



Build a Resilient Supply Chain Model

Agenda

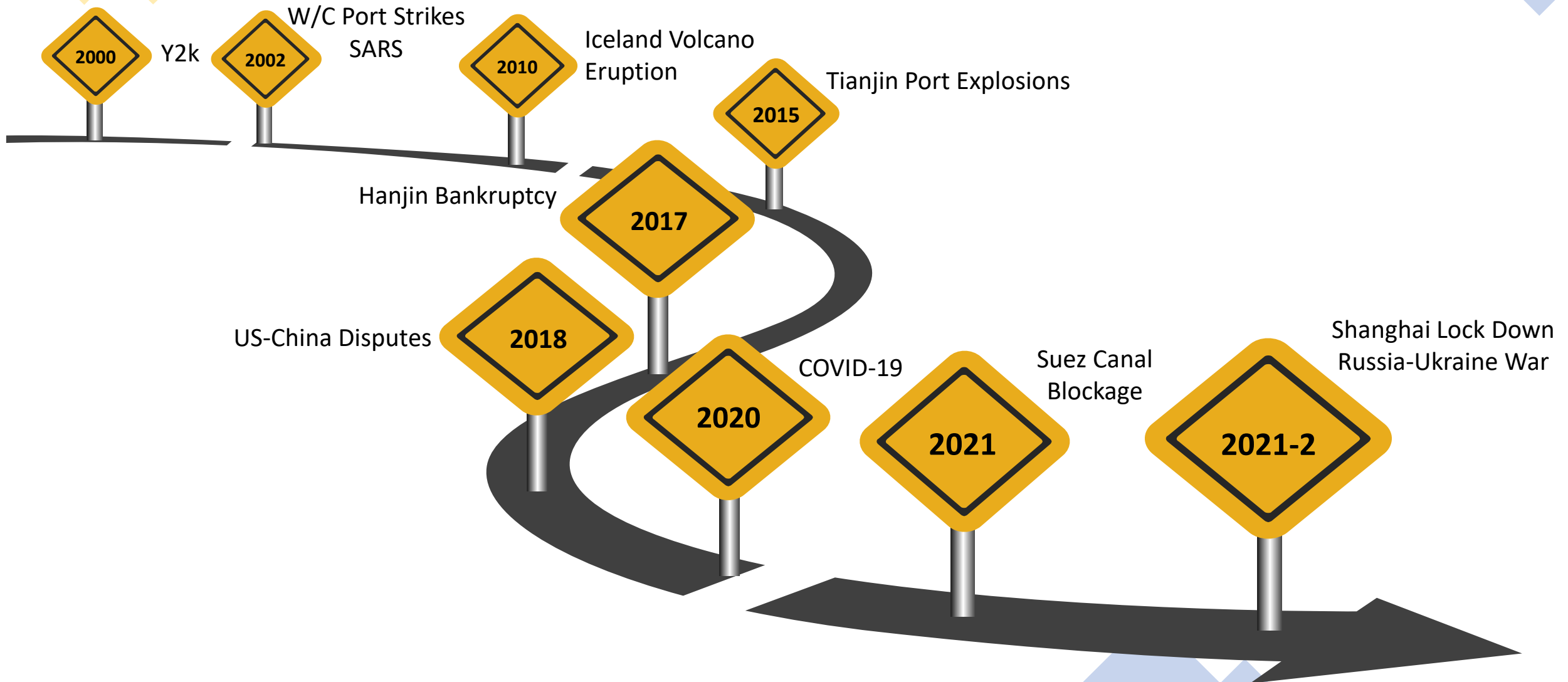
Supply Chain Disruptions

Impacts & Insights

ICE Model



Supply Chain Disruptions



Impacts & Insights

Ad Hoc

- Accidents
- Bankruptcy
- Strikes

Economic

- Recession
- Inflation
- Currency Fluctuations
- Global Energy Shortage
- Volatility in Commodity Prices

Political

- Political Unrest
- Export / Import Restrictions
- Terrorism
- Conflict / War

Environmental

- Natural Disasters
- Extreme Weather
- Pandemic

COVID-19

- Significantly disrupted the balance of Supply & Demand

Russia-Ukraine War

- Oil Price (Inflation)
- Cost & Availability of Raw Materials
- Political Tension (Trade Ban)

Supply Chain Impacts

- Bottlenecks / Backlogs, Port Congestion
- Labors / Components Shortage
- Unstable Schedule
- Violent Freight Rates



Impacts & Insights

New Normal

Adapt ASAP

**Structural
Change**

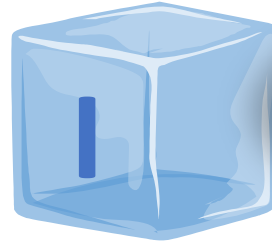
**Collective
Collaborative**

Evolution

Data Driven



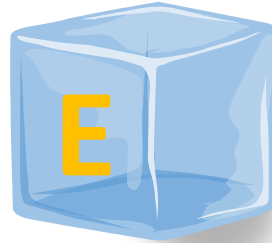
ICE Model



Identify Risks



Construct Agility



Evaluate Consequences

Identify Risks



Global Supply Chain Pressure Index

Risks Management Model



Global Supply Chain Pressure Index

Created by the Federal Reserve Bank of New York

Take Variables from a bundle of indices

Evaluate Global Supply Chain using Transportation & Manufacturing Data

Meant to help policymakers, businesses, and consumers understand the state of GSC

Global Supply Chain Pressure Index



Baltic Dry Index: Raw Material Shipping Costs



Harpex Index: Container shipping prices



US BLS Import/Export & In/Outbound Air Freight Indices:
Air freight Prices to & from US

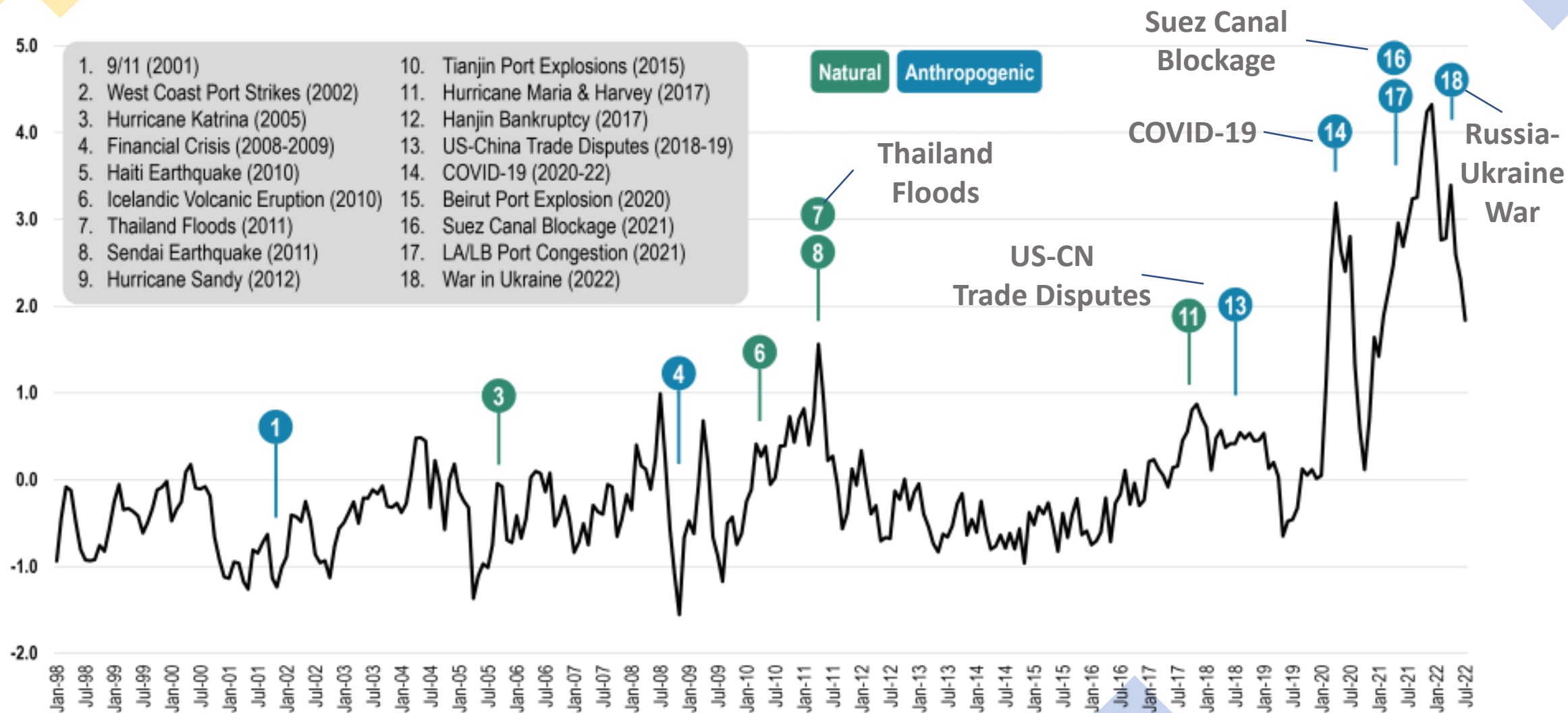


Purchasing Manager Index (PMI) surveys:
Delivery times, Backlogs & Purchased Stocks



Euro Area, China, Japan, South Korea, Taiwan, UK, & US

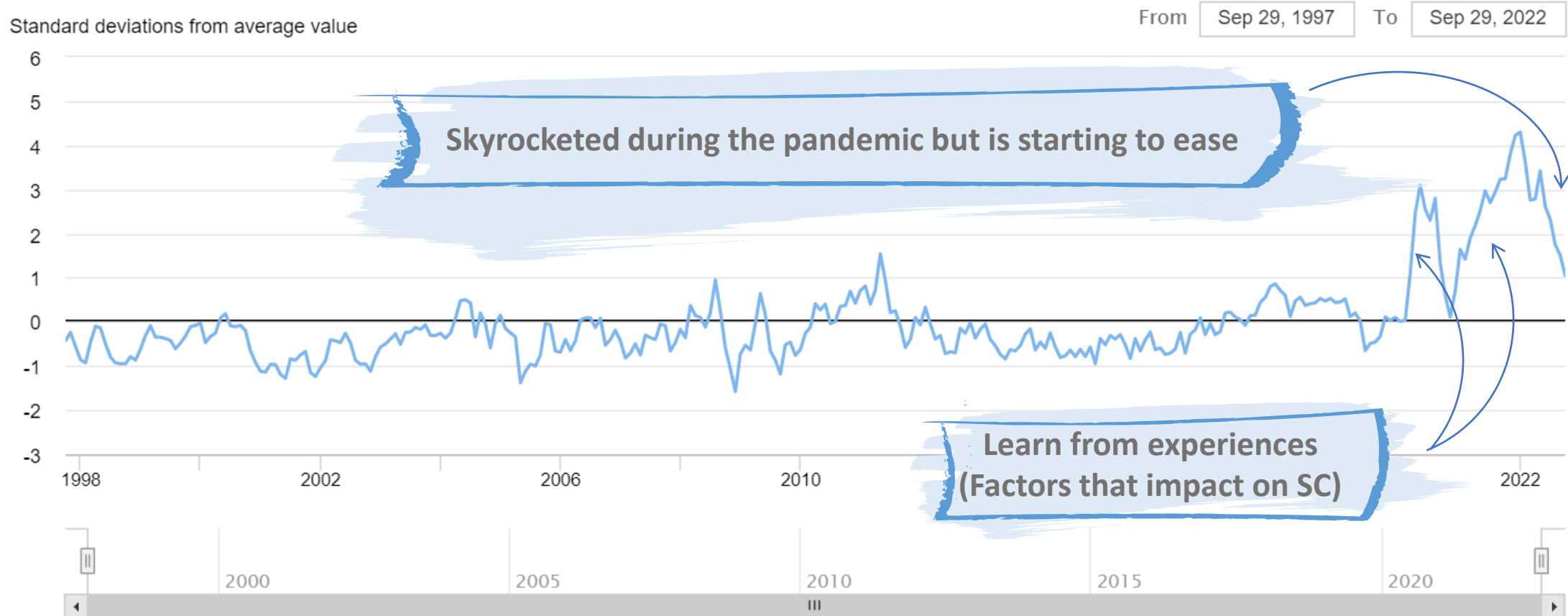
Global Supply Chain Pressure Index



Global Supply Chain Pressure Index

Latest Update September 2022

Enter a date range to see monthly estimates or use the slider below to view a specific date range.



Risks Management Model

Strategic Approach:

- Take Supply Chain as an important aspect in Strategy Formation
- Eliminate silos

Construct an Agile Model:

- Build Resilience Capability
- Simulate Different Scenarios
- Develop the Action / Contingency Plan

Control Tower:

- Keep Monitoring Statuses
- Predict the up Coming Situation
- Evaluate Consequences
- Take Proactive Actions

01

02

03

04

05

06

Understanding the Risks:

- Insights from different indices
- Identify all the possible risks (Trending)
- Define the impacts

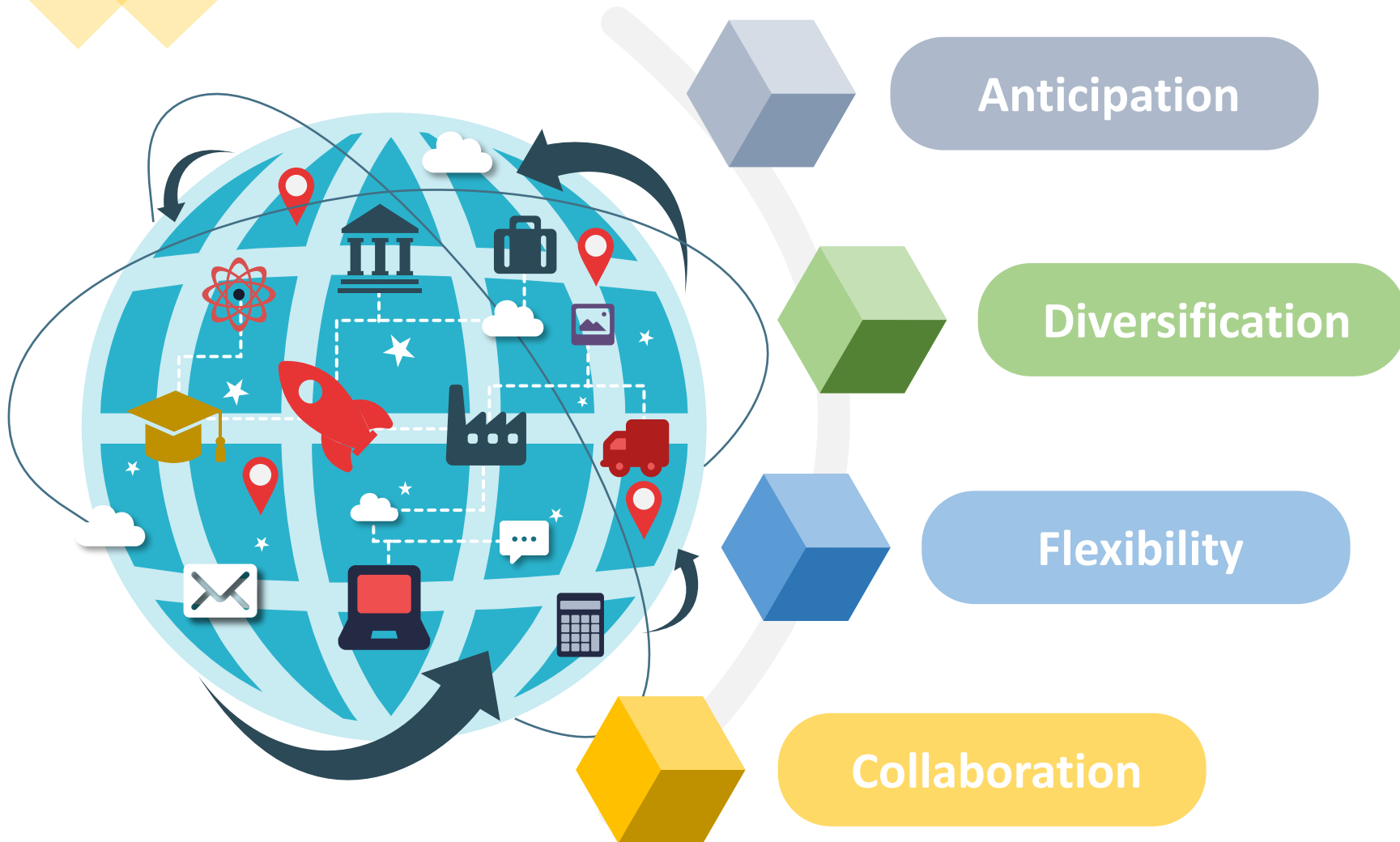
Visibility:

- Develop Platform to access to Risk Signals & E2E Supply Chain Information

Continuous Improvement:

- Review Outcomes Collectively among all Functions and Partners
- Develop Knowhow to Devise Insights from Evaluations and Predictions

Construct Agility





Anticipation

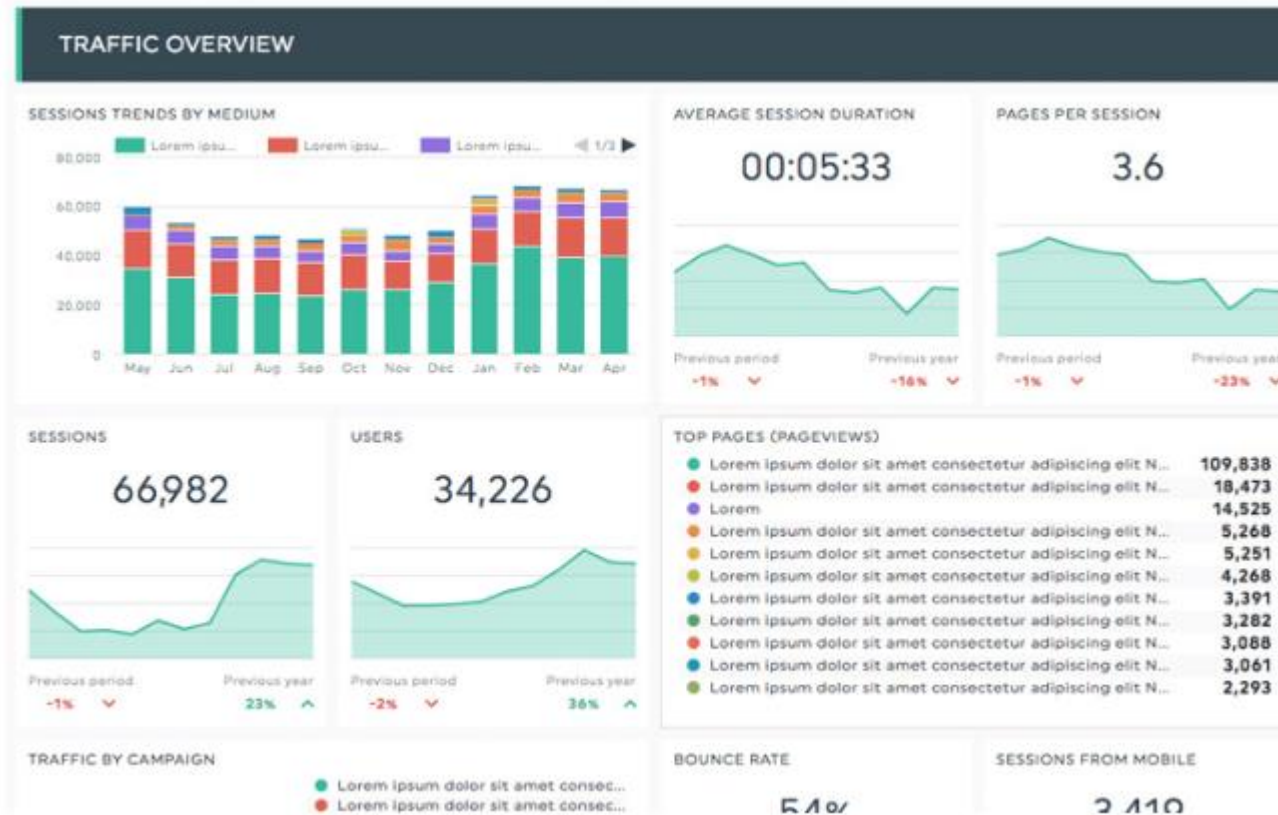
Obtain & Integrate Data from all sources (in a High quality, Timely & Secured matter to facilitate business decisions)

Make use of AI /ML and Big Data (IoT, Media, Web) for Predictive Analysis (Demand Forecasting, Warning Signals & Potential Risks)

Supply Chain Analytics
Google Analytics / Trends

Recognize of Opportunities with Business Intelligence (Change in Consumer Behaviour, Political, Regulatory, Environmental Sustainability)

Google Analytics



- **Session & User Data:** Page views, Bounce rate, Pages per session
- **Goal Completions & Conversions:** sales conversions, first vs last interaction
- **Channel Performance:** Traffic Sources /Medium
- **Landing Page Metrics:** Sessions, Conversion Rates, Bounce rates
- **Geographic & Demographic Reports:** City, Country, Age, Gender

Google Trends

Google Trends

Explore topics

Hong Kong

Recently trending

Keep up with the latest trending searches

利物浦	2K+ searches	沙頭角國際學校	1K+ searches
最低工資	1K+ searches		
熱刺	1K+ searches		
Diptyque	1K+ searches		
Eason 演唱會門票	1K+ searches		

LSI Keywords Add Up To Let Google Determine The Topic



- **Search Volume Trends:** more/less popular
- **Related Keywords:** Trending
- **“Breakout Keywords”:** % Growth
- **Uncover Related Topics**
- **Keywords for YouTube Videos**
- **Uncover Local Search Trends**
- **Discover New Keywords Ideas**
- **Tap Into LSI (Latent Sematic Indexing) Keywords**



Diversification

Enhance Products / Services Profile (B2C, B2B)

Develop New Segments / Markets

**Partner with multiple/alternative suppliers
(Nearshoring)**

Enhance Logistics Network & Capability





Flexibility

Enhance Products/Services Modularity, Reconfigurability

**Enable Logistics/Transportation Agility, Multi Sourcing
Locations/Fulfilment Ways**

Adapt New Technology (3D Printing, Automation)

Deploy Action/Business Continuity Plan for Different Disruptions

Modify Operations in response to Challenges or Opportunities






Collaboration

Involve Suppliers / Customers in Innovation & Product Development

Joint Forecasting / Development, Collaborative Decision Making

**Able to work effectively with Partners for Mutual Benefit
(Risk / Gain Sharing)**



Case Study

Suez Canal Blockage

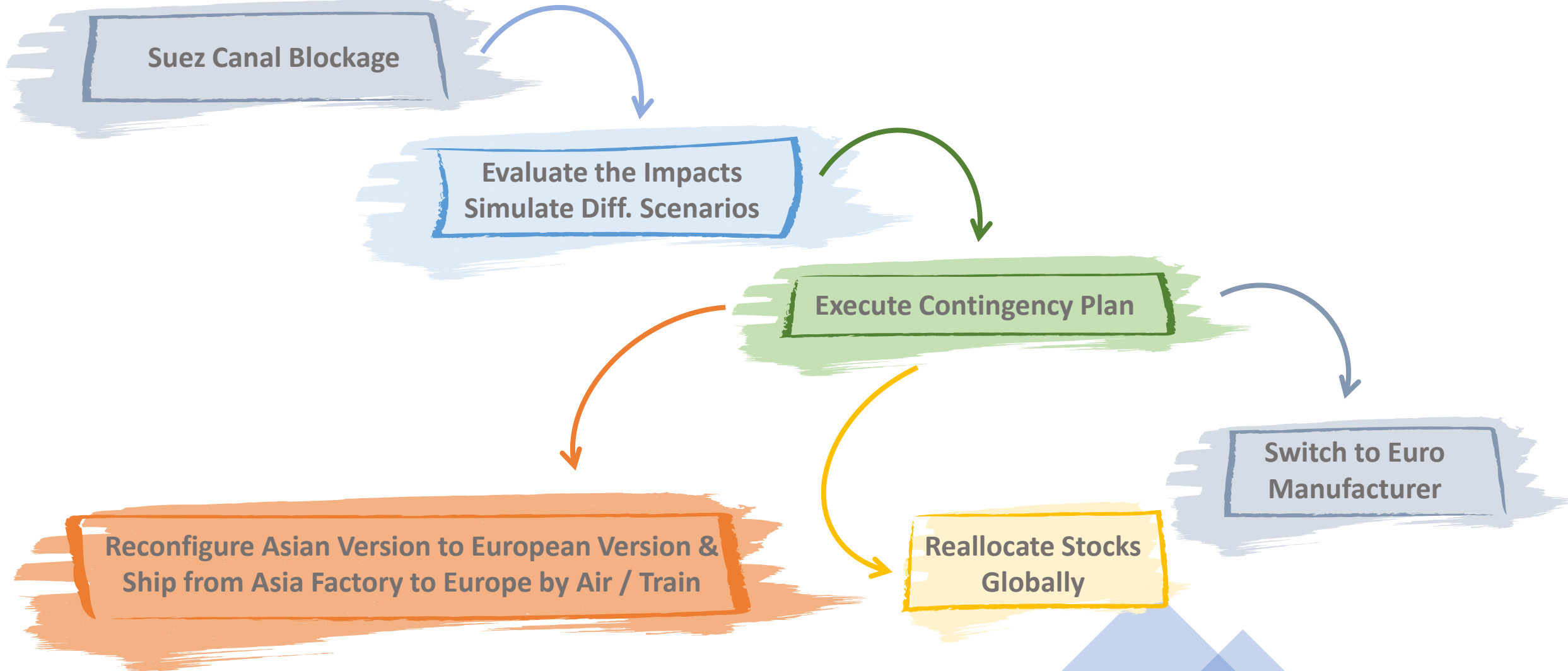
Evaluate the Impacts
Simulate Diff. Scenarios

Execute Contingency Plan

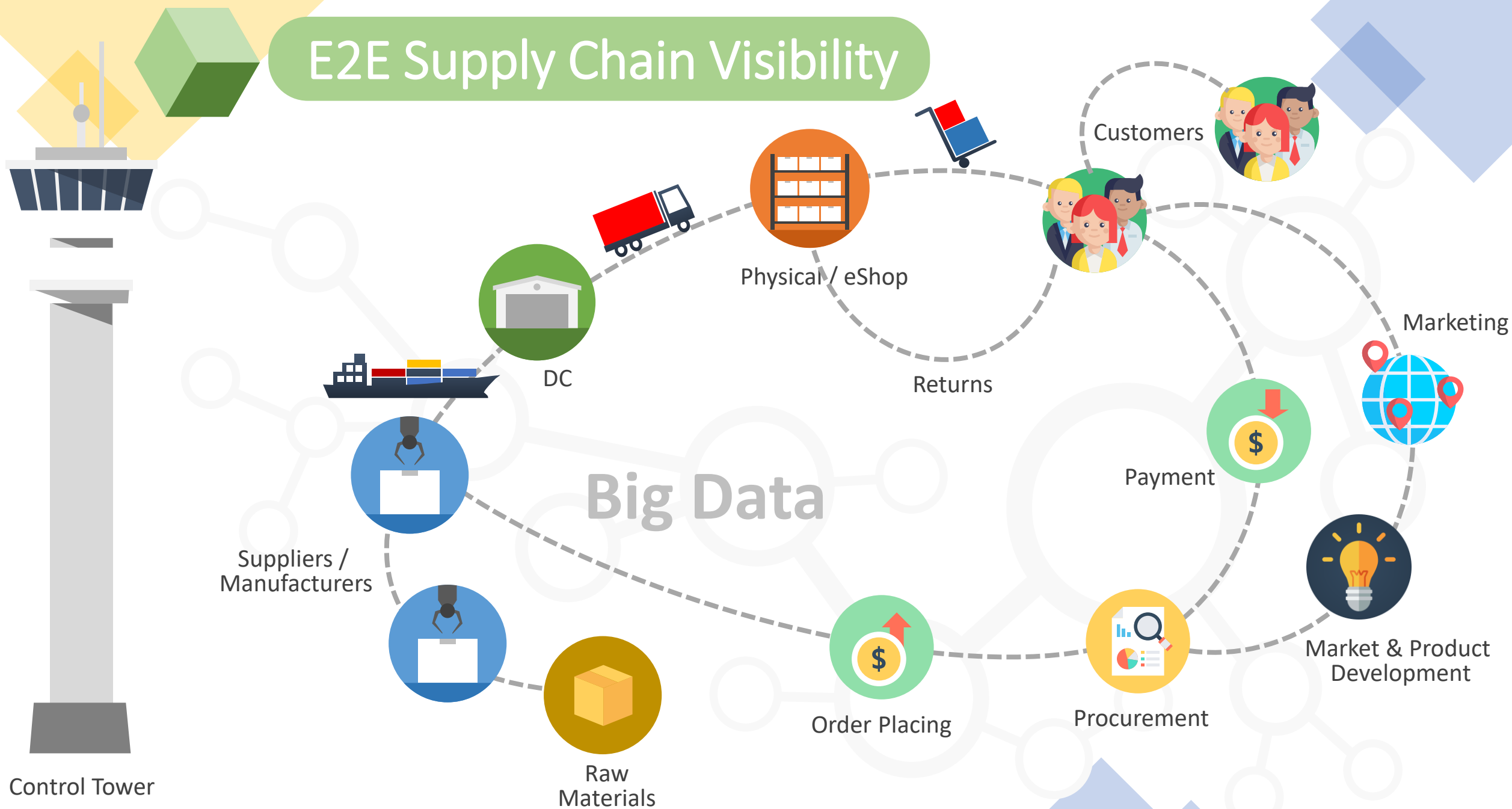
Switch to Euro
Manufacturer

Reconfigure Asian Version to European Version &
Ship from Asia Factory to Europe by Air / Train

Reallocate Stocks
Globally



E2E Supply Chain Visibility





Supply Chain Analytics

- Integrate Data from Internal & External Sources
- Create a Real-Time view of the Key Factors
- Provide a Clear Picture of all Supply Chain Processes
- Spot Misalignments & Disconnection, Disruptions Before Issues Impact
- Analyze Business Processes & Big Data Simultaneously (AI/ML)
- Provide Proactive Solutions & Precise Business Insights – Optimization

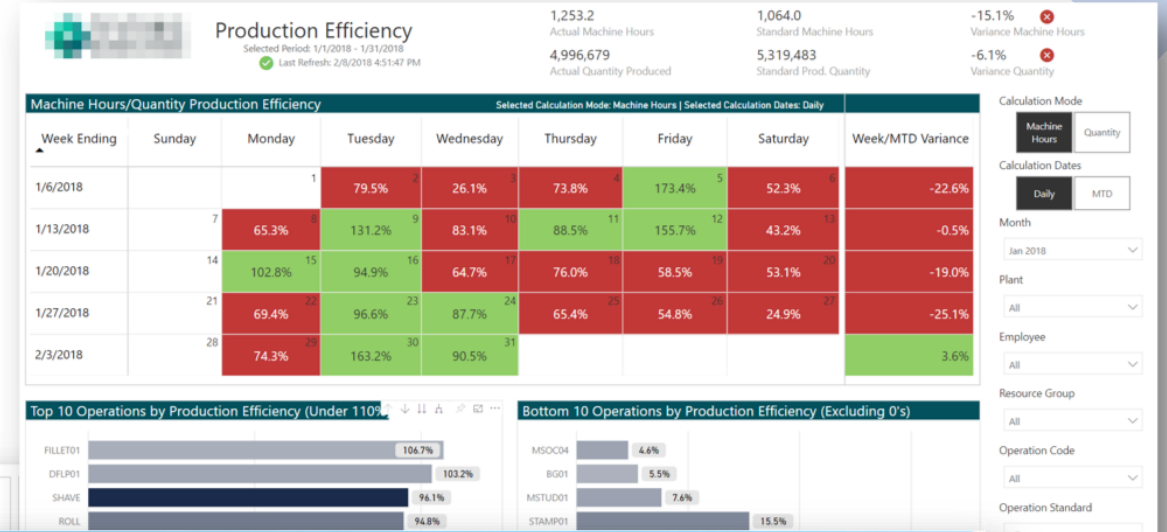
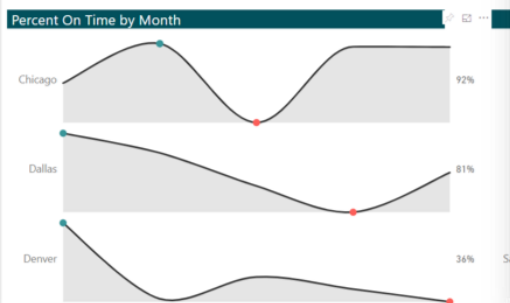
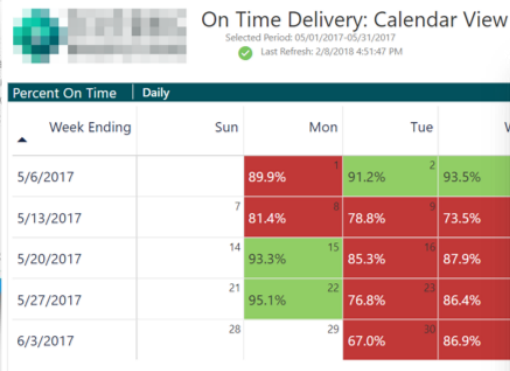
- Spot an Issue & Identify the Consequential Impacts (Supplier Issue - Other Production Lines Down, Shipment Delay, Out of Stock & etc.)
- Simulate Possible Solutions with Costs & Benefits (Reschedule Production, Switch Production, Expediting/Rerouting, Reallocate of Inventory)

Control Tower

- Analyze the Unstable Performance of a Supplier together with External Factors (Regional), Generate Possible Solutions (Order/Product Adjustment, Alternative Sources)
Automate Demand Planning based on Trending, Seasonality, Lead Time and other Internal Factors (Warehouse Capacity) and External Factors (Weather/Inflation)

Predictive Analytics

Dashboard



Dashboard

Transportation

Demand
Planning

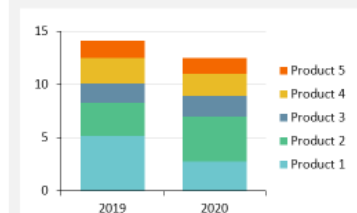
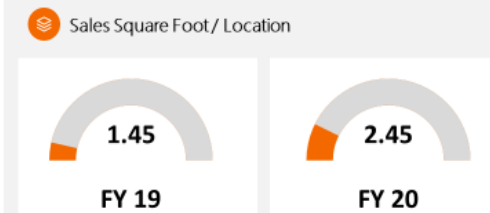
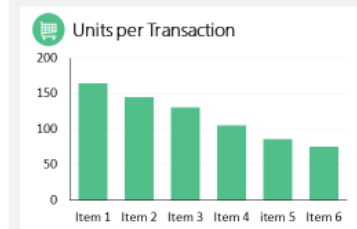
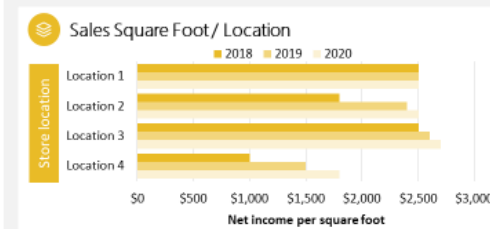
Inventory

Interface (email, FTP, Portal)

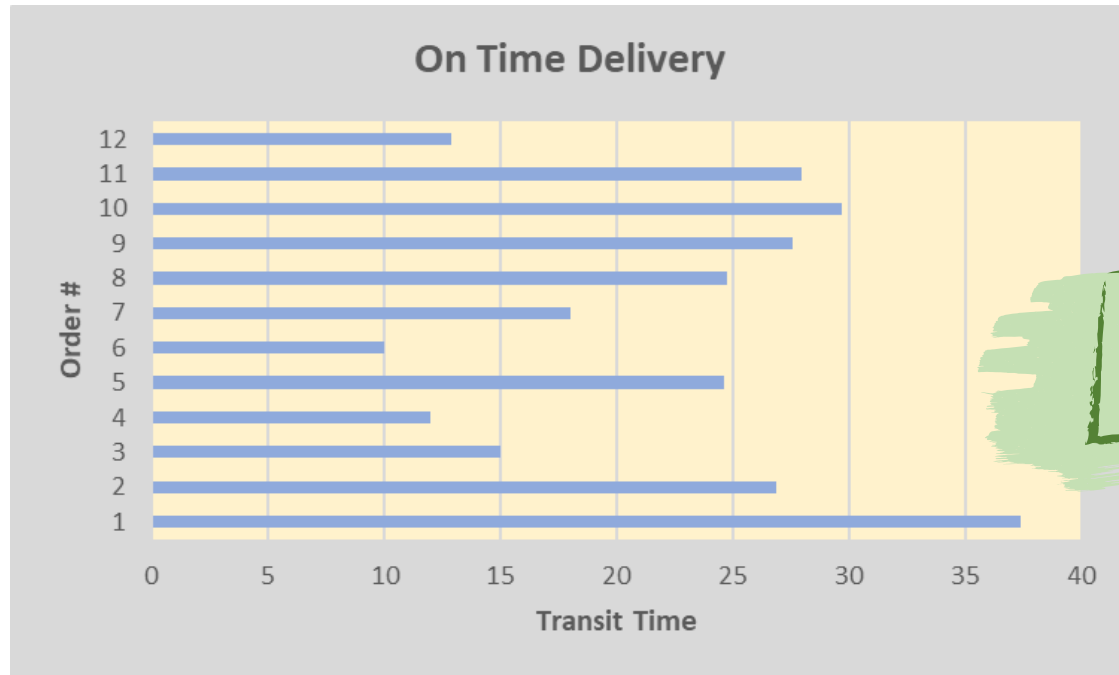
Central Data Base
(PRA, MS Power
Automate)

Algorithm
Visualization
(MS Power BI, Tableau)

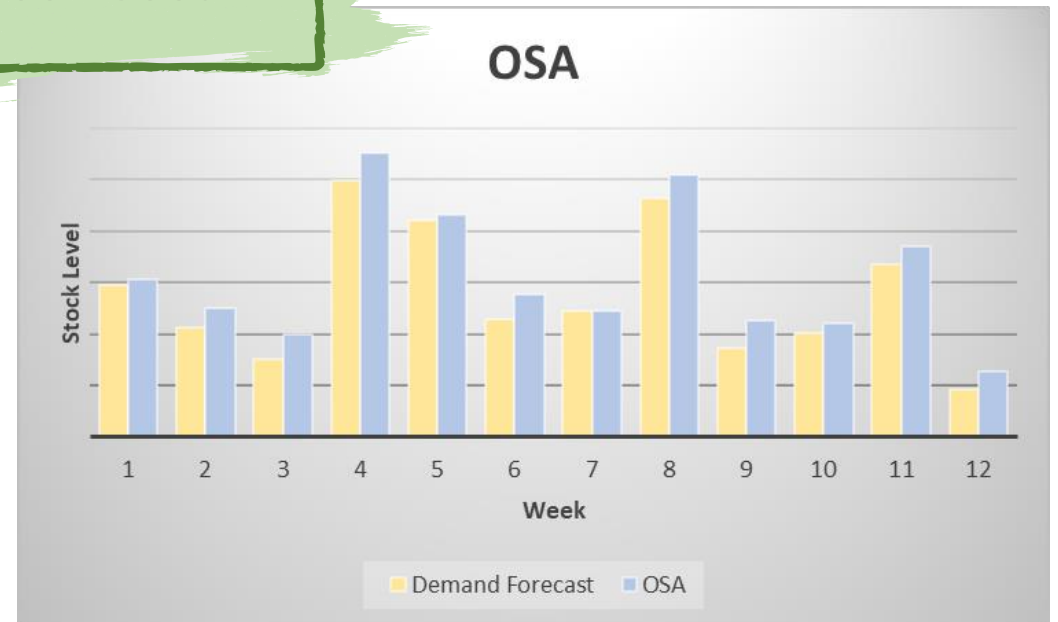
DASHBOARD



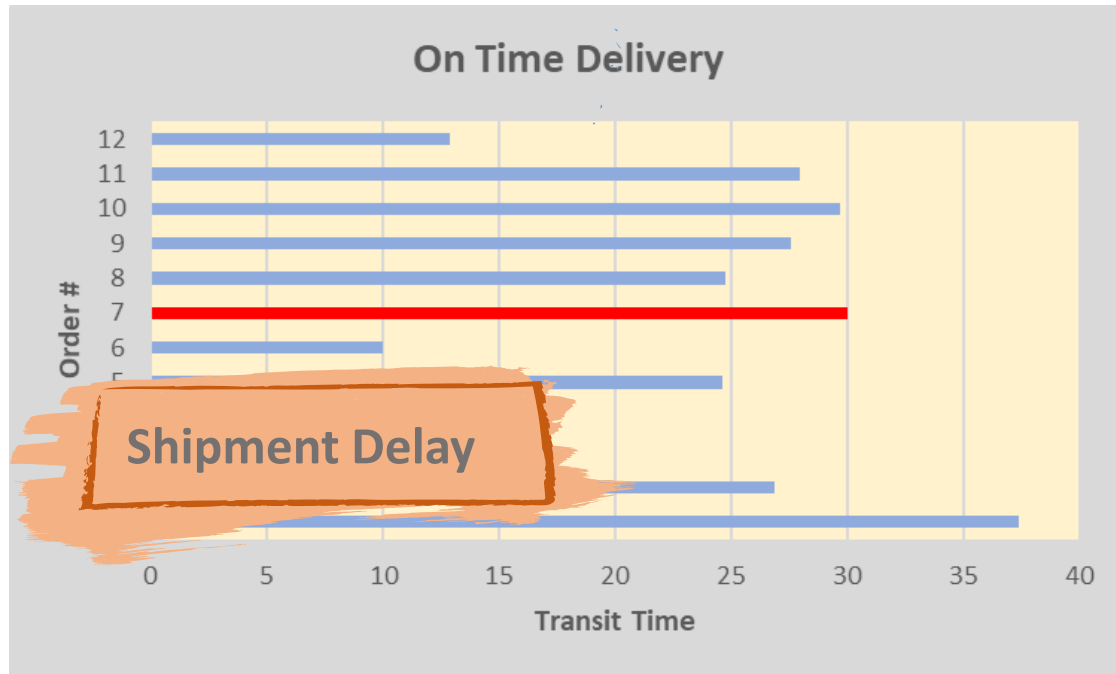
Dashboard



Look Good

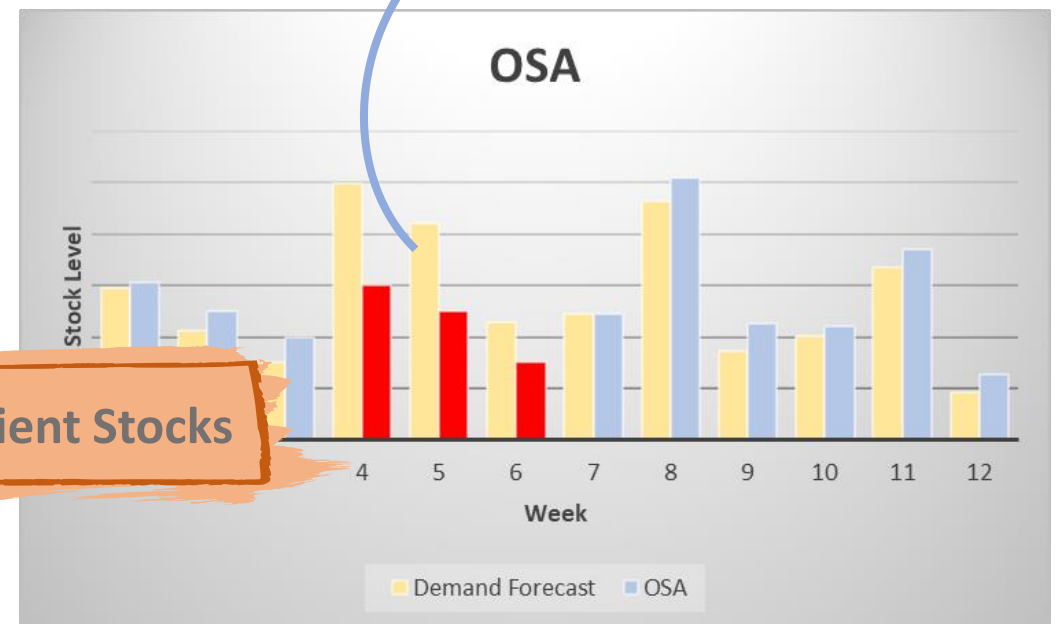


Dashboard



Expedite, Re-routing, Alternative Sources, Substitutions

Insufficient Stocks



SITE Approach

S

Sources

Sourcing

- PO
- Raw Materials Schedule
- Production Schedule

Inventory

- On Self Availability
- In Transit
- Expected Stocks

Logistics

- Shipping Schedule
- Routing, T/T, Costing
- Warehouse Activities

- Procurement Team
- Suppliers
- Manufactures

- POS
- Stock Locations
- Procurement Team

- Logistics Team
- Carriers
- 3PL

I

Interfaces

- In-house
- Supplier Portal
- System (ERP/MRP)

- In-house
- Web / 3PL Portals
- System (ERP)

- Web
- 3PL/Carrier Portals
- System (TMS/WMS)

T

Tactics

- Aggregate Demand/Supply Balance
- Capacity/Lot Sizing Scheduling

- Out of Stock Detection
- Channel Allocation Optimization

- Schedule Delivery in line with Customer Patterns
- Dynamic Routing

E

Evaluation

- Evaluate All Outcomes of the Business Decisions

- Feedback to Analytics Data Base Collectively

- Enhance the Predictive Power

Visualization
SC Analytics
API

Deep Learning

Other Data
Sources





Thank You

