Where Do Supply Chains Go From Here?

Conclusions for Post COVID-19 Supply Chains

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Professional Development Reminder

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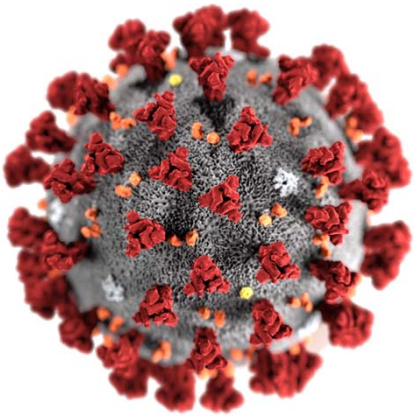
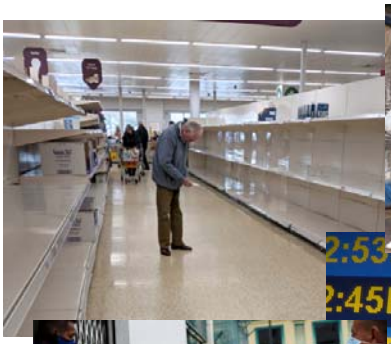
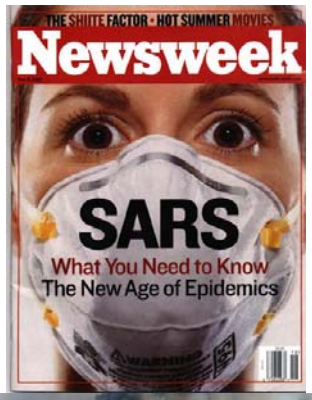
A Massive Global Shock

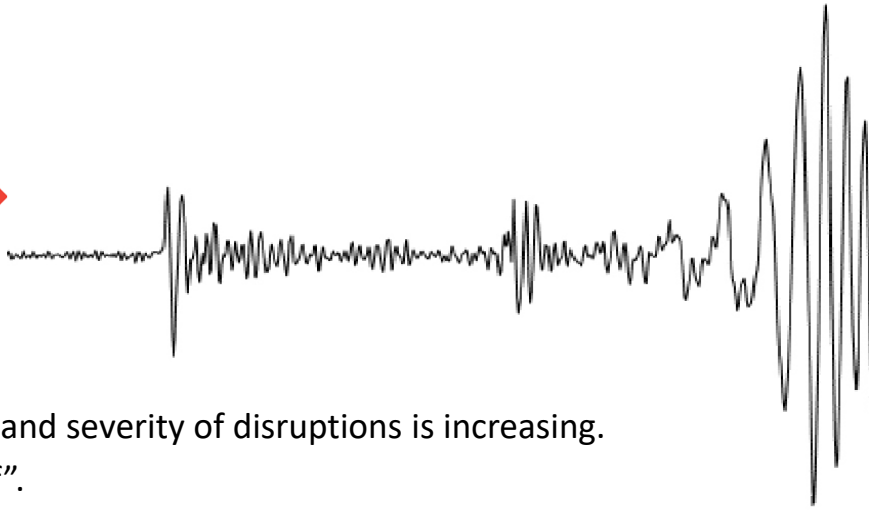




The Rise of the VUCA World



Volatile



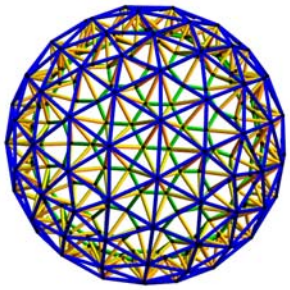
The frequency and severity of disruptions is increasing.
"When" not "if".

Uncertain

It has become increasingly difficult to predict what will happen.
The three truths about forecasting:

1. Forecasts start out wrong
2. The longer the forecasted time range the higher the error rate
3. The more detailed the forecast the higher the error rate

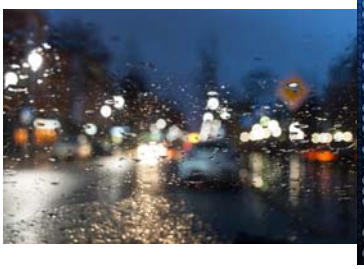
Complex



Today our supply chains have more connections and interdependencies leading to:

1. Elongation – cumulative lead times have extended as we source and sell globally
2. Fragmentation – many more nodes and inputs makes effectively managing integration much more difficult
3. Fragility – even small initiating events can have devastating effects

Ambiguous



It is becoming more and more difficult to tell what is happening.

Supply chains are drowning in data but starved for relevant information.

VUCA is the "New Normal" for Supply Chain

Supply Chain Characteristics	1965	Today
Supply Chain Complexity	Low	High
Product Life Cycles	Long	Short
Customer Tolerance Times	Long	Short
Product Complexity	Low	High
Product Customization	Low	High
Product Variety	Low	High
Long Lead Time Parts	Few	Many
Forecast Accuracy	High	Low
Pressure for Leaner Inventories	Low	High
Transactional Friction/Customer Tolerance	High	Low

Harvard Business Review

Topple Rates Increased 6X

"We investigated the longevity of more than 30,000 public firms in the United States over a 50-year span. The results are stark: Businesses are disappearing faster than ever before. Public companies have a one in three chance of being delisted in the next five years, whether because of bankruptcy, liquidation, M&A, or other causes. That's six times the delisting rate of companies 40 years ago. And the rise in mortality applies regardless of size, age, or sector. Neither scale nor experience guards against an early demise.

We believe that companies are dying younger because they are failing to adapt to the growing complexity of their environment. Many misread the environment, select the wrong approach to strategy, or fail to support a viable approach with the right behaviors and capabilities."

(Martin Reeves, Simon Levin, and Daichi Ueda, Harvard Business Review, January-February 2016)

"We believe that companies are dying younger because they are failing to adapt to the growing complexity of their environment."

Looking Ahead and Moving Forward

1. Leadership must start with the assumption that big disruptions ARE going to happen.
2. Leadership cannot build business and supply chain models based on profit maximization strategies that ignore the above conclusion.

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Disruption Risks – Assume These WILL Happen

(Martin Reeves, Simon Levin, and Daichi Ueda, Harvard Business Review, January-February 2016)

COLLAPSE: Change from within or outside the industry renders the firm's business model obsolete

CONTAGION: Shocks in one part of the business spread rapidly to other parts of the business

FAT-TAIL: Rare but large shocks, such as natural disasters, terrorism, and political turmoil

DISCONTINUITY RISK: The business environment evolves abruptly in ways that are difficult to predict

OBSOLESCENCE RISK: The enterprise fails to adapt to changing consumer needs, competitive innovations, or altered circumstances

REJECTION RISK: Participants in the business's ecosystem reject the business as a partner

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The Need for Resilience

Resilience: The ability to maintain or restore system equilibrium through or after large shocks.

But how to build a resilient supply chain?

Is there something to focus on?

Is there a blueprint?

First, a warning…

Cost Jeopardizes Resilience

- Cost strategies rely on predictable and consistent volume to attempt to maximize profit
- When the volume is not realized in the predicted way there are three bottom line effects:
  1. Too much of the wrong
  2. Too little of the right
  3. Additional expenses to attempt corrections
- Assets are fundamentally misaligned to the market
- The larger the disruption, the worse the misalignment
- The bigger the misalignment the lower the chance of survival

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What Should we Focus On?

Where do Supply Chains go from Here?

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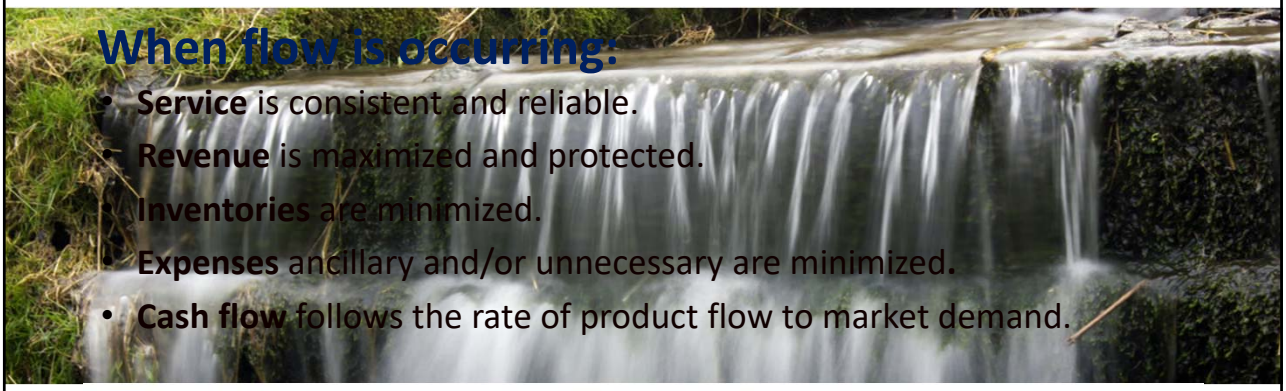
It's ALL About Flow



When flow is occurring:

- **Service** is consistent and reliable.
- **Revenue** is maximized and protected.
- **Inventories** are minimized.
- **Expenses** ancillary and/or unnecessary are minimized.
- **Cash flow** follows the rate of product flow to market demand.

Protection and Promotion Flow =

ROI Maximization

Flow is the Common Objective Across Many Disciplines

MRP	LEAN	TOC	6 Sigma
			
Objective: Synchronize Demand & Supply	Objective: Reduce Waste	Objective: Improve System Throughput	Objective: Reduce Variability

All have the same foundation - FLOW!

Plossl's Law: All benefits will be directly related to the speed of FLOW of materials and information.

Is a Flow Focus New?

TAYLOR

Objective:
Rate

Time standards & variances

FORD

Objective:
Scale

Vertically integration
& mass production

BROWN

Objective:
Market

Market creation and
segmentation

FLOW NOT Unit Cost Minimization was THE Focus!

Flow is THE Lever for ROI

$$\Delta\text{Flow} \rightarrow \Delta\text{Cash Velocity} \rightarrow \Delta\left(\frac{\text{Net Profit}}{\text{Investment}}\right) \rightarrow \Delta\text{ROI}$$

Management Accounting

Flow is what is managed. Cost is the outcome of that management.

Flow and Cost

Unitized cost calculations are based on past activity within a defined period. When things flow well through a defined period costs are controlled.

$$\Delta\text{Cost} \not\rightarrow \Delta\text{Cash Velocity} \rightarrow \Delta\left(\frac{\text{Net Profit}}{\text{Investment}}\right) \rightarrow \Delta\text{ROI}$$

Cost was NEVER intended to be a decision driver, its creation was to ensure transparent and consistent reporting to shareholders and tax authorities!

Flow is the rate at which a system converts material to product required by a customer.

Cash velocity is the rate of net cash generation; sales dollars minus truly variable costs (aka contribution margin) minus period operating expense.

Net profit/investment the equation for ROI

Some Rules for the VUCA World

- *Plossl's Law: All benefits will be directly related to the speed of FLOW of materials and information.*
- *When a business focuses on flow performance, better cost performance will follow. The opposite, however, is not the case.*
- *Something is productive if and only if it leads to better promotion and protection of system flow.*
- *Something is deemed efficient if and only if it leads to better promotion and protection of system flow.*

Relevance Lost

$$\Delta\text{Visibility} \rightarrow \Delta\text{Variability} \rightarrow \Delta\text{Flow} \rightarrow \Delta\text{Cash Velocity} \rightarrow \Delta\left(\frac{\text{Net Profit}}{\text{Investment}}\right) \rightarrow \Delta\text{ROI}$$

Variability is defined as the summation of the differences between our plan and what happens.

Variability ↓ = Flow ↑

Variability ↑ = Flow ↓

Visibility is defined as **relevant information** for decision making.

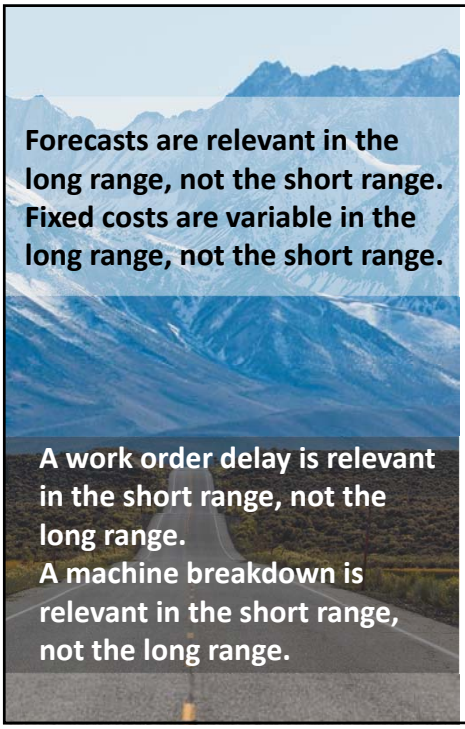
Visibility ↑ = Variability ↓

Visibility ↓ = Variability ↑

Debra Smith and Chad Smith, "*Demand Driven Performance – Using Smart Metrics,*" McGraw-Hill, 2014

Four Essentials for Distilling Relevant Information

1. Relevant Ranges Defined
2. Flow-Based Operating Model Defined
3. Reconciliation (bi-directional) between Relevant Ranges
4. Organizational Flow-Based Metrics

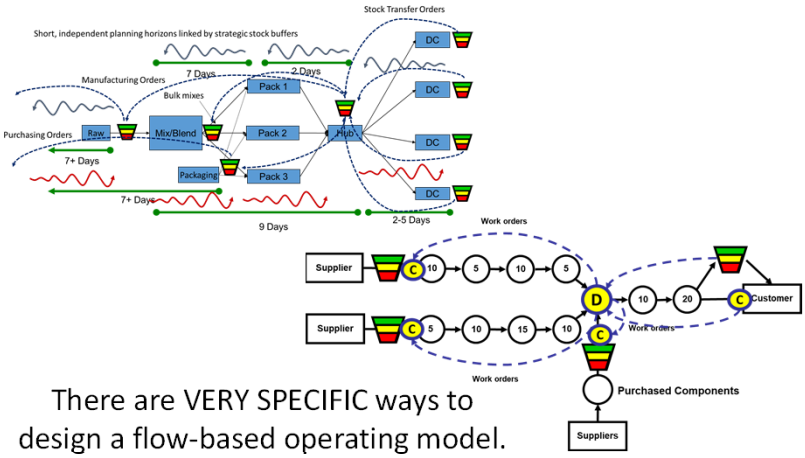


Relevant Ranges

- Relevant Range = The time frame in which assumptions are valid
- The assumptions and information that are valid and relevant will differ between these ranges.
- Force fitting irrelevant assumptions into the wrong range will lead directly to distortive information.
- Different relevant ranges are typically utilized by different personnel

A Flow-Based Operating Model

ΔFlow → ΔCash Velocity → Δ (Net Profit / Investment) → ΔROI



There are VERY SPECIFIC ways to design a flow-based operating model.

Flow-Based Models are Supported by:

Economics
Mathematics
Physics
Management Accounting
George Plossl (MRP)
Eli Goldratt (TOC)
Taichi Ohno (LEAN)
Dr. Deming (Six-Sigma)

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Tactical Reconciliation

- The assumptions and information between relevant ranges differ
- There is a need to reconcile these assumptions in a constant bi-directional and iterative fashion in order to drive adaptation
- Strategy must be influenced by operational capability and performance as well as how the model might perform under predicted conditions.
- Operational capability must be influenced by predicted conditions and/or strategic expectations in future time periods.

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Flow-Based Metrics

- Any suite of flow-based metrics must consider the other three prerequisites:
  - ✓The metrics must fit the range
  - ✓The metrics must fit the flow-based operating model
  - ✓The metrics must be reconcilable between ranges.
- Force fitting non flow-based metrics will directly lead to conflicts and distortions throughout the organization – it will obscure what is relevant!

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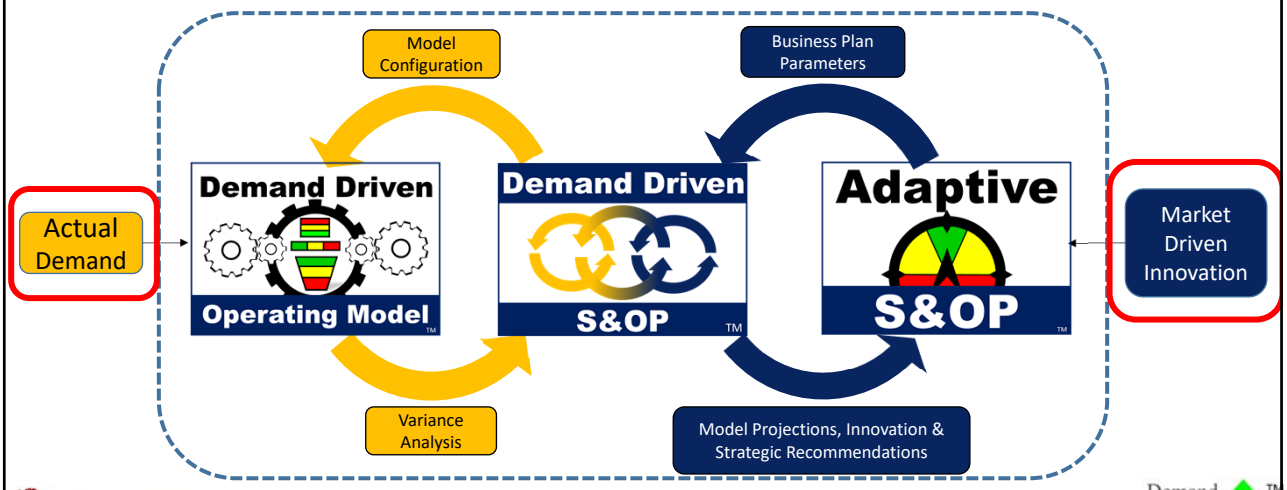
Demand Driven Adaptive Enterprise Model



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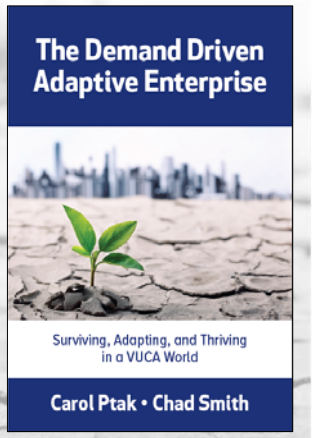
More Detail Available

"It is not too long, or too deep, but explains to Management and the Executive of any company working in the supply chain, why they are battling to succeed with current planning and control systems that were developed 50 years ago, and why they need to change and what they need to change to."

Ken Titmuss
CFPIM, CSCP, SCOR-P, CPF, PLS, CS&OP, CSCA, CLTD, DDPP, DDLP, DDFP & APICS Master Instructor

Get your copy at Amazon



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INDIVIDUAL REMOTE EDUCATION AND TESTING

Building Supply Chains in a VUCA World

- *As elongation increases so does risk*
- *As fragmentation increases so does risk*

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