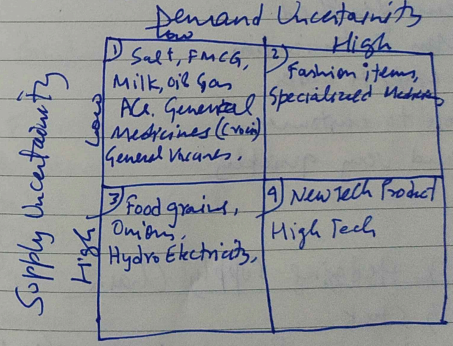
Israel

Jordan
- Skilled Labor ↓
- Security ↓
- Asian Customers ↓
- Middle ↓
- US synergy ↑
- Supplier Base ↑
- Cheap labour ↑
- Govt friendly ↑

Singapore
- Living Cost ↑
- Island ↑ (Transportation Cost)

China
- Costs is less ↑
- Labour ↑
- Customs Proximity ↑
- Supplier Base ↑ (Since a competitor is already there)
- IP issues ↓
- Copying ↓

Design of Supply chains:

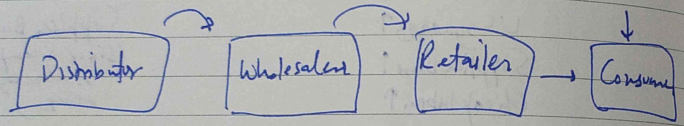


Date :

For 1 :

Efficient Supply Chain

- Coordinated
- Information sharing



For 2 :

Responsive Supply Chain

- semi finished
- Mass Customization
- Make to order
- Be close to customer
- Respond very quickly

For 3 :

Risk Hedging Supply Chain

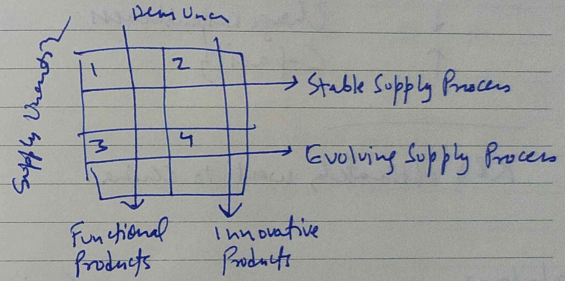
- Safety stock
- Alternatives or Backup Suppliers (Multiple)

Date :

For 4 :

Agile Supply Chain

Combine Strategies from basket 2 & 3 to address 4th quadrant.



Points of Comparision :

	Functional Products	Innovative Products
-	Demand Uncertainty	↑
-	Product Life Cycle	↓
-	Obsolescence	↑
-	Profit Margin	↑
-	Stockout	↑
-	Inventory holding Cost	↑
-	Volume per SKU	↓

Date :

Stable	Parameter	Evolving
↓	Breakdown	↑
↓	Quality Issues	↑
↑	Lead time Predictability	↓
↑	Supply Sources	↓
↑	Standardisation	↓
↓	Change Responsiveness	↑
↑	Capacity	↓

KBS ultimately want to China.

7/2/2021 — Session 3 & 4

Watch Update Version Decision Making :
Refer PPT as well
14 decisions to chose from.
Look at all case facts, cost and sales data and take a decision.
There are 3 suppliers as well. You place quarterly orders. End of every quarter, place order for next quarter.

Refer excel also.

Date :

Placing order for first quarter (Refer Excel) :

	Jan	Feb	Mar	Apri	May	June
Wayne	60	60	60			
Chopra		60	60	60		
Carl & Son				50	50	50
Total	60	120	120	110	50	50

Group 19 : My score 30% Profit Margin
Profit = 2,15,355 $

Profit = Price x Sales — Total Cost
= U.Price x Units — U Variable Cost x Units - FC
(U.Price x Units − U Variable Cost x Units = Total Contribution)
FC : Fixed Cost is Sunk Cost

Look at Contribution per Unit and [not] profit per unit

Unit Contribution = Unit Price − Unit Variable Cost

Date :

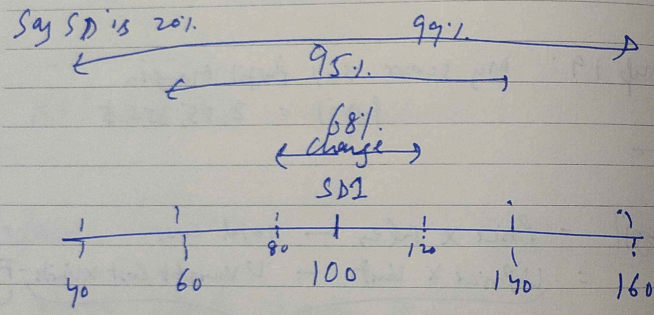
Standard Deviation:

68 - 95 - 99 rule

68% change that you will be in 1 SD

95% change in SD2

99% change SD3



Two Risks:

1) Idiosyncratic Risk → specific to Supplier

2) Systematic Risk → Everyone facing the same risk coming from System.

Date :

Takeaways from activity:

1) Unit Cost v/s Unit Profit - Contri matters

2) Fixed Cost ← no role

3) Past trend → future ← trends (extrapolation)
episodes (uncertainity)

4) De risk - Idiosyncratic - diversify supplier
Systematic - keep Buffer

5) Trade offs - Holding cost v/s Opportunity cost

6) SD → The 68-95-99 rule - allows to interpret mean and SD.

Date : 13/02/2021

Supply Chain Management

Prof. Ankur Singh

Case Study : Mars Incorporated
Procurement Process Optimization

Current issues :

1) Cost Reduction
2) Variation in Lots
3) Reduce Negotiation time
4) Too many suppliers
5) Not transparent process
6) Unable to create competition among suppliers

Procurement of 4 Billion$ annually. Huge

Types of Auctions : (Strategies → English & Dutch)
(not blind) (is blind)

1) English Auction (You Sell) – The traditional hammer bang for highest bid. Transparent
2) English Reverse Auction (You Buy) – The one who bids the least, wins. Tender process, kind of.
3) Dutch Flower Auction – ~~Put a clock~~. Put a clock. Start from Scr. Then it starts coming down in value. 4.9, 4.8, 4.7 and so on. Whoever presses the buzzer first, gets the process. It's a quick auction. As a participant, you don't know what other participants are thinking. You stay in foresume.

Date :

4) Sealed First Price Auction – You make bid in a sealed envelope. Here, the players cant know each other's strategy. Its somewhat like Dutch Flower Auction.

Few Firms make Sealed First Price Auction as a filter to get bottom 3 prices. Then they make these 3 to go through reverse auction.
↓
Dutch Reverse Auction.

Strategies for an Auctioneer :

1) **Winner's Choice**
- After finding bid winner, we ask him how much he wants, sell accordingly and start again for rest of items.
This is multiple times same work, time consuming.
But gives more profitability.

2) **Winna takes all** (Gives)
- After finding bid winner, all stuff is sold to winner.
Winner compulsorily takes all.

Date :

Mars is looking for a variety of packaging auctions.

Mars Requirement:

Constraint:
1) Choose supplies in such a way, so that all products get supplied. Oversupply is not a problem.

Objective
2) At the least possible cost.

Mars is looking at bundles. A combination. It is called as Combinatorial Auction.

This will help achieve "Economies of scale"

Refer Excel for solver and optimization.

Industry grade solvers: CPLEX, GUROBI