

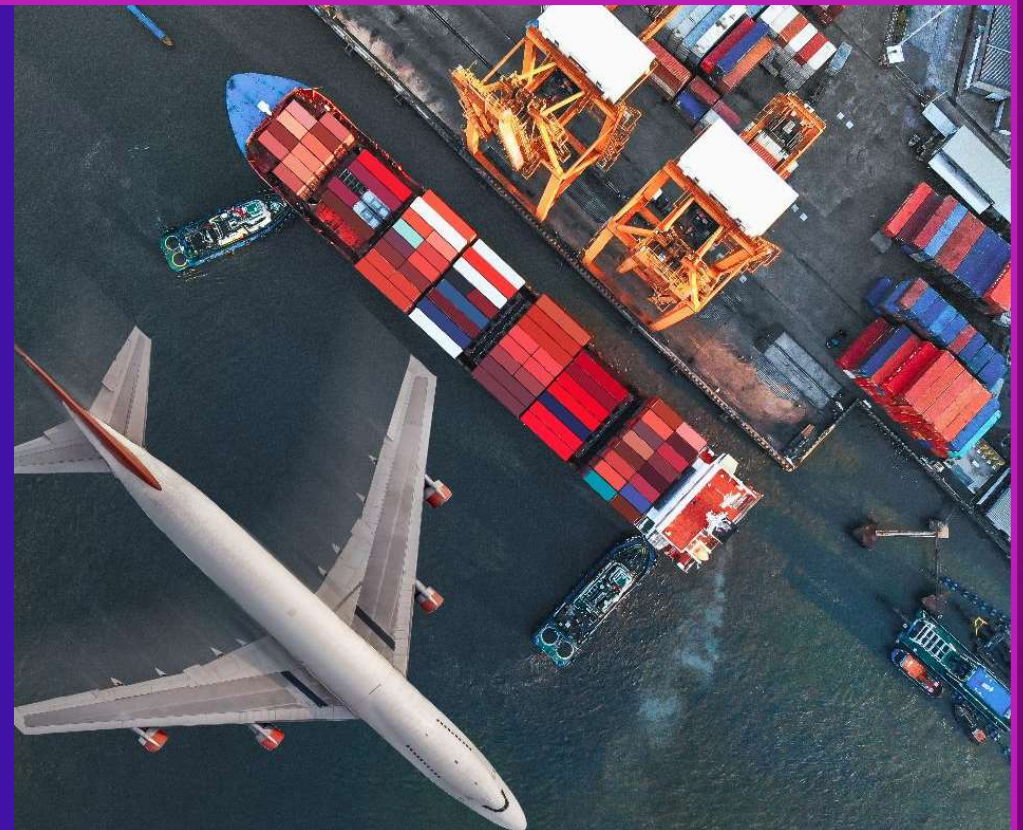
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The COVID-19 Pandemic Impact on Global Supply Chains

Getting the basics right

May 15, 2020

nexdigm.com



SPEAKERS



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AGENDA

- Global supply chain fundamentals and design considerations
- Global supply chain interruptions and negative business impacts
- Lessons learned from the recent pandemic
- Anonymous Polling – please participate
- Q&A

POLL

In light of the current pandemic, please select your current location from which you are viewing today's webinar:

- A. Company office in USA
- B. Home/Home office in USA
- C. Company office *outside* USA
- D. Home/Home office *outside* USA
- E. Other

GLOBAL SUPPLY CHAIN FUNDAMENTALS AND DESIGN CONSIDERATIONS

5 KEY ELEMENTS OF SUPPLY CHAIN MANAGEMENT

The company manufactures their products or services including the activities necessary for product testing, packaging, and preparing for delivery

Utilization of reliable suppliers to deliver goods and services required for the making of products

Source



Make



Deliver



Set of processes that plans for and controls the efficient and effective transportation and storage of products from suppliers to customers

Plan



Having plans for managing all the resources that go toward meeting customer demand for products or services

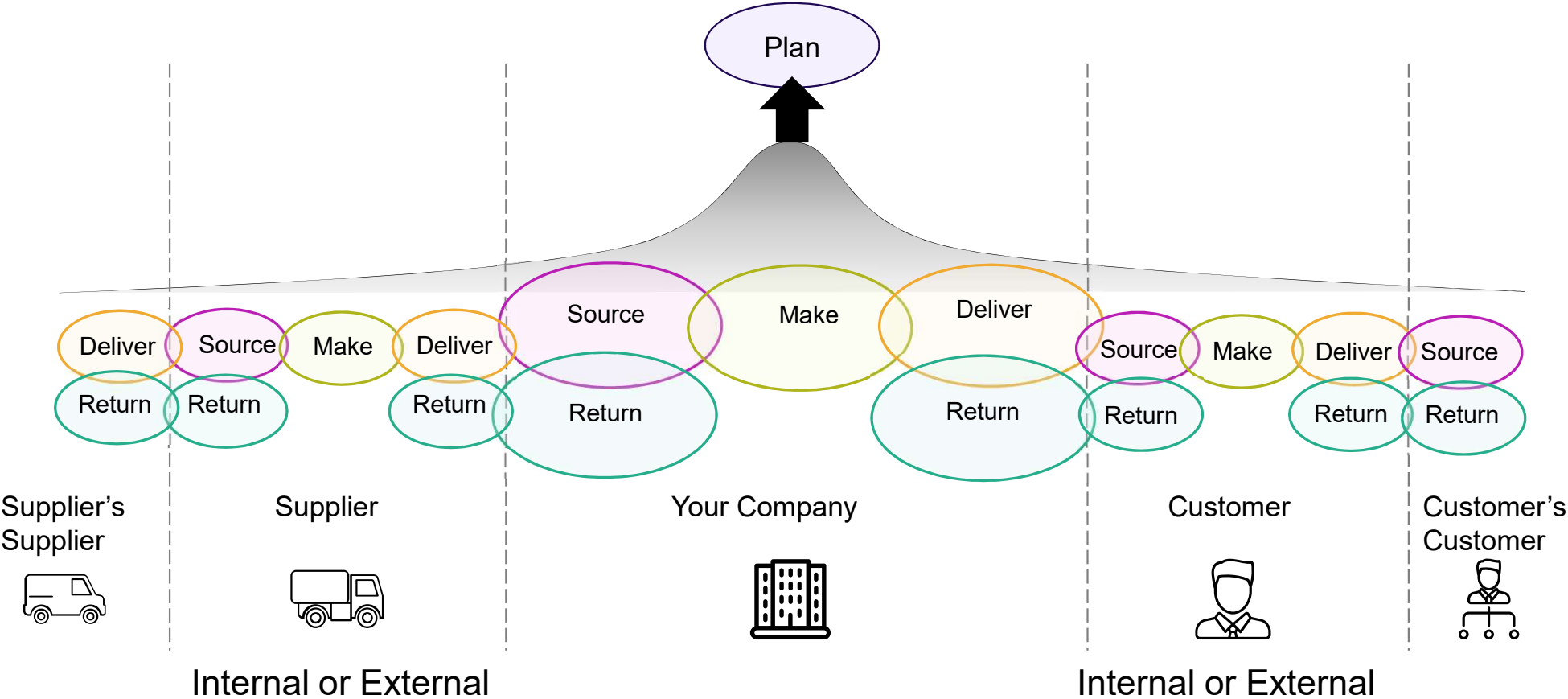


Return



Companies create a network for receiving defective and excess products as well as support customers who have problems with delivered products

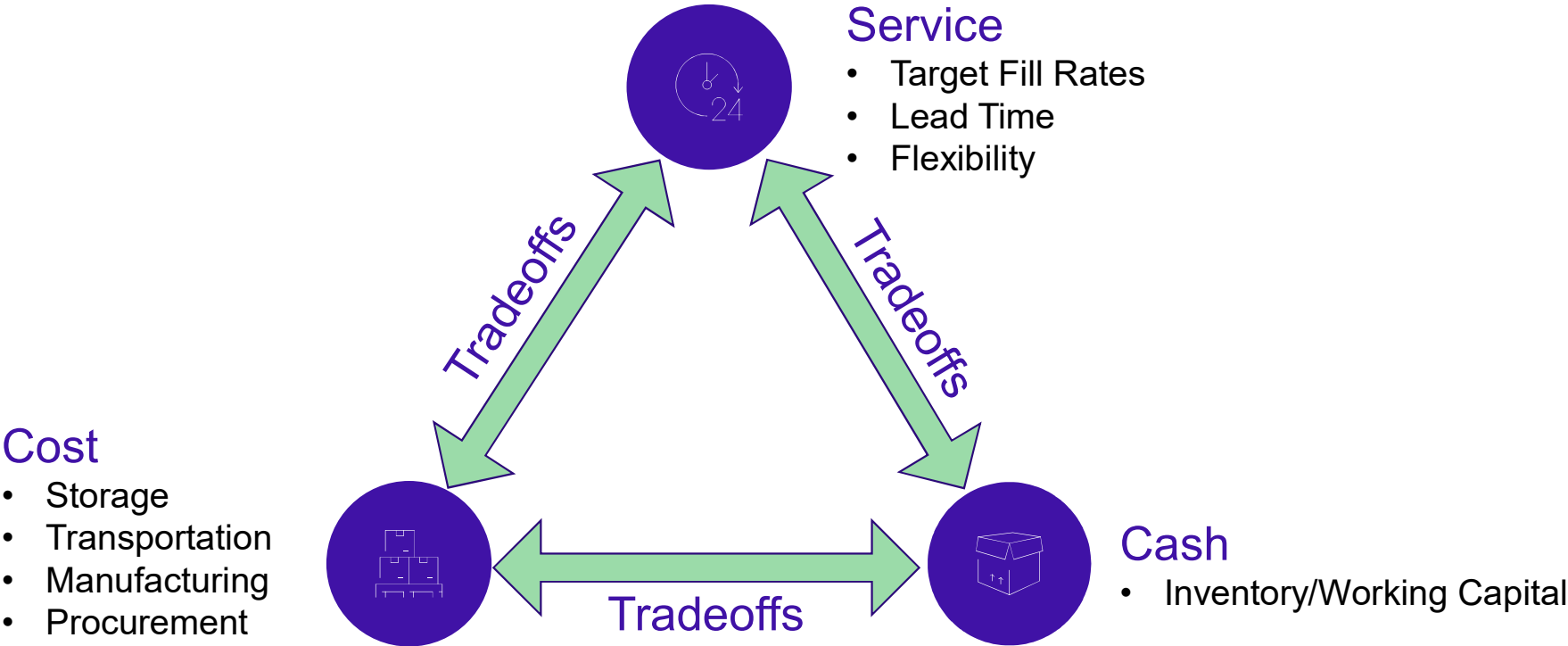
SUPPLY CHAIN OPERATIONS REFERENCE MODEL (SCOR)



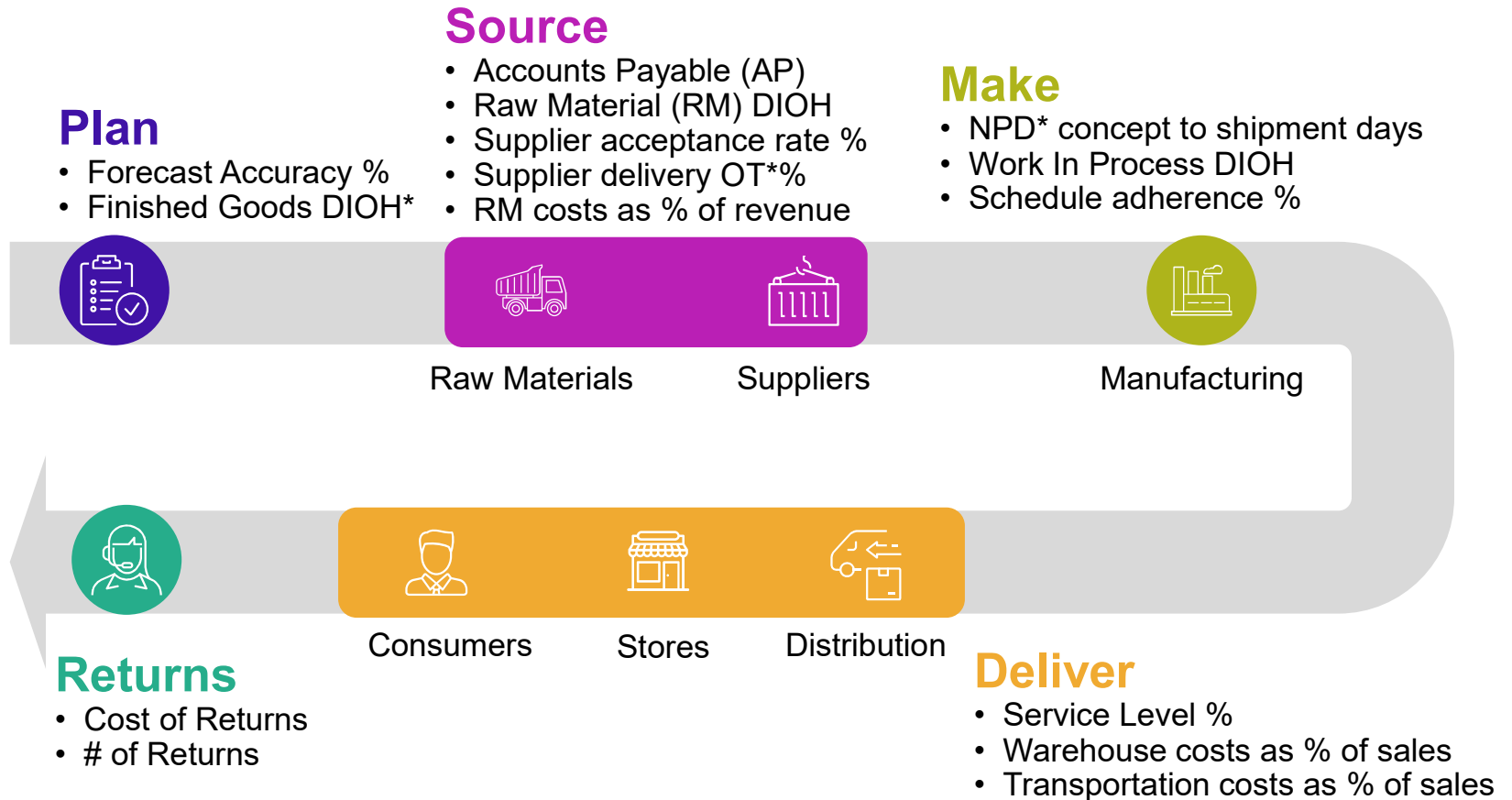
Source: Supply-Chain Council

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SUPPLY CHAIN DESIGN CONSIDERATIONS TRIANGLE



SUPPLY CHAIN PERFORMANCE METRICS



*DIOH - Days' inventory on hand
 *OT - On-Time
 *NPD - New Product Development

SUPPLY CHAIN PERFORMANCE METRICS

Sample AR Dashboard

Main Division	Outstanding	Overdue	DSO (in Days)	Rating
Division 1	\$ 49 M	64%	55	★★★★
Division 2	\$ 33 M	89%	62	★★
Division 3	\$ 35 M	36%	75	★★★
Division 4	\$ 25 M	32%	44	★★★★
Division 5	\$ 47 M	33%	18	★★★★
Total	188	51%	38	★★★★

POLL

Relative to competitors, how does your company use supply chain analytics and management dashboards for decision making?

A. My company does not use any analytics and/or dashboard tools

B. My company is ahead of our competitors

C. My company is no better or worse than our competitors

D. My company is behind our competitors

GLOBAL SUPPLY CHAIN INTERRUPTIONS AND NEGATIVE BUSINESS IMPACTS

TYPICAL SUPPLY CHAIN DISRUPTIONS AND IMPACTS



- End user demand significantly exceeds forecast, consumes safety stock, and service levels are negatively impacted, and sales may be lost
- End user demand significantly less than forecast, excess stock increases storage costs and product obsolescence exposure



- Receipt of manufactured or procured materials is significantly less than planned
- Missed production schedules
- Service levels are negatively impacted
- Increased costs due to expediting



- Storage and order fulfillment facility disabled, service levels are negatively impacted, and sales may be lost
- Transportation disruption delaying flows of raw material and finished goods
- Inefficiency in manufacturing and service levels are negatively impacted

IMPACT OF SPIKES IN DEMAND ON SUPPLY CHAINS

Bullwhip Effect



Customers: Abrupt increase in the order quantity by the customers



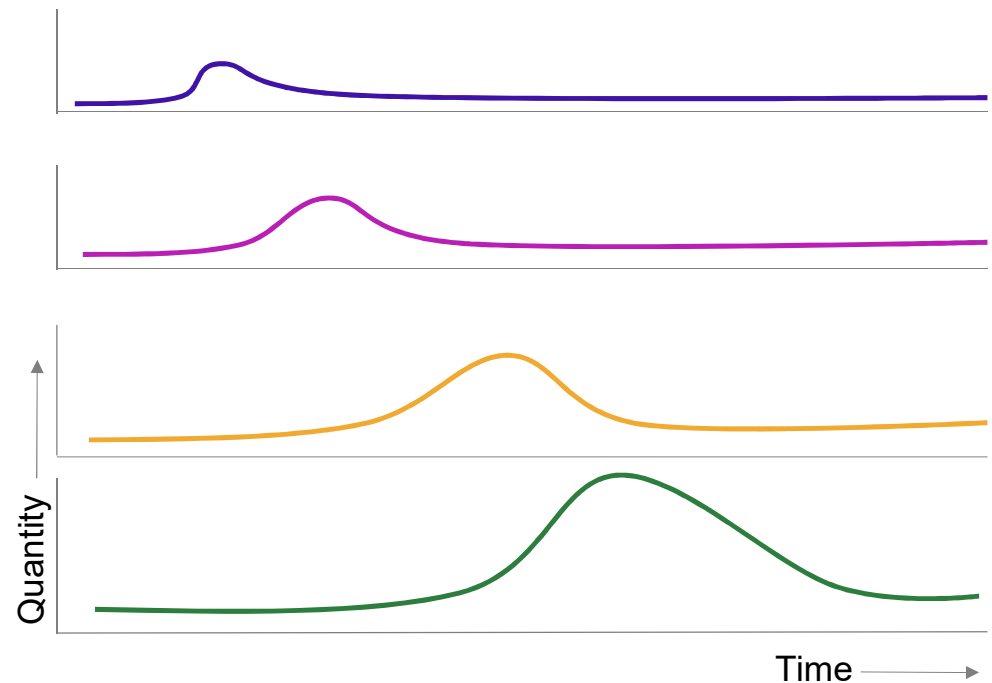
Warehouse: Jump in the orders placed with the warehouse



Distribution Center: Spike in the orders received from the warehouse



Plant/Supplier: Multifold increase of orders from the distribution center



Reactionary buying behaviors lead to a bullwhip effect across the supply chain

POLL

Given the impact of the recent pandemic, how likely are you to make significant design changes to mitigate future interruptions?

A. Very Likely

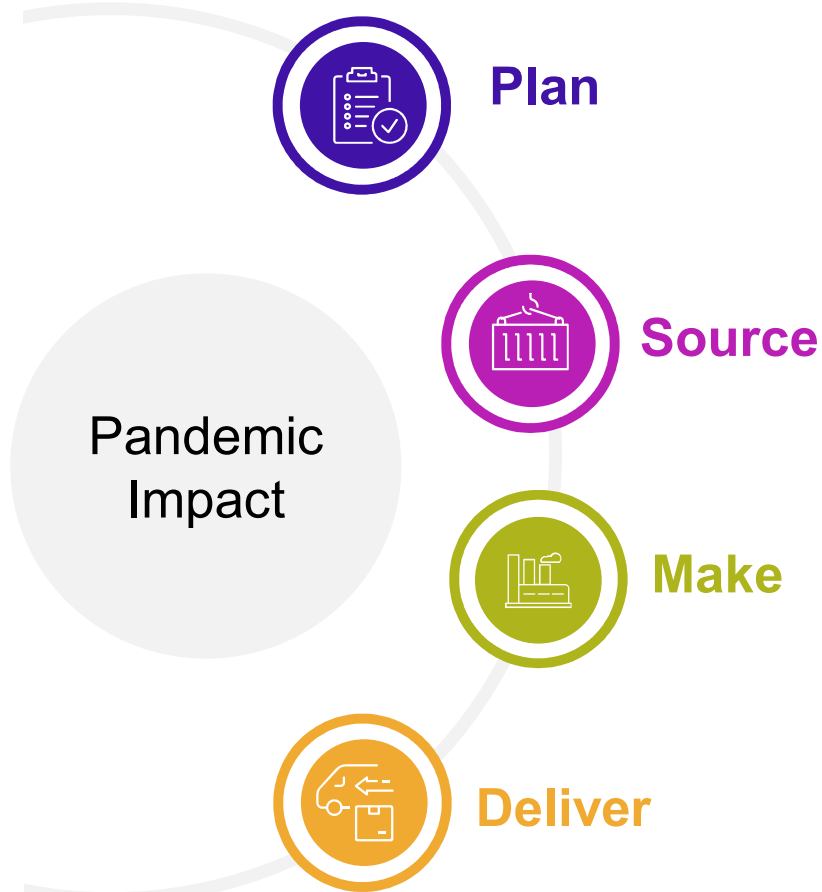
B. Likely

C. Unlikely

D. Very Unlikely

LESSONS LEARNED FROM THE RECENT PANDEMIC

IMPACT OF THE PANDEMIC ON SUPPLY CHAINS



- Halt in sales and marketing activities
- Cancellation or postponement of any new product launches
- Disruption in the services and delivery of e-commerce firms








- Adverse impact on procuring raw materials
- Disruption in imports
- High chances of declaration of force majeure

- Disruption in functioning factories
- Difficulty in workers reaching factories
- Unavailability of skilled workforce

- Adverse effects on products with limited shelf life
- Inventory shortages
- Stoppage in intra and inter state movement

SUPPLY CHAIN LESSONS LEARNED FROM THE PANDEMIC

Sample Risk Assessment Matrix

	How long can you do without?	Impact of doing without?	Vulnerabilities?	Contingency in case of disaster?
 Equipment (IT only)	5 days	After 5 days, no way to schedule production or track orders	No UPS/generator, MD hardware, SPOF SME	Use paper reports for 5 days then go manual for as many members as possible
 Facility	0 days	No production, potential bankruptcy, IT non-existent	Poor maintenance, no perimeter security	Look for warehouse, salvage equipment, file bankruptcy
 Personnel	0 days	Degraded operations, low service levels	Too many SPOF	Best effort shifting of available staff, temps
 Raw Materials	30 days before new deliveries	None until on hand exhausted	Single supplier relationship	Search for alternative supplier
 Transportation	30 days in, 2 days out	No supplies, No deliveries	Location, entrance design	None
 Utilities	0 hours/power 0 hours/water	Extrusion shuts down, waste collected & prepared for grinder, IT non-existent	Single power feed, no generator or backup water supply	None
 Vendors (Sourcing)	4 hours	No call center	Mercy of vendor	Bring in-house

A supply chain risk assessment considering the impact, vulnerabilities, and contingencies in case of a disaster must be conducted with critical business partners

SUPPLY CHAIN LESSONS LEARNED FROM THE PANDEMIC

- Extended and complex supply chains are **inflexible and susceptible to interruptions**
- **Coordination and communication with government entities** is required in times of crisis mitigation
- Specific **scenario-based risk assessments** are needed with all Supply Chain partners
- **National stocking strategies** should be developed for medically critical supplies along with crisis mitigation plans
- Evaluation of **alternative transportation modes** for critical materials

SUMMARY



Global supply chain **fundamentals** and **design considerations**

Conscious supply chain design trade-offs and performance measurement



Global supply chain **interruptions** and **negative business impacts**

Expect issues related to demand, supply and logistics execution



Lessons learned from the recent pandemic

Limits to complex global supply chains and need for scenario-based risk assessments

Q&A

TEAM



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