



# **Building Agile and Resilient Supply Chains**

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## **Adapting to Uncertainty through Transformation**

# AGENDA

- ▣ Market Realities
- ▣ Defining an Agile and Resilient Supply Chain
- ▣ Critical Success Factors of Building an Agile and Resilient Supply Chain
- ▣ Summary





# MARKET REALITIES



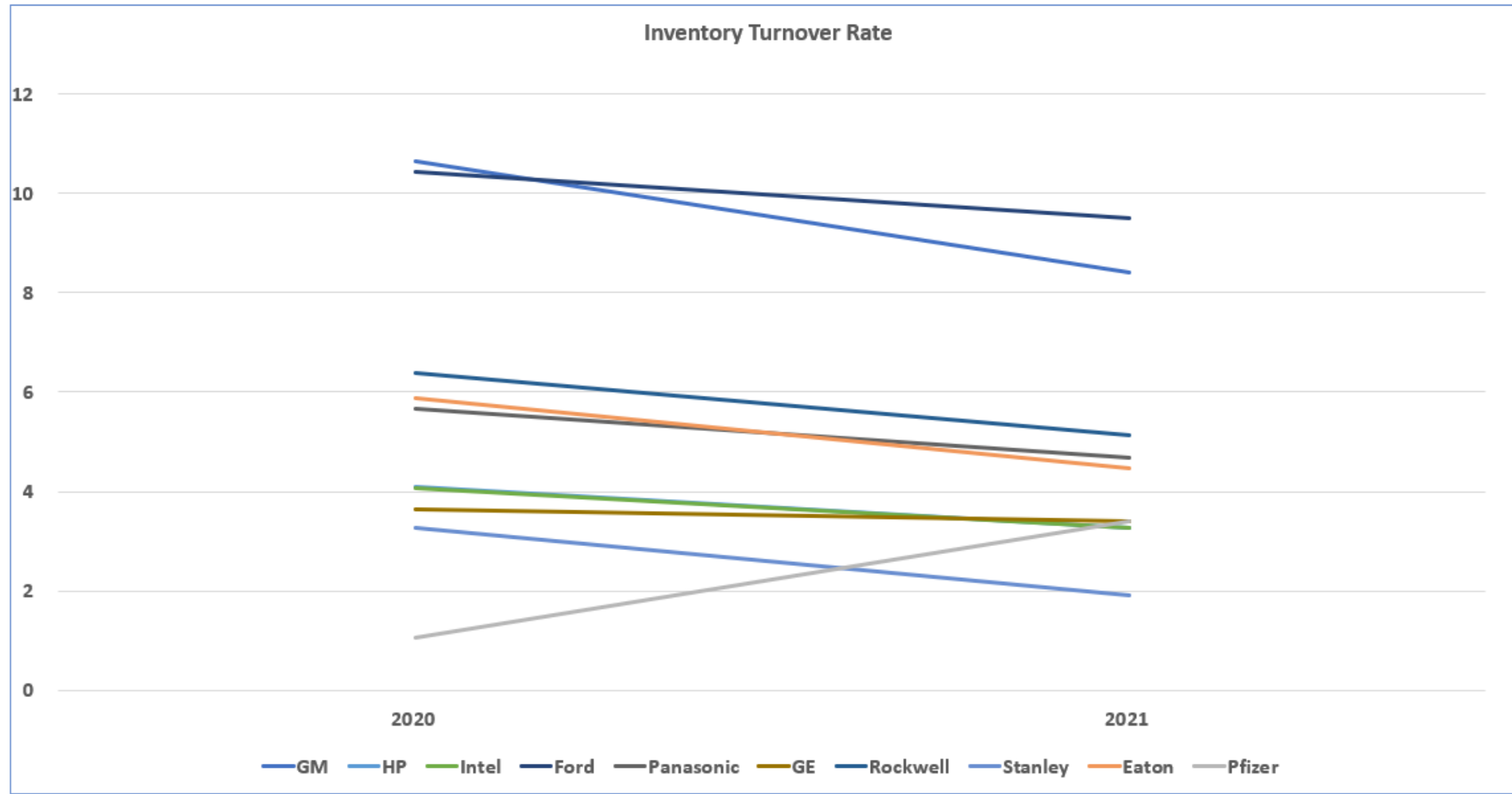
Billions spent on ERP and Manufacturing Inventory Turns have not improved in 25 years

\$1 Trillion of inventory in US

(Source: US Federal Reserve)



# Supply Constraints?



	YTY
Stanley	-42%
Eaton	-24%
GM	-21%
HP	-20%
Rockwell	-20%
Intel	-20%
Panasonic	-17%
Ford	-9%
GE	-7%
Pfizer	222%

(Source: US Federal Reserve)



# MARKET REALITIES – VUCA conditions abound!



# The quest for Agility and Resilience

**ADAPT**   
quickly to **market changes**

**RESPOND**   
rapidly and flexibly to **customer needs**

**RECOVER**   
more quickly when **disruptions occur**

**FOCUS**   
through visibility to **true priorities**





## Defining Agility and Resilience

 **Agility** – “marked by ready ability to move with quick easy grace”

 **Resilience** - “able to withstand or recover from difficult conditions”



## Indicators of Supply Chain Agility and Resilience

 **Shorter lead times**

 **Shorter production 'frozen' periods**

 **Greater ability to manage demand and supply variation**

 **Sustainable performance despite staff turnover**

 **Improved KPI performance despite more challenging conditions**

 **De-risked Supply through Multi Sourcing**

# The Critical Success Factors

**Develop a  
Compelling  
Vision**

**Develop the  
Organizational  
Commitment to  
Succeed**

**Deploy the  
Metrics and KPIs  
that will Drive  
the Change**

**Implement the  
Required Tactics  
and Technology**

# Develop a Compelling Vision

**Revisit the  
prevailing  
assumptions**

**Ensure the  
stakeholders  
agree**

**Prioritize the  
required actions**

**Validate the  
vision through  
simulation and  
scenario testing**

# Develop the Organizational Commitment

**Create the Story**

**Identify those  
who can Lead**

**Identify those  
who will Resist**

**Validate the  
vision through  
simulation and  
scenario testing**

# Establish the right Measurements and KPIs

**Revisit the  
current  
Measures and  
KPIs**

**Implement Flow-  
based Metrics  
and KPIs**

**Prioritize and  
Implement the  
Changed  
Measures**

**Educate,  
Educate, Educate**

# Deploy the Right Tactics and Technology

**Accept that  
fundamental  
process change is  
required**

**Question the  
effectiveness of  
existing  
processes**

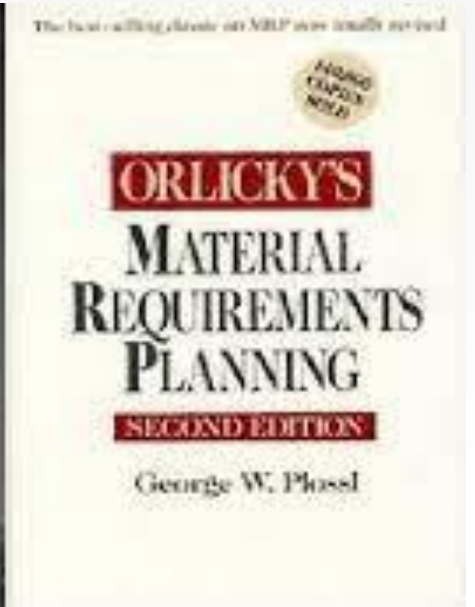
**Follow a holistic  
approach**

**Prioritize,  
Prioritize,  
Prioritize**



# Core concepts of current supply chain planning

- ❖ MRP concepts were developed and codified by Joe Orlicky
- ❖ Joe worked with IBM to develop Bill of Material Processor (BOMP)
- ❖ Published *Material Requirements Planning: The New Way of Life in Production and Inventory Management* in 1975





# Core concepts of current supply chain planning

- ◆ MRP based planning in all ERP systems is based on the following logic:
  - ◆ Based on your forecast - MRP will backward schedule:
    - ◆ What you need to buy
    - ◆ What you need to manufacture or assemble
    - ◆ What you need to package and distribute
    - ◆ To meet your forecasted demand
- ◆ What are the critical assumptions?



# The Critical Assumptions of current supply chain planning

- ❖ Demand is known (the forecast is accurate)
- ❖ There will be no variation
- ❖ Item master data is accurate

***Can we rely on traditional methods to create Agility and Resilience?***



# Building Agility and Resilience

***TO BECOME AGILE AND RESILIENT***

***WE MUST***

***EMBRACE THE CERTAINTY OF AN UNCERTAIN  
FUTURE***

# Increasing agility with the right tactics

**Make to Order**

**Make to Stock**



**Promise Date Performance as the primary KPI**

**Compress Release Horizons**

**Utilize Constraint Based Scheduling**

**Apply Time and Capacity Buffers**

**Pace Materials to Actual Demand**

**Compress Lead Times**

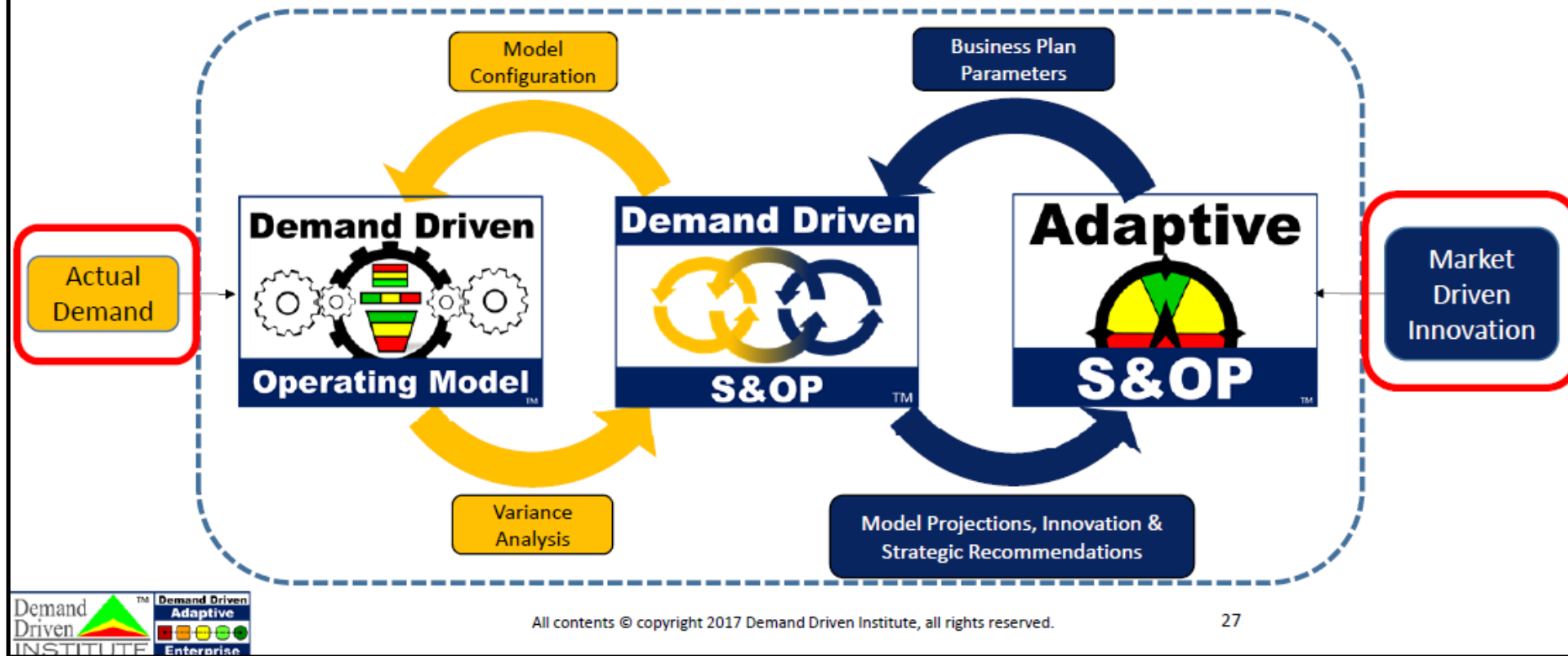
**Reduce Planning Horizons**

**Utilize KanBan and DDMRP Buffers**

# Building Agility and Resilience



## Demand Driven Adaptive Enterprise Model



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## ❖ Achieving Agility – Sales and Operations Planning

❖ Change the focus of your S&OP process

❖ Abandon Consensus Demand = Consensus Supply

❖ Leverage a Range of Scenarios to test your Agility

❖ Focus on the Exceptions





🔹 Achieving Agility – Material Planning

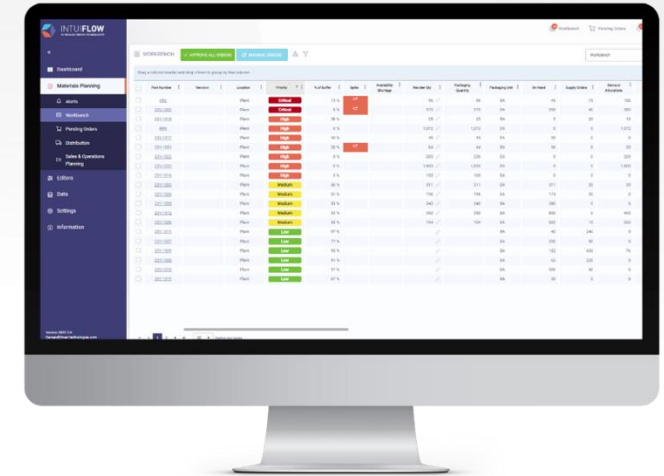
🔹 Pace Materials to Actual Demand

🔹 Compress lead times through buffers

🔹 Deploy buffers to manage variation

🔹 Utilize buffers to manage variation

🔹 Where appropriate – Leverage Demand Driven MRP





## Achieving Agility – Scheduling and Execution

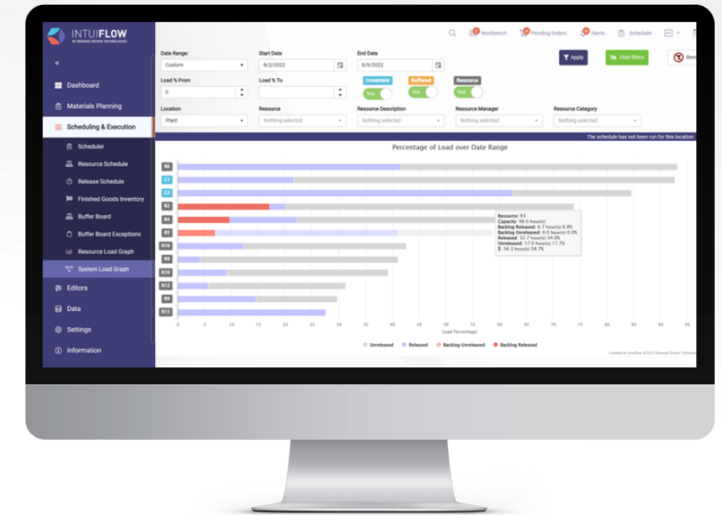
Compress frozen production horizons

Utilize production capacity for true market demand

Align Material and Scheduling Priorities

Utilize buffers to manage variation

Deploy Demand Driven Capacity Scheduling and Execution





# Clients achieving greater Agility and Resilience



Industrial

**CATERPILLAR**

**PENTAIR**

**KOCH-GLITSCH.**

**NOV**

**TECO**  
Technology



Food & Beverage

**Coca-Cola** Beverages Africa

**OFD**  
FOODS

**frulact**



Automotive

• **APTIV** • **TOTAL**  
Lubricants

**MICHELIN** **BONTAZ**

**SAT**  
Since 1950



Aerospace

**HUTCHINSON**  
**CROUZET** **FIGEAC AERO**  
**ROYAL** Engineered Composites  
**SAFRAN**



Electronics

**METTLER** **TOLEDO**  
**FLUKE**



Consumer

**NERF** **adopt** PARFUMS FRANÇAIS  
**LAFABRIL** **Pierre Fabre**



Healthcare

**STEMCELL** TECHNOLOGIES **BioSkin**  
**PATH-TEC** The Specimen Management Experts **straumann**  
**FAREVA**  
**didactic** ACT FOR CARE **macopharma** DESIGNED FOR LIFE



Packaging

**GREIF** **SLEEVER**

# The Critical Success Factors

**Develop a  
Compelling  
Vision of the  
Future State**

**Develop the  
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**Deploy the  
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**Implement the  
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THANK YOU



**INTUIFLOW**

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