Supply Chain Management:
SCM 4.0/5.0 Strategies for 2023

Coordinator, Facilitator

D. Scott Sink

**IISE Performance Excellence
and Op Analytics Lead**

Our Presenter today:

**Jared Frederici
Sr. Leader & MBB
The Poirier Group**

9 Feb 2023

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Focused Performance Improvement

Agenda

11:00-11:07   Scott Tee-up

11:07-11:37   Jared execute on story line

11:40-11:50   Scott and Jared Dialogue (using chat from audience)

11:51-12:00   Scott Close out and tee up upcoming webinars and IISE Annual Conference

Our 2023 'Lead-off' Trilogy:

Insightful Leadership on Supply Chain Management
01.06.23 Jim Tompkins Perspectives and Points of View (Insightful Leadership)

*01.13.23 **Best Practice Case Study—Peavey Industries***
Successful Integration of People, Information and Technology Enablement, Strategy and Process

02.09.23 Cutting Edge ISE Principles and Methods for SCM 4.0/5.0
with Jared Frederici, TPG

Housekeeping

INSTITUTE OF INDUSTRIAL & SYSTEMS ENGINEERS

Solving complex & critical problems of the world.

1 Thank you for joining us!

2 We'll share how to get access to the recording, presentation, YouTube versions and blogs at the end of the webinar. The presentation is available now, use this link to get.. (we'll post as a chat)

3 We will field questions as appropriate and time permits. Please **use the 'chat' function** to share your comments and questions.

4 Follow up questions are welcomed and contact information is provided at the end of the presentation.

5 For those who value certificates of participation, IISE will be mailing those out the week after the webinar. Be patient and check your clutter and spam folders if you don't receive one.

Thanks to our Sponsor and Partner for investing time, money, energy programming and directing this overall Program for IISE!

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THEMES:

- **Supply Chain 4.0**

- **Enterprise Transformation and OpEx**

- **Strategic Performance Improvement Planning**

- **Operational Analytics**

- **Cultures to support Perf Excellence**

- **Integration of People, Strategy, Process and Technology**

- **Integrated LeanSigma**

- Industry, **Service, Healthcare 4.0**

- Personal and Professional Learning and Development

- **Change Leadership and Management**

- Navigating through Turbulent (VUCA) times

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Our three part series of webinars on Organizational and Operational Excellence in the Fall Quarter culminated in this article in the ISE Magazine (Dec 2022)

To access a copy of this article, please use this link:

https://www.thepoiriergroup.com/creating-resilient-organizational-excellence-programs-amid-major-disruptions/

For a short recap of Jim Tompkins webinar, read our blog.... https://www.thepoiriergroup.com/perspectives/

SUPPLY CHAIN MANAGEMENT SERIES

THE POIRIER GROUP

PART 1 OF 3

We asked Jim Tompkins, CEO Tompkins Ventures, to share his insights on Supply Chain Challenges and Opportunities for the coming year. Here's a quick summary of what he shared during his recent webinar.

A recent Wall Street Journal article stated in December 2022 that, "After two years of disruption, supply chains are almost back to normal." Are you hearing, "our supply chain people are doing a great job this year?"

It might be wise to think again about these statements—as there is good news and bad news for 2023. First the good news - Supply Chains have gained a lot of visibility from consumers right up to the C-suite.

And, go to the IISE link to get the presentation and view the video:

https://www.iise.org/details.aspx?id=53670

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SUPPLY CHAIN LEADERSHIP INSIGHTS FOR THE '20S

Global Performance Excellence Webinar
Jan. 6, 2023
Presenter: Jim Tompkins

Jim Tompkins will be providing attendees with insightful leadership on supply chain management 4.0 and, specifically, perspectives and points of view on challenges and opportunities for supply chain management in 2023.

Download PDF | Download Video
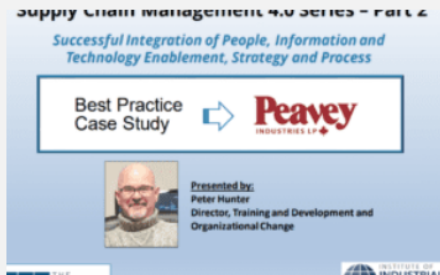
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Visit The Poirier Group's Website to access Jim Tompkin's webinar and blog from last week

https://www.thepoiriergroup.com/perspectives/

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Insightful Leadership: Supply Chain Management 4.0 Series – Part 2
January 13, 2023
Read More >>

Insightful Leadership: Supply Chain Management 4.0
January 12, 2023
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2023 – Critical Success Factors for the Year Ahead
January 12, 2023
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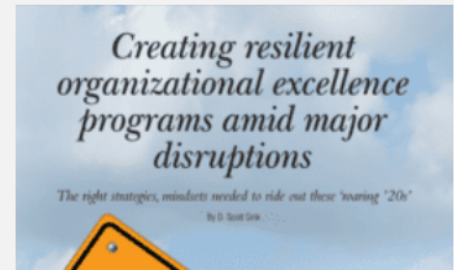
Creating Resilient Organizational Excellence Programs Amid Major Disruptions
December 8, 2022
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Building Great Business Process Improvement Programs
December 8, 2022

Creating Better and More Resilient Productivity Improvement Programs in Difficult Economic Periods

Surfing the Waves to Organizational Excellence
September 26, 2022

Unlocking Capacity Within Your Organization
September 20, 2022

Today's Webinar focuses on these Critical Factors for Success in a Challenging 2023

- **Develop/Invest** in your Talent—*You win with People*

- **Create** Value—diversify and solidify existing revenue streams and keep investing in the positioning and marketing process

- **Control** Costs—reduce wastes, improve productivity and quality

- **Reduce** Working Capital, improve liquidity by making tough, timely choices but also by finding ways to manage assets constituting Working capital better, faster, NOW!

- **Build/Grow** your Business Process Improvement capabilities, invest in partners and talent development to ensure you are improving what you do and how you do what you do better, faster.

- **Improve Flow—**reduce cycle times and lead time, focus on cross-functional value stream improvement.

David Poirier, CEO The Poirier Group, Jan 2023

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Story Line for today

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Agenda/Story Line:

- Supply Chain Management 4.0/5.0 is all about the integration of People, Strategy, Process and Information and Technology Enablement;
- It's clear from our first webinar in this trilogy, Jim Tompkins, that the requirements for success in SCM have changed dramatically, I'll review in what ways;
- There are some innovative applications of Integrated Systems Engineering that we've been applying with our clients that Jared will share for your consideration;
- The 'end game' in SCM for most middle tier organizations is resilience, pre-activeness (as Jim said), agility and flexibility and most importantly rationalized optionality of how we get the right things, right amount and quality, right place at right time and cost..

To get a copy of our the presentation and YouTube Version of the recording for the Webinars from 6 & 13 Jan. https://www.thepoiriergroup.com/
https://www.youtube.com/channel/UCixxhLPZrwdK-DdKYqYZm1A

Supply Chain Management 4.0 in Periods of Disruption
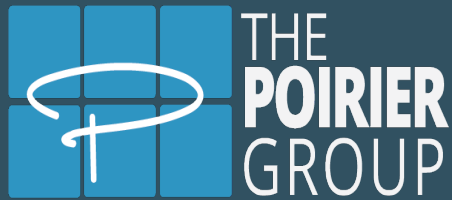
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Focused Performance Improvement

Jared Frederici
Senior Leader,
The Poirier Group

Supply Chain – State of the Industry

Expect disruptions. Things are not going back to normal. New "Normals" are forming. Headwinds of a recession are already impacting Supply Chain decisions and planning.

Rising Demand for Third-Party Logistics

Drivers:
- Rising demand from e-commerce
- Global supply chain complexity increasing
- Reduction in physical locations and connected Ecomm ecosystems

Increasing Transportation Costs

Drivers:
- Overall Inflation
- Wage increases and worker safety regulation
- Rising fuel costs due to war in Ukraine

Advancing Technologies

Drivers:
- New technology in hybrid/electric vehicles
- Advanced warehouse management software
- Industry 4.0/IoT driving operational efficiency
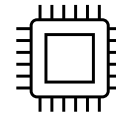
Rising Complexity – Need for Visibility

Drivers:
- Global overproduction
- Increased e-commerce demand
- Residual disruptions by COVID-19
- Push for deglobalization

Organizations need to be equipped to make interventions at different phases in the end-to-end Supply Chain, leveraging different techniques, based on relative **maturity**

Transportation – State of the Industry

Change is the new normal. Some relief at the ports but long term ripple effects on manufacturing are impacting up a number of industries (long range bullwhip effect)

The Transportation industry is faced with capacity issues everywhere.

OCEAN FREIGHT
Continued port backlogs and reduced capacity in available ships. Some relief but long term impacts

AIR FREIGHT
Reduced freight capacity because of COVID related passenger flight decline and spill over from shortage of ocean freight options

TRUCKING
Driver shortages and blockages because of protests, weather and border related delays. Spot market variance across the board

Assessing Supply Chain Maturity

We can often romanticize "models" – there are many good ones to assess maturity available but you must fit to your organization type

Legend: ■ Very high maturity   ■ High maturity   ■ Medium maturity   ▫ Low maturity   ▫ No maturity   [x] Score

	SC strategy		Planning					Physical flow					
	Network design	SC seg-mentation	Demand planning	Inventory mgmt	S&OP/integrated business planning	Master planning	Scheduling	Ware-house operation	Transport operation	Assess-ment and tender of logistics	Order mgmt	Collabo-ration	Perfor-mance mgmt
Data	1	1	1	2	1	1	4	5	1	5	2	1	1
Analytics	3	1	2	1	5	4	1	1	3	3	1	4	3
Software/hardware	4	1	5	1	1	3	3	2	1	2	1	3	4
People	1	1	1	2	1	1	4	5	1	4	2	1	1
Process	3	1	2	1	5	4	1	1	3	3	1	4	3

This is one of many maturity models. 1-5 often follows "Blooms Taxonomy". Visualizing the "end-to-end" and assessing maturity are first steps.

THE POIRIER GROUP   *Source: McKinsey*

Migrating from Ad hoc to Digital, Prescient Ecosystems

Not so long ago, "Predictive" was #5...

1 AD HOC	2 OPPORTUNISTIC	3 REPEATABLE	4 MANAGED	5 OPTIMIZED
Resistant	Reactive	Responsive	Predictive	Prescient
Focused on functional metrics and performance, without consideration for the digital tools or key processes to identify, anticipate, or effectively respond to disruption.	Some adoption of digital tools, but siloed and sporadic and poorly linked to key business processes resulting in limited identification or anticipation of disruption.	A range of digital tools are in place, and the beginnings of supply chain resiliency are established, but capabilities remain disconnected with key processes, and disruption response is modest.	Digital tools are well established and effectively connected to key processes resulting in good capabilities to identify, anticipate, and manage disruptions proactively.	A digitally enabled, thinking supply chain that can easily and comprehensively identify and anticipate disruptions and either mitigate them ahead of time or be prepared to react quickly when they occur.

The most advanced supply chains can run largely digitally, predicting with high degrees of accuracy disruptions, and putting mitigation plans/strategies in place autonomously

Supply Chain – From Raw Material to End User

Supply Chains vary widely based on the what needs to occur for the physical product (or service!). The flow starts with the input supplies; the conversion (manufacturing/packaging); the storage and/or fulfillment; and the end user.

Raw Material					
Components					
Packaging Items	Production		Finished	Depots	End Users
Product Sourcing	Sub-Assembly	Packaging & Unitization	Goods Inventory	Distribution Centres	(Customers, Wholesale, Retail)
Imported Materials	Work-in-progress		Warehouse		
Bought-in Parts					

Product Physical Flow →

Information Flow ↔

Reverse Logistics ←
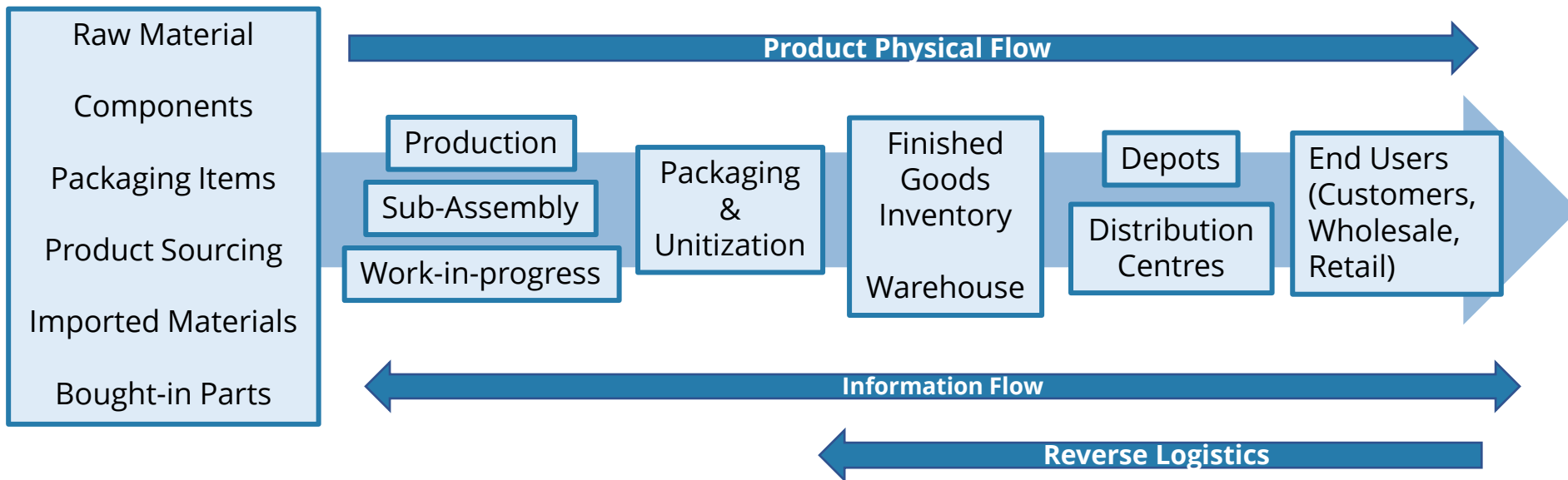
Supply Chain – End to End with Decision Points (and Failure Modes)

Optimizing the performance of a supply chain is typically aligning multiple decision points with the corporate strategy and customer requirements.

Manufacturing
- Capacity
- Equipment

Network Planning
- Location and Blend of Warehouse/DC/Depot
- Type and Size of Storage
- Materials Handling Equipment

Raw Material

Components

Packaging Items

Product Sourcing

Imported Materials

Bought-in Parts

Production

Sub-Assembly

Work-in-progress

Packaging & Unitization

Finished Goods Inventory

Warehouse

Depots

Distribution Centres

End Users (Customers, Wholesale, Retail)

Packaging
- Protective Elements
- Handling Systems
- Unit Load and # of Options

Inventory Management
- What to stock
- Where to stock
- How much to Stock

Demand and Supply Planning
- Forecasting
- Control Procedures
- Sourcing – price, location

Transportation Management
- Mode of Transportation
- Type of Delivery
- Load Planning and Route Scheduling

Retail and Manufacturing Supply Chains vs. Services

Retail and traditional manufacturing Supply Chains focus on getting the product to the end customer. Typically the same physical SKU will be at multiple stages in the supply chain and constantly flowing with the goal to be on shelf BEFORE the customer but not too early. Notice the nuances of a service based supply chain.

Intelligence Back Loop

Deploying to Customer

Assessing Capacity, Deploying Skills, 3rd Parties

QC, Beta, Workflow, Readiness

Company Owned Store

Franchisee

Ordered Inventory

In transit to DC

In the DC(s)

In transit to Store

Developing Services, Predicting and Understanding Requirements

&
In transit to Store

Procuring Assets and Resources

EComm
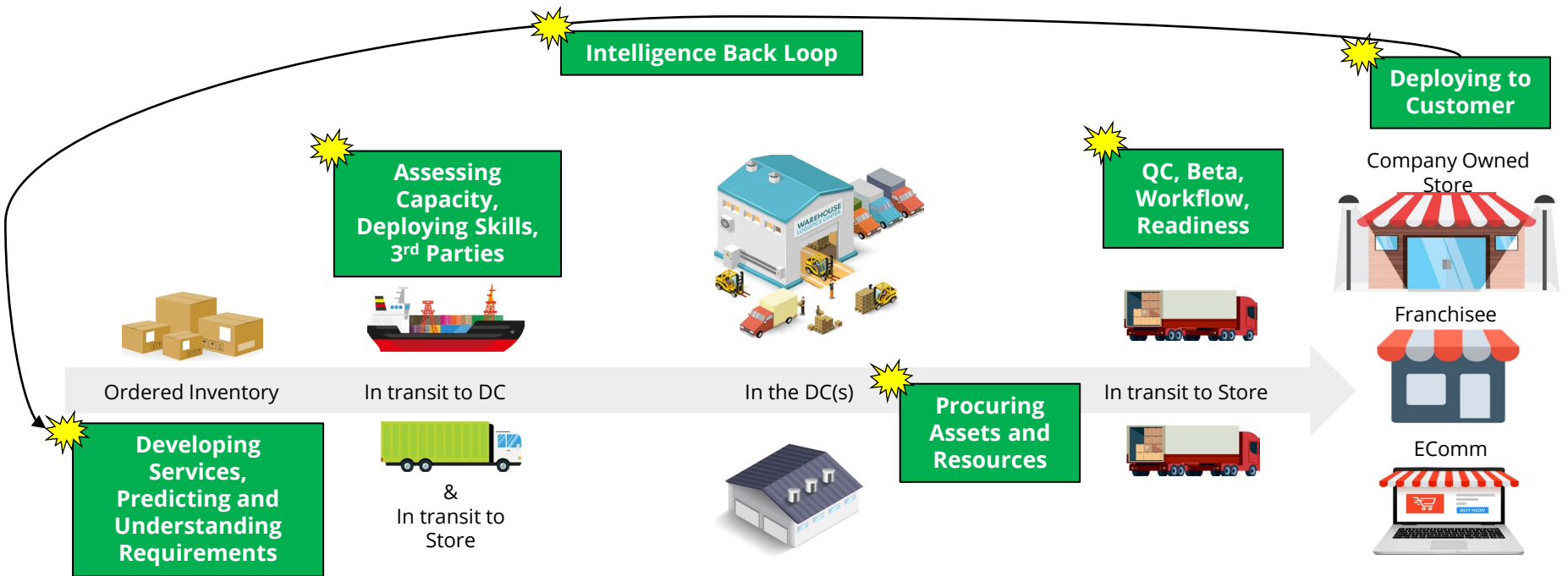
Flow in the Retail / Manuf. Supply Chain

Critical Success Factors for Retail/Manufacturing is product FLOW as demand can be forecasted but often volatile

The type, location, and ownership of the outlets has an impact on all upstream capacity needs and service levels.

Flow in the Services Supply Chain

Critical Success Factors for Service Systems is visibility to PEOPLE and how they interact with services & technology within the broader value chain

Setting the Stage – Where Many Organizations are at Within Their Supply Chains

This is the challenge many supply chain leaders are facing as costs have risen, budgets are being questioned and forecasts are being revised.

$ 3.1-5M
Potential Direct Benefits
(migrating back to pre-pandemic costs only)

25+
External Companies Benchmarked

4-5%
What's Possible 2023-24'
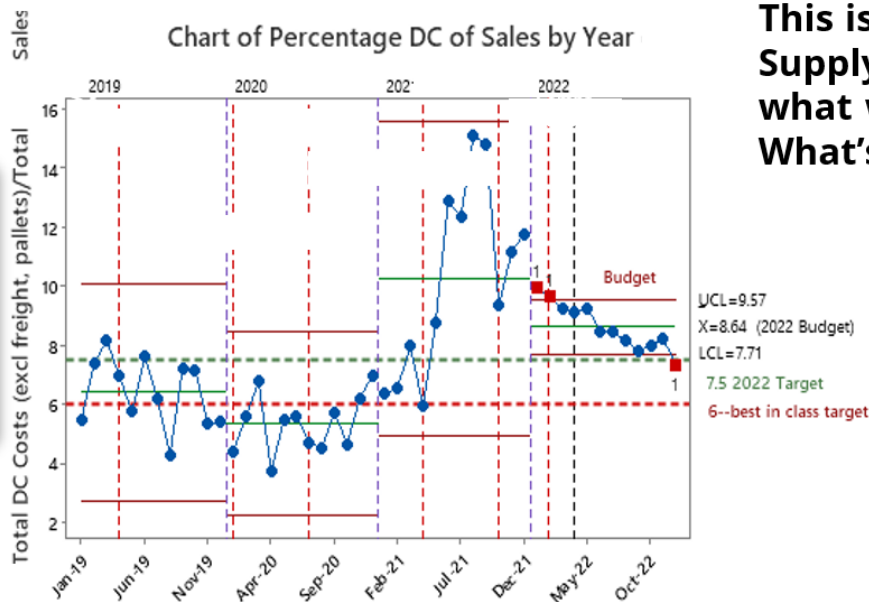
This is the fundamental question many Supply Chains face as we enter 2023 – what was the impact of the pandemic? What's possible now?
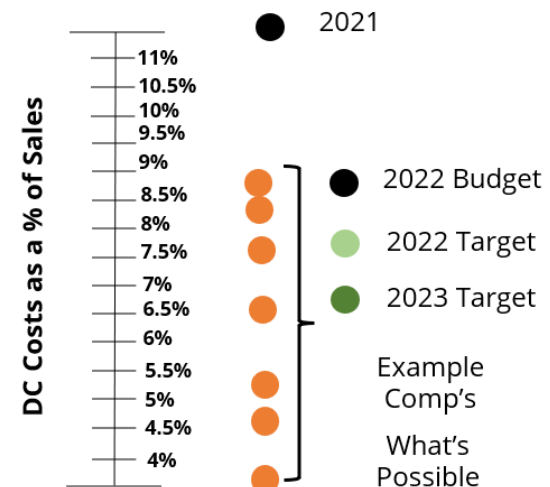
What's the bridge between what our cost structure was, what it is now, what's controllable vs. what's not?

Supply Chain – End to End Processes

End-to-End Enterprise Process Map (Supply Chain)

PLAN

| Strategic and Financial Planning | Channel Planning | Budget and Seasonal Plan |

BUY

| Product Planning | OMNI Planning and Setup | Strategic Purchasing | Production/ Transformation |

Supply Chain – End to End Processes
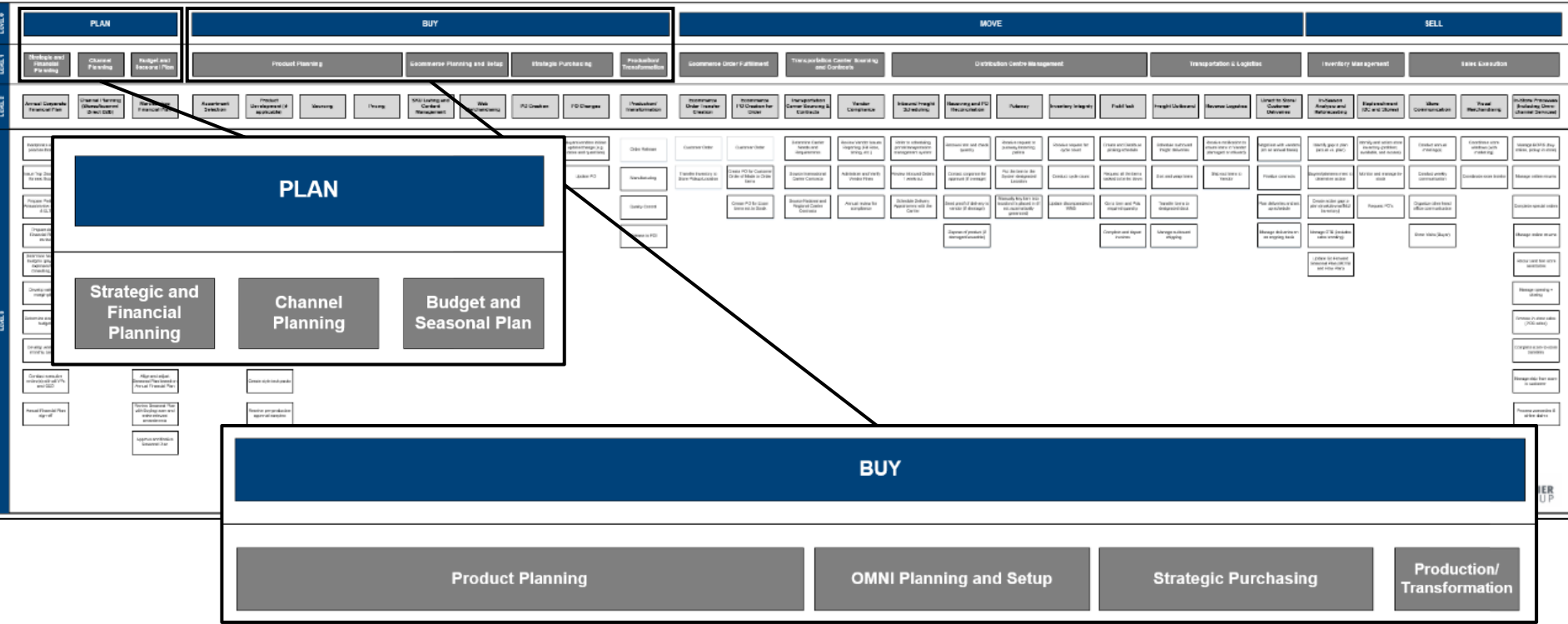
Zooming In – Vendor/Carrier Management for Logistics
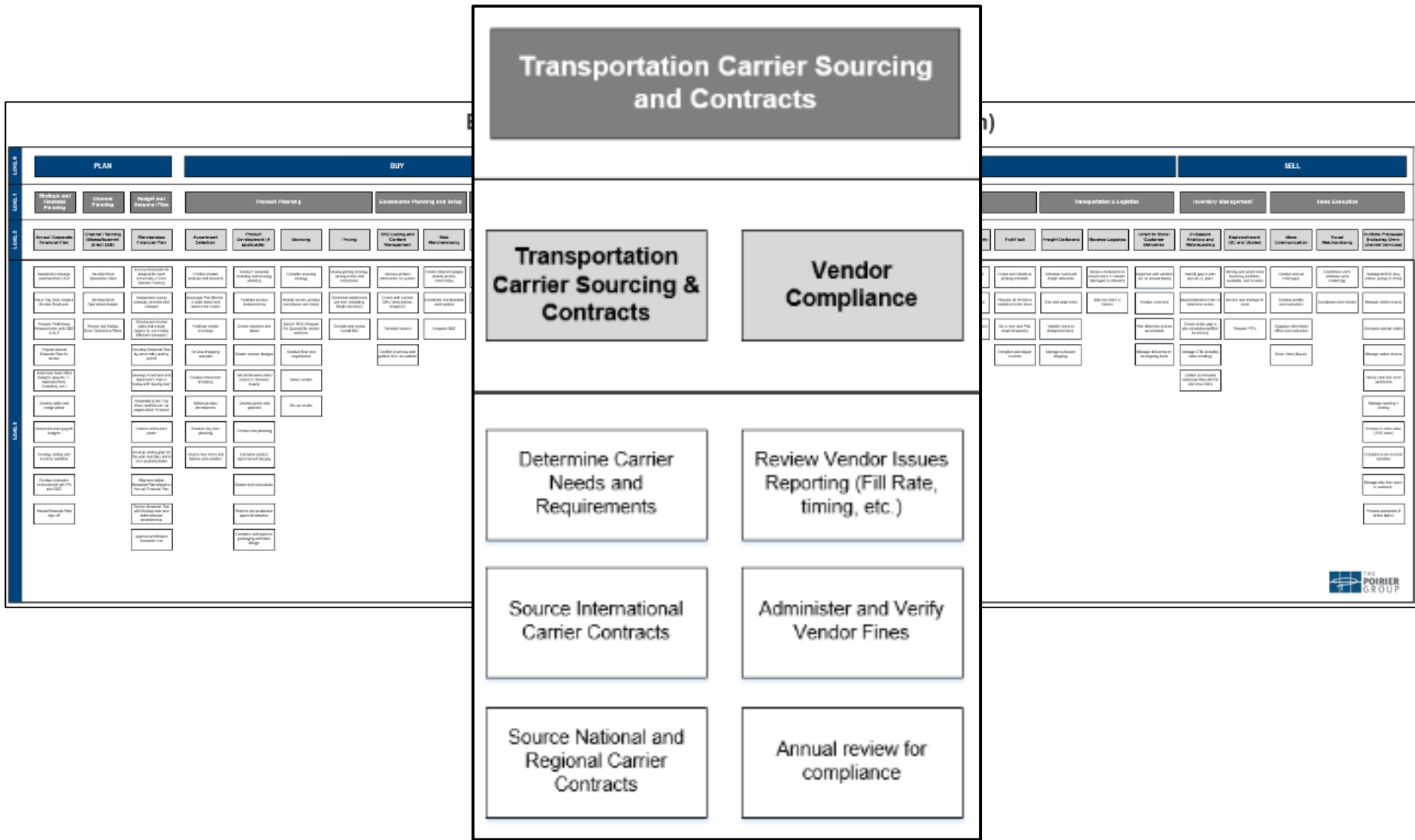
Deep Dive 1 – Carrier/Fleet Costs

Automated carrier or internal fleet analysis (inbound, outbound, transfer) – many leveraging AI, or RPA

Total Freight Spend
- Small Parcel • LTL • Air • Other

$350,019
$879,132
$1,4??,478
$627,516

137 Carriers/Entities (vendors) Used for Freight

Outbound Spend by Freight Type
- Small Parcel • LTL • Other

$198,285
$14,687
$978,251

31 Small Parcel Carriers, 27 LTL Carriers, 11 Other Carriers

Inbound Spend by Freight Type
- Small Parcel • LTL • Air • Other

$334,066
$44,000
$214,000
$879,132

28 Small Parcel Carriers, 22 LTL Carriers, 2 Air Freight Carriers, 63 Other Carriers/Entities

Interbranch Spend by Freight Type
- Small Parcel • LTL • Other

$215,231
$1,245
$4??,227

15 Small Parcel Carriers, 10 LTL Carriers, 1 Other Carriers

Actual Charged: $8,135 @16K KG

Actual Pounds Shipped: 862 KG

Total Over Charged: ~$7,000+

Top 20 Carriers represents 91% of Total Freight

Small Package

Purolator Courier	➡	$1,179,713
NATIONEX	⬇	$50,293
UPS Canada – Delivery	⬇	$41,880
MBW COURIER INC.	⬇	$29,015
AXE COURIER SOLUTIONS	⬇	$21,357
OLS LOGISTICS CANADA LTD.	⬇	$19,253
UPS Canada – Brokerage	⬇	$18,393

Air

LIVINGSTON INTERNATIONAL TOTAL TRANSPORTATION SOLUTIONS	⬇	$879,597

LTL

PUROLATOR FREIGHT	⬇	$222,627
TRIMBLE NAVIGATION (NA)	⬇	$103,027
MIDLAND TRANSPORT LIMITED	⬇	$59,924
MANITOULIN TRANSPORT	⬇	$51,105
XPO Logistics (LSO)	⬇	$35,904
PILOT FREIGHT SERVICES (CAD)	⬇	$20,096
MORNEAU TRANSPORT	⬇	$18,066

Other

LIVINGSTON INTERNATIONAL TOTAL TRANSPORTATION SOLUTIONS	⬇	$113,709
	⬇	$82,797
DE LAGE LANDEN	⬇	$80,025
BLACKBURN MANUFACTURING	⬇	$41,139
HARMONIANCHUI TRADING CO. LTD.	➡	$20,067

Legend
- ➡ =Not enough information to determine savings
- ⬇ =Expert knowledge and rate comparison, shows there are savings
- ➡ =Negotiated contract has little to no savings

1. **Having great master data, in one spot is critical**
2. **There are organizations and tools to rapidly and dynamically assess your freight spend, by carrier, against benchmark or comp.**
3. **Spot market assessments and niche benchmarks**

Zooming In – Distribution Centre Optimization

Distribution Centre Management

Inbound Freight Scheduling	Receiving and PO Reconciliation	Putaway	Inventory Integrity	Pick/Pack/Ship
Refer to scheduling portal/transportation management system	Receive item and check quantity	Receive request to putaway Incoming pallets	Receive request for cycle count	Create and Distribute picking schedule
Review Inbound Orders 1 week out	Contact corporate for approval (if overage)	Put the item in the System designated Location	Conduct cycle count	Request all the items racked to be let down
Schedule Delivery Appointment with the Carrier	Send proof of delivery to vendor (if shortage)	Manually key Item into location it's placed in (if not automatically generated)	Update discrepancies in WMS	Go to item and Pick required quantity
	Dispose of product (if damaged/unusable)			Complete and depart invoices
				Sort and wrap items
				Transfer items to designated dock

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Deep Dive 2 – Optimizing Within the 4 Walls

Many DC's are still struggling with the basics. Isolated improvements aren't connected to the whole or even begin bottom up from the operators. Doing 24-36 month planning, great business cases and taking on what the organization can absorb continues to be critical

19 initiatives have been grouped into **8 program areas**, and address **96%** of all paint points captured.
Estimated impact across all programs is estimated to be **~$6.5M per annum**, over a **24-month** implementation timeframe.
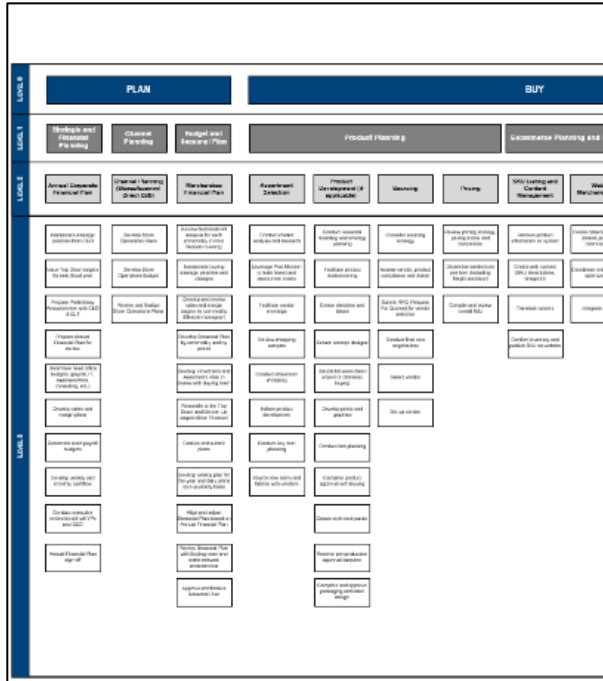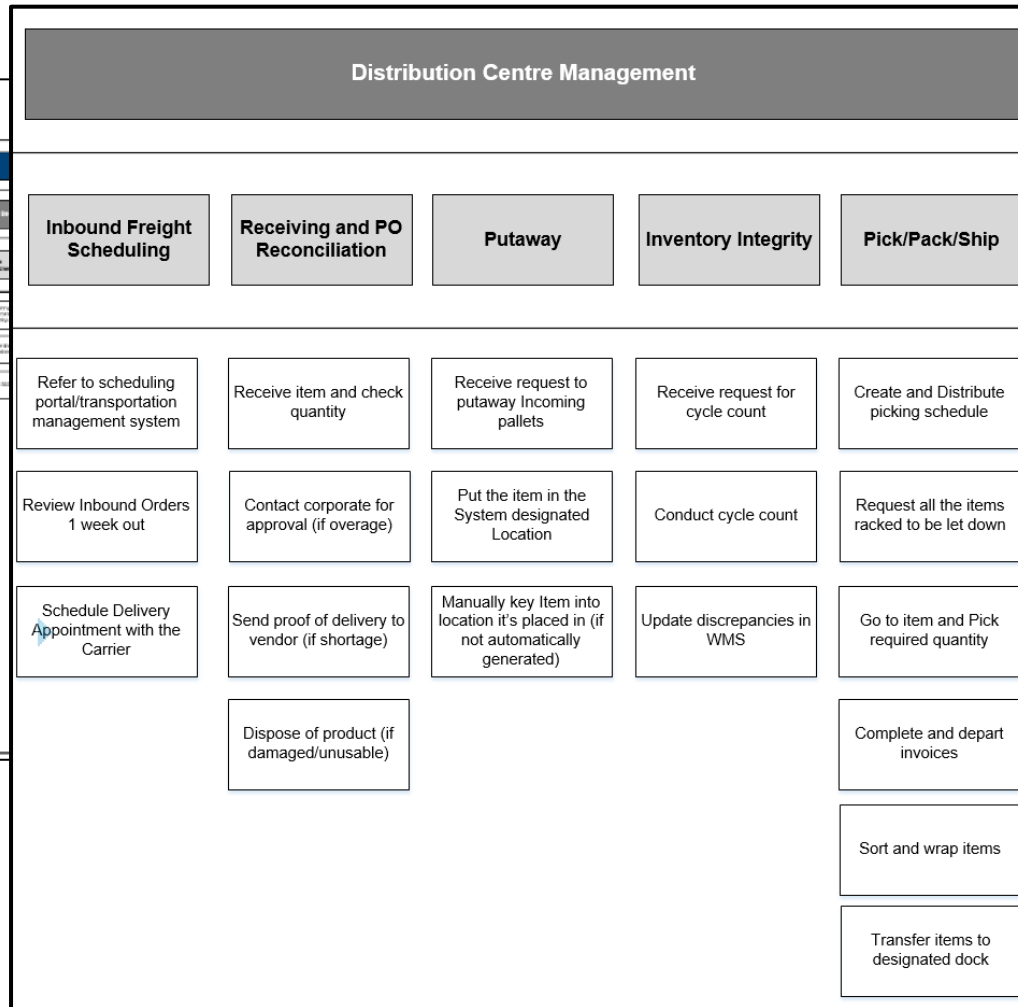
	Corporate Strategy & Planning	Standardization	Logistics Efficiencies	Safety	Operational Clock	Technology Enablement	Training & Development	Modernization
Projects	❑ Leadership Workshop ❑ Continuous Improvement Culture ❑ Change Management ❑ Balanced Scorecard	❑ Roles & Responsibility ❑ Process Documentation & Automated SOP Workflows	❑ Reengineering Pack Process ❑ Pick Path Optimization ❑ Demand & Resource Planning ❑ Appointment Scheduling	❑ Safety Plan 2.0	❑ Operational Clock & Dock Flow	❑ Return & Incident Tracking ❑ New WMS Implementation w/ Auto Wave Release, Dynamic Pick Path	❑ Recruitment Assessment ❑ Training Program ❑ Compensation Review	❑ Reconfiguration of DC ❑ Pick to Light ❑ Voice Pick
Annual Benefits (after project implementation)	$1,012,674	$373,931	$567,117	$206,500	$175,648	$1,401,087	$710,497	$2,230,000
% of Pain Points	6.1%	19.3%	22.8%	0.9%	7.0%	20.2%	11.4%	7.9%
Time to Implement	1+ year	4 Months	24 Months (across 3 phases)	6 Weeks	8 Months	11 Months	14 Months	6+ Months

Advanced technologies such autopick, guided vehicles, bulk RFID or drone technologies (for dynamic cycle counting and lifecycle management) and IoT are great but how often have you seen these as "silver bullets" in your network?

Many organizations just need to execute the basics consistently, over a period of time
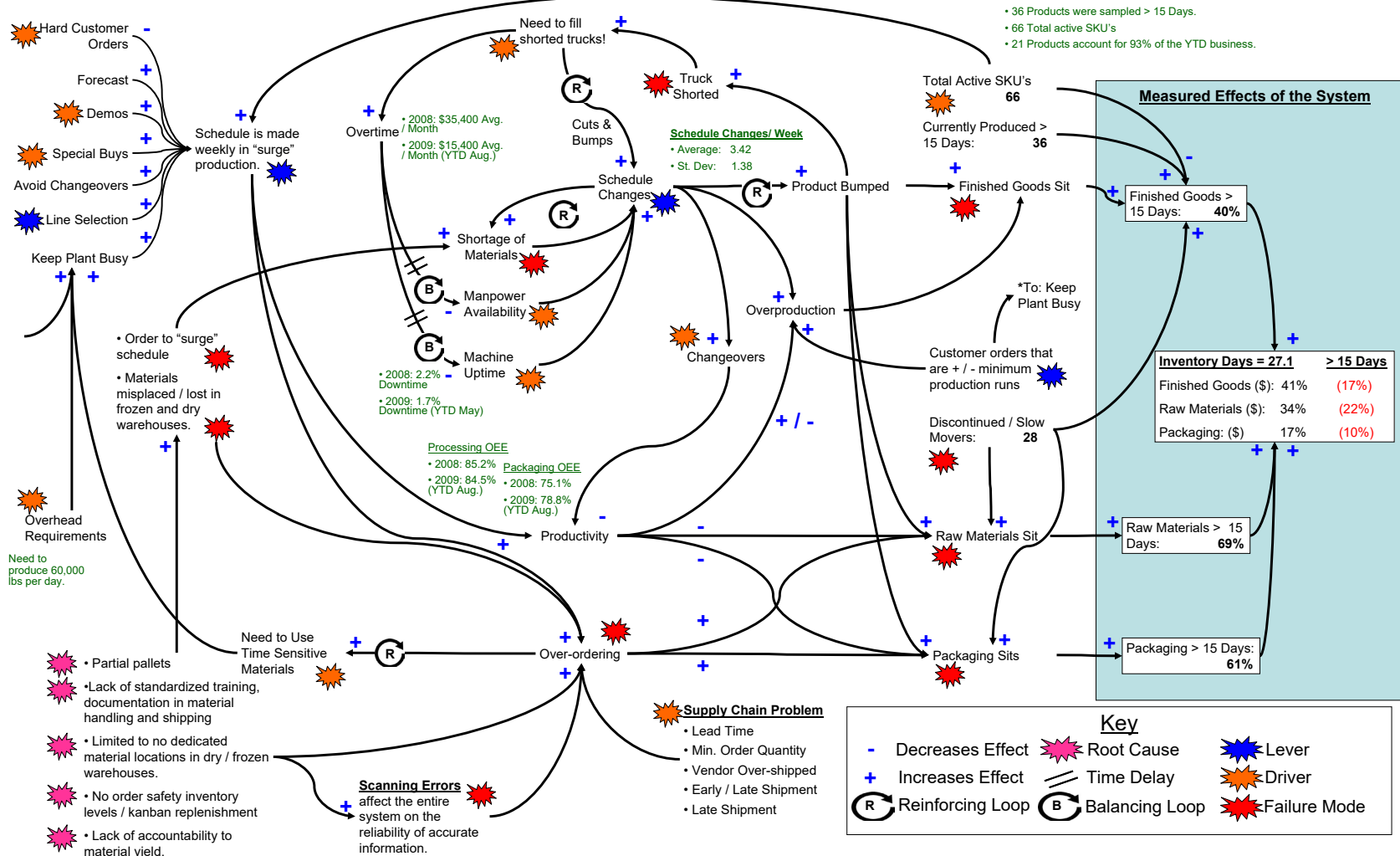
Zooming In – Dynamic Inventory Management

Distribution Centre Management

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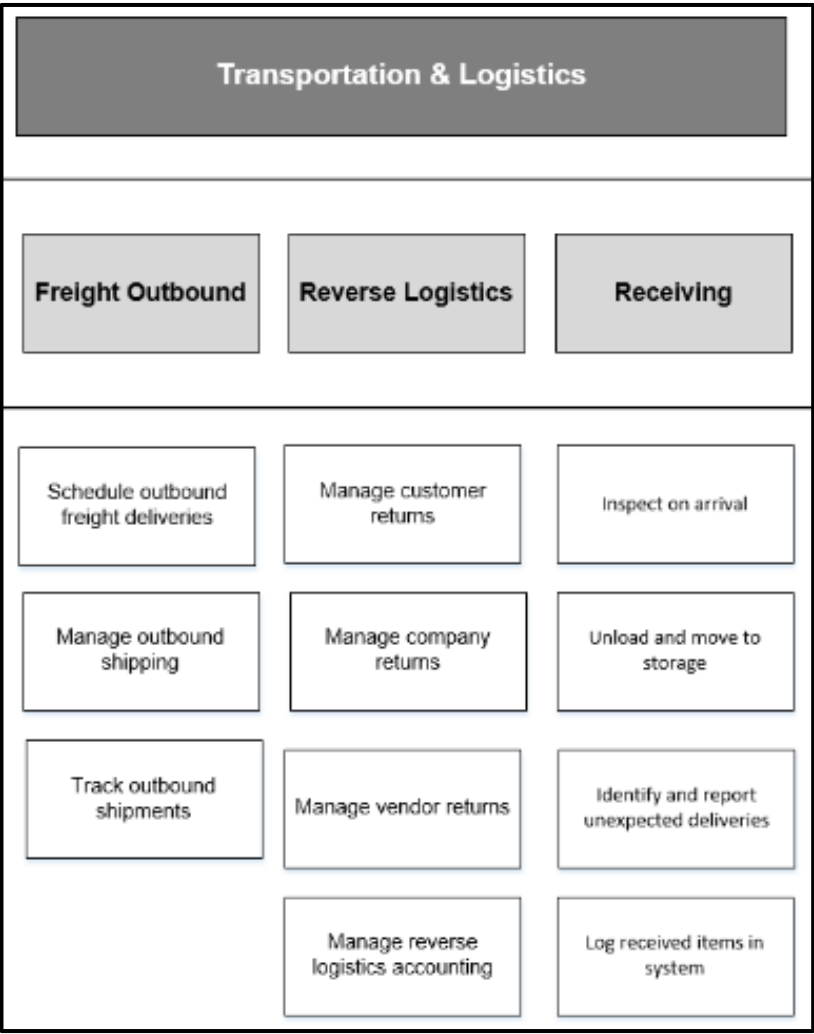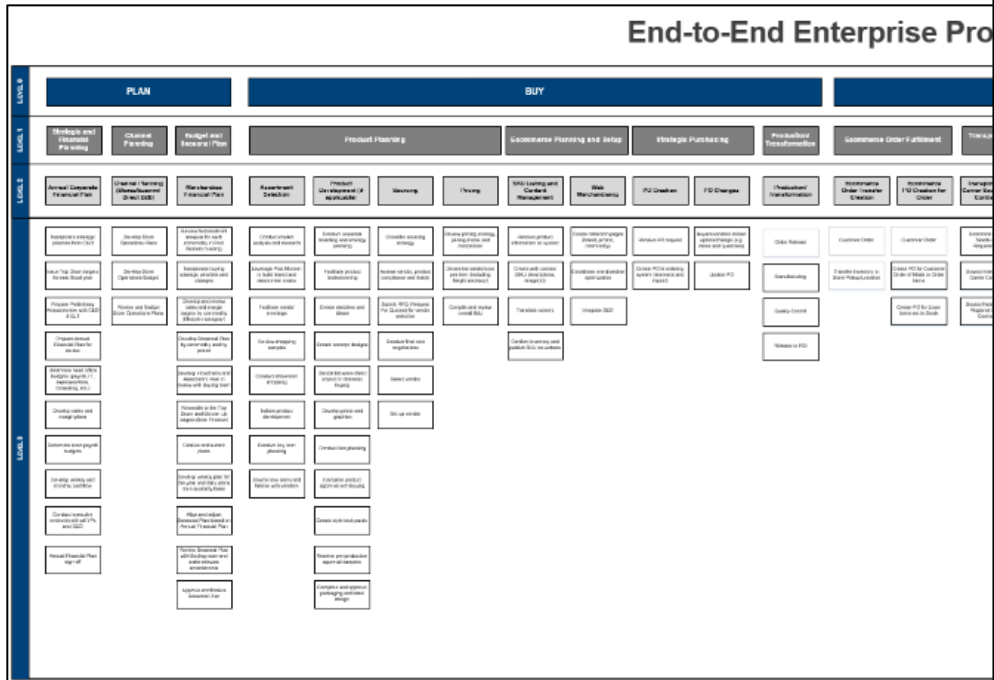# Deep Dive 3 – Understanding Complex Inventory Effects

This is a relatively simple example for one location, $200M sales, 50-100 finished good SKU's...

Inventory Optimization – Causal Loop Diagram

- 36 Products were sampled > 15 Days.
- 66 Total active SKU's
- 21 Products account for 93% of the YTD business.

Measured Effects of the System

Total Active SKU's: **66**

Currently Produced > 15 Days: **36**

Finished Goods > 15 Days: **40%**

Inventory Days = 27.1		> 15 Days
Finished Goods ($):	41%	(17%)
Raw Materials ($):	34%	(22%)
Packaging: ($)	17%	(10%)

Raw Materials > 15 Days: **69%**

Packaging > 15 Days: **61%**

Need to fill shorted trucks!

Truck Shorted

Cuts & Bumps

Schedule Changes/ Week
- Average: 3.42
- St. Dev: 1.38

Schedule Changes

Product Bumped

Finished Goods Sit

Overtime
- 2008: $35,400 Avg. / Month
- 2009: $15,400 Avg. / Month (YTD Aug.)

Schedule is made weekly in "surge" production.

Hard Customer Orders

Forecast

Demos

Special Buys

Avoid Changeovers

Line Selection

Keep Plant Busy

Shortage of Materials

Manpower Availability

Machine Uptime
- 2008: 2.2% Downtime
- 2009: 1.7% Downtime (YTD May)

Overproduction

Changeovers

Customer orders that are + / - minimum production runs

*To: Keep Plant Busy

Discontinued / Slow Movers: **28**

- Order to "surge" schedule
- Materials misplaced / lost in frozen and dry warehouses.

Overhead Requirements

Need to produce 60,000 lbs per day.

Processing OEE
- 2008: 85.2%
- 2009: 84.5% (YTD Aug.)

Packaging OEE
- 2008: 75.1%
- 2009: 78.8% (YTD Aug.)

Productivity

Raw Materials Sit

Packaging Sits

Need to Use Time Sensitive Materials

Over-ordering

- Partial pallets
- Lack of standardized training, documentation in material handling and shipping
- Limited to no dedicated material locations in dry / frozen warehouses.
- No order safety inventory levels / kanban replenishment
- Lack of accountability to material yield.

Scanning Errors affect the entire system on the reliability of accurate information.

Supply Chain Problem
- Lead Time
- Min. Order Quantity
- Vendor Over-shipped
- Early / Late Shipment
- Late Shipment

Key

-	Decreases Effect		Root Cause		Lever
+	Increases Effect		Time Delay		Driver
R	Reinforcing Loop	B	Balancing Loop		Failure Mode

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28

Deep Dive 3 – Understanding Complex Inventory Effects

How often are we understanding the full impact of a given change like MOQ's, safety stock, scheduling changes, etc.

Inventory Optimization – Causal Loop Diagram

- 36 Products were sampled > 15 Days.
- 66 Total active SKU's
- 21 Products account for 93% of the YTD business.

Hard Customer Orders +
Forecast –
Demos –
Special Buys
Avoid Changeovers
Line Selection
Keep Plant Busy + +

Need to fill shorted trucks! +
Overtime
- 2008: $35,400 Avg. / Month
- 2009: $15,400 Avg. / Month (YTD Aug.)

Schedule is made weekly in XOXO production. +

Cuts & Bumps

Truck Shorted +

Schedule Changes/ Week
- Average: 3.42
- St. Dev: 1.38

Schedule Changes

Product Bumped +
Finished Goods Sit

Total Active SKU's **66**
Currently Produced > 15 Days: **36**

Measured Effects of the System

Finished Goods > 15 Days: **40%**

Shortage of Materials –
Manpower Availability –
Machine Uptime
- 2008: 2.2% Downtime
- 2009: 1.7% Downtime (YTD May)

Overproduction –
Changeovers

*To: Keep Plant Busy

Customer orders that are + / - minimum production runs

Inventory Days =		> 15 Days
Finished Goods ($)	1%	(17%)
Raw Materials ($):	4%	(22%)
Packaging: ($)	7%	(10%)

Order to kanban re-order point.
Materials organized, 5S'ed, known.

Overhead Requirements

Need to produce 60,000 lbs per day.

Processing OEE
- 2008: 85.2%
- 2009: 84.5% (YTD Aug.)

Packaging OEE
- 2008: 75.1%
- 2009: 78.8% (YTD Aug.)

Productivity

Discontinued / Slow Movers: **28**

Raw Materials Sit
Raw Materials > 15 Days: **69%**

Need to Use Time Sensitive Materials +
Over-ordering

Packaging Sits
Packaging > 15 Days: **61%**

- Lack of standardized training, documentation in material handling and shipping
- Lack of accountability to material yield.

Scanning Errors affect the entire system on the reliability of accurate information.

Supply Chain Problem
- Lead Time
- Min. Order Quantity
- Vendor Over-shipped
- Early / Late Shipment
- Late Shipment

Key
– Decreases Effect	Root Cause	Lever
+ Increases Effect	Time Delay	Driver
R Reinforcing Loop	B Balancing Loop	Failure Mode

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We are starting to see more complex ecosystems like this digitally, with the ability to make dynamic changes on the fly, or predict failures

Zooming In – Dynamic Network Rationalization and Scenario Planning

Deep Dive 4 – Dynamic, Network Modeling

Being able to dynamically create and assess scenarios in your network, simple or complex still continues to be challenging and time consuming. Dynamic modeling based on dynamic performance data is differentiating the best from the average.

5/ Additional DC (Mixed Volume)

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Number of Nodes **3** → **Locations:** East DC, West DC, Additional DC

Volume

62.7 Million Units

Cost   % of Sales $ Per Unit

$ 144.5 Million   *6.5%* $ 2.31 per Unit

$ 58 Million   *2.6%* $ 0.92 per Unit

$ 10.1 Million   *0.37%* $ .16 per Unit

$ 3.39 per Unit

$ 23.73 per Line

Service

47% within Next Day delivery

Scenario	Facilities	Outbound Cube	Suggested SqFt	Est. SKUs
Scn 5	East DC	17,150,119	477,616	27000
	West DC	35,412,793	986,215	29300
	New DC	3,971,138	110,593	7779
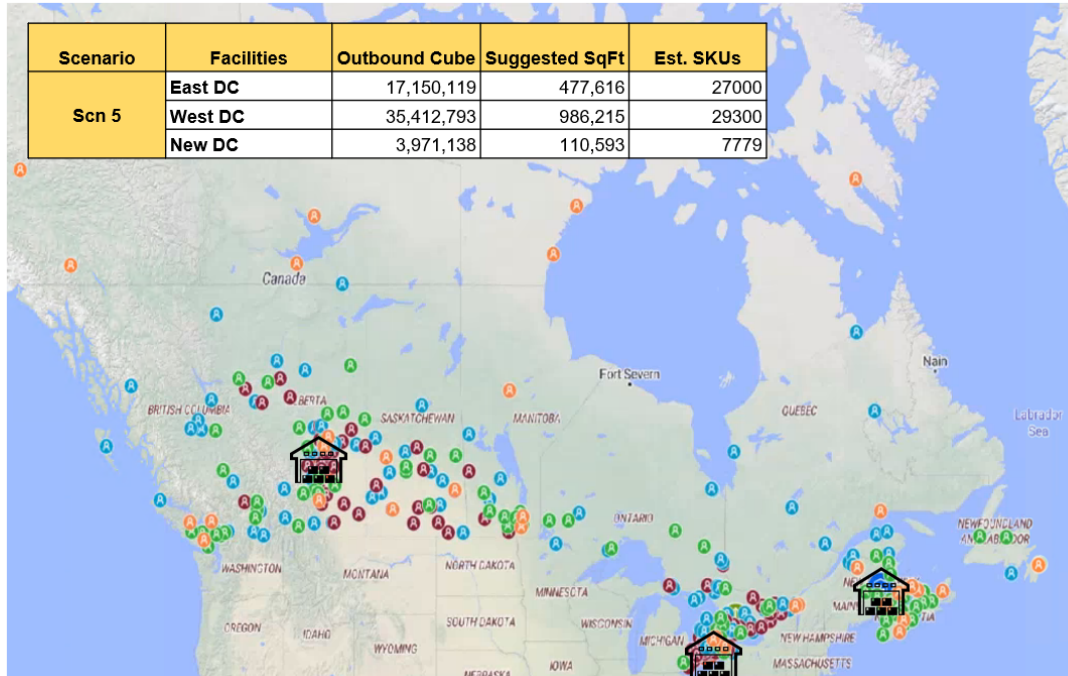
Network modeling simulation software and vendor ecosystems are expanding into the small to mid market rapidly to reduce organizational energy into understanding the unknown.

Deep Dive 5 – Dynamic Portfolio Optimization

Custom weighting system for examining your SKU performance portfolio

Product Offering Optimization Methodology
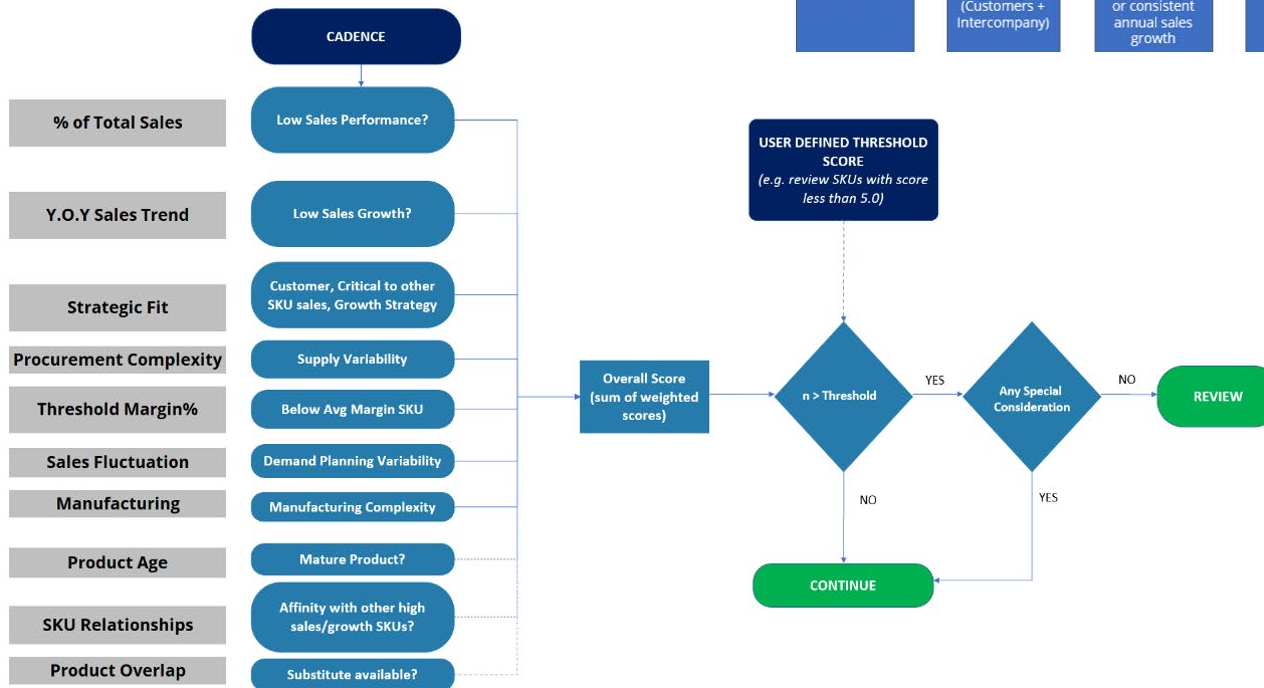
SKU BENEFIT SCORE				SKU BURDEN SCORE		
30%	20%	20%	30%	40%	30%	30%
Margin (%)	**Annual Sales**	**Sales Growth**	**Strategic Fit**	**Manufacturing Complexity**	**Supply Variability**	**Demand Planning Variability**
Annual Margin	Total Revenue (Customers + Intercompany)	New Products or consistent annual sales growth	Score based on Value, Customer	Difficult to produce	Supplier Risk to acquire raw material	Fluctuation in orders per month

Left column labels:
- % of Total Sales
- Y.O.Y Sales Trend
- Strategic Fit
- Procurement Complexity
- Threshold Margin%
- Sales Fluctuation
- Manufacturing
- Product Age
- SKU Relationships
- Product Overlap

Flowchart (CADENCE):
- Low Sales Performance?
- Low Sales Growth?
- Customer, Critical to other SKU sales, Growth Strategy
- Supply Variability
- Below Avg Margin SKU
- Demand Planning Variability
- Manufacturing Complexity
- Mature Product?
- Affinity with other high sales/growth SKUs?
- Substitute available?

USER DEFINED THRESHOLD SCORE
(e.g. review SKUs with score less than 5.0)

Overall Score (sum of weighted scores) → n > Threshold → YES → Any Special Consideration → NO → REVIEW

n > Threshold → NO → CONTINUE

Any Special Consideration → YES → CONTINUE

SKU interdependencies are often more complex than expected. Building in known VARIANCE into our optimization/rationalization models is critical

Deep Dive 5 – Dynamic Portfolio Optimization

- **Total SKUs evaluated**: 1633
- **SKUs evaluated using "Multiplier" Score**
  - *Multiplier = Benefit * Burden*
- **Average Multiplier Score = X**

Superclass	FY-22 Sales
Allergens	$ 26,484,984.11
Drug Residues	$ 2,804.94
Food Quality & Nutritional Analysis	$ 2,531,057.94
General Micro	$ 16,398,326.19
General Sanitation	$ 10,949,532.04
Natural Toxins	$ 17,323,555.55
Neogen Culture Media	$ 12,593,565.81
Other products	$ 1,188,480.68
Other Products-FS	$ 68,270.49
Pathogens	$ 4,228,424.36
Dairy Drug Residues	$ 329.00
Data Systems	$ 3,671.22
Genomics	$ 422,909.60
Lab Services	$ 35,592.32
Non-Dairy Drug Residues	$ 331,165.74
Colitag	$ 808,598.64
Biosecurity	$ 60,153.65

Data Source: FS Product > Gross Margin Report
Timeframe: FY2022 (for Sales data) and FY2021/20 (for Sales Growth)
Regions: X

Bubble Size = Number of SKUs

HIGH BENEFIT

BENEFIT

LOW BENEFIT

Planning/ Growth Focus Area

SKUs to be reviewed

HIGH BURDEN — BURDEN — LOW BURDEN
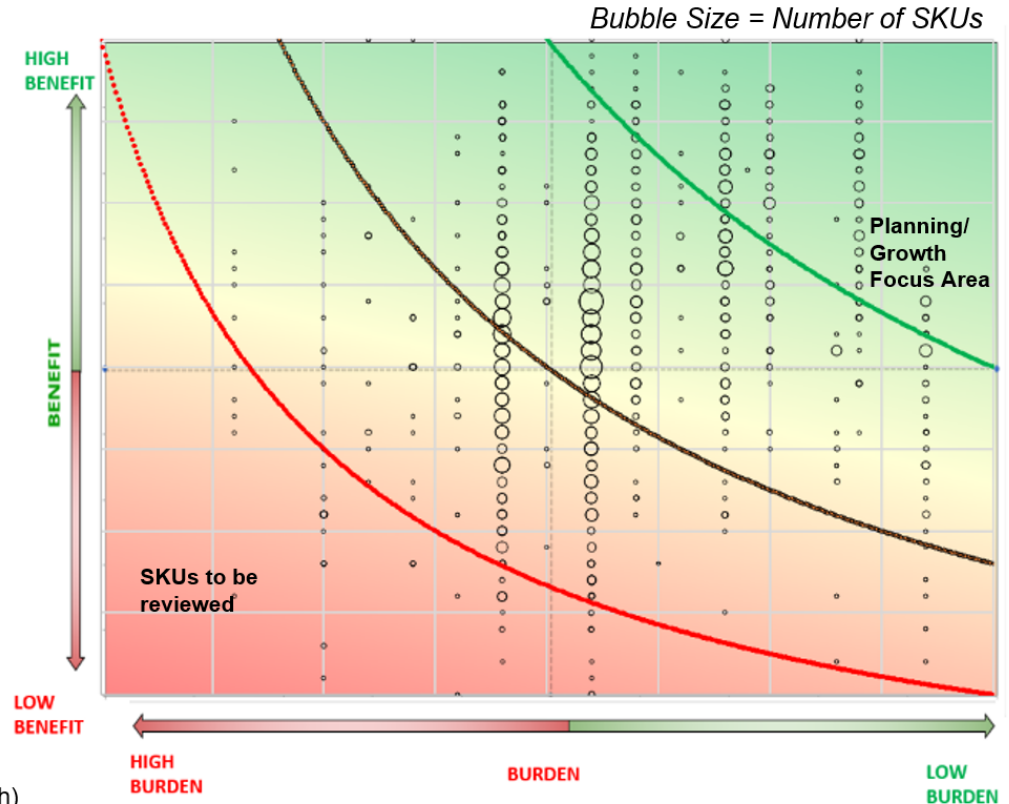
Organizations that are taking their Supply Chain performance and a detailed understanding of variation as they examine SKU's and downstream make-to-forecast, make-to-buy or hybrid models as part of an integrated S&OP process are moving up in maturity

Zooming In – RPA/Automation for Shared Services
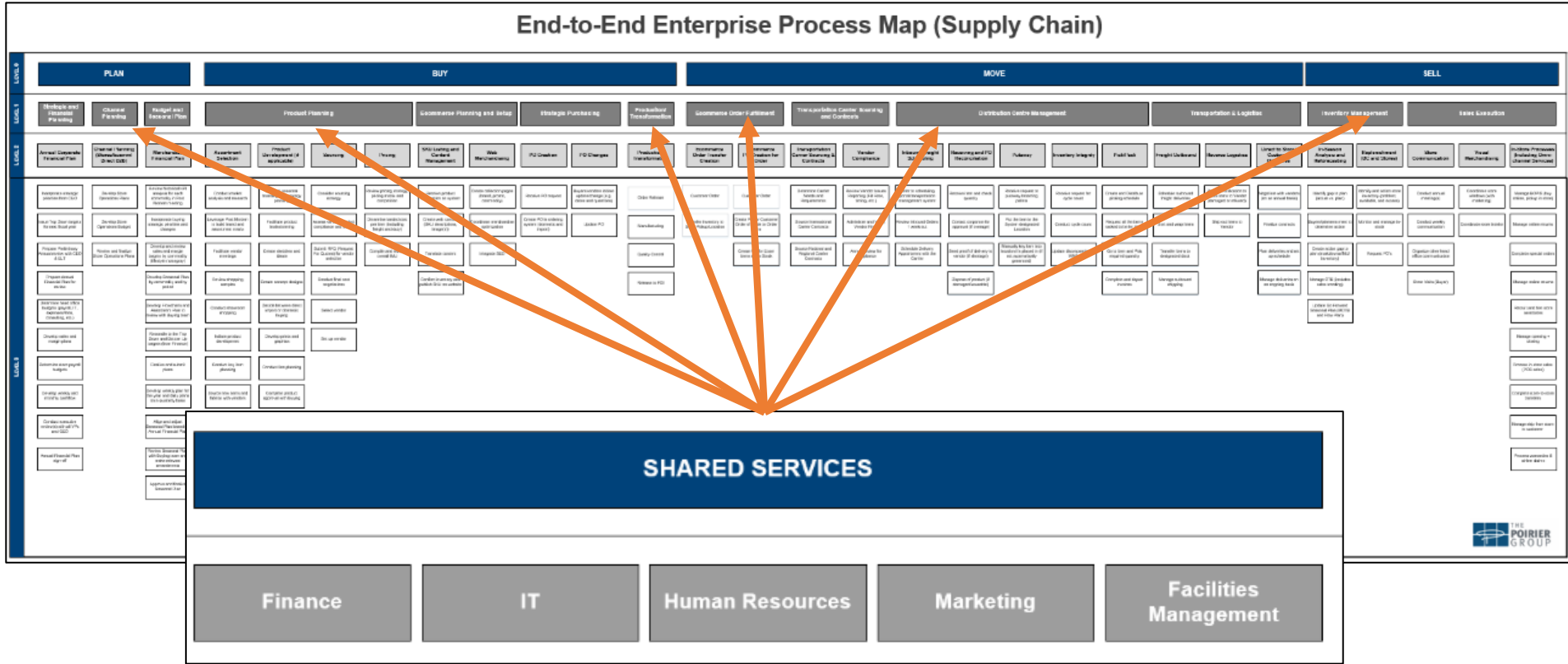
Deep Dive 6 – Simple RPA Applications

Off the shelf or built-in RPA and automation applications are being leveraged across organizations of all size.

Of the 67 steps within process X, TPG has identified **~13 process steps** as candidates for **full** automation and **~18 process steps** as candidates for **partial** automation; Currently, the cumulation of these steps require **2.9 FTE**
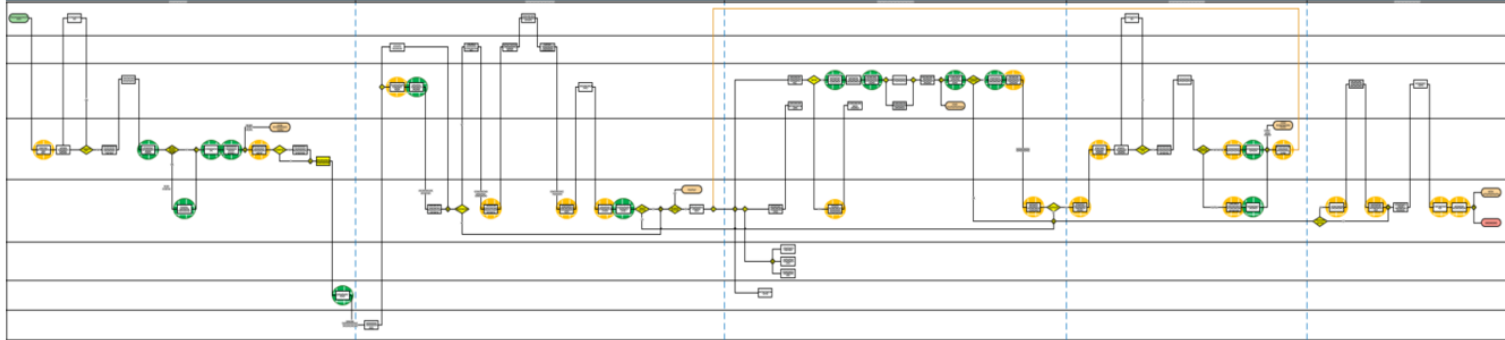
Workflow Example for Automated File Upload - Power Automate

Legend

Processes identified as potential candidates for full automation (i.e. manual tasks, manual workflows)

Processes identified as potential candidates for partial automation

Not all processes are great candidates. Time to implement can be days, not weeks or months.

Other Considerations and Conclusions

PEOPLE

- People costs across the board have gone up
- Flexibility is becoming key, but most organizations feel limited
- Temp agencies are getting overwhelmed, conversions to full time dwindling
- Creativity in investment and comp structures are paying off

ADVANCED TECHNOLOGIES

- RPA and AI are already being leveraged across the simple and complex – more attainable than one may think
- ChatGPT and other NLP's have limited case studies – be cautiously optimistic and don't underestimate data volume required (SOP's/Helpbots vs. Core Operational)
- Simulation platforms are migrating into the small to mid market along with mini-WMS's / TMS's

BENCHMARKING

- Beginning to differentiate organizations
- Do to your internal network at least
- Niche, sub-industry still challenging so consider partnering up / invest

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Conclusions

1. Understand your supply chain's maturity

2. Create and end-to-end view of your supply chain

3. Begin to make interventions leveraging the right tools, at the right time:

   a. Leverage benchmarks to understand what's possible (internal and external)
   b. Silver bullet technologies are fleeting – pragmatic options exist
   c. Weakest link in chain often needs "getting the basics right"
   d. Take on change that the organization can actually absorb
   e. Get great at business cases and realistic portfolio planning
   f. Build better demand volatility models and matriculate downwards

Just Ahead.....

2023 IISE Training and Development Opportunities:

23 Feb—Best Practice Case Studies: Building Great BPI Programs: Consumers Energy **Christine Wisniewski, VP Op Performance**

https://us06web.zoom.us/webinar/register/WN_crvTMTIFSdyNz3mjF8aviQ

*7 March—Creating an Inclusive Workplace Culture--*Yuri Ramirez, Director of Intel Global Engagement Program Office

https://us06web.zoom.us/webinar/register/WN_TxbEvghkSXSwL6nKFqgcxw

9 March—Integrated LeanSigma—How to Train it and Do it **Scott Sink**

https://us06web.zoom.us/webinar/register/WN_oUS4qZ-iRcKdu0uDz8GbLg

28 March—Best Practice Case Studies: Global Enterprise Excellence—Flex **Eduardo Toledo, VP Quality and Op Ex**

https://us06web.zoom.us/webinar/register/WN_0q56PHk8TpWBsWVDSKopYQ

Q2 'in the works' offerings for you:

- *Strategizing/Rationalizing Cost Reduction in 2023*

- *Best Practice Case Study—Data and Analytics at University Health Network, Toronto*

- *Sneak Preview of the IISE Annual Conference and CISE's Performance Excellence Track*

- *Creating Meaningful, Insightful Organizational/Operational Scorecards and Dashboards*

- *Revisiting Plan, Do, Study, Adjust for 2023*

Don't Miss our Upcoming Webinars:

UPCOMING WEBINAR:

Best Practices: Building Great Operations Performance Assurance Programs Consumers Energy

https://us06web.zoom.us/webinar/register/WN_crv TMTlFSdyNz3mjF8aviQ

Thursday, 23 Feb 11:30-12:30 pm Eastern

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Chris Wisniewski
https://www.linkedin.com/in/cwiz/
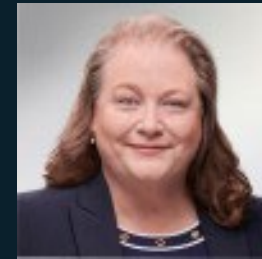
Chris is VP Operations Performance at Consumers Energy and a member of CISE.

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Don't Miss our Upcoming Webinars:

UPCOMING WEBINAR:

Creating Inclusive Workplace Cultures

https://us06web.zoom.us/webinar/register/WN_Tx bEvghkSXSwL6nKFqgcxw

Tuesday, 7 March 1:00-2:00 pm Eastern

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IISE Diversity, Equity, Inclusion Committee

Yuri Ramirez,
Director of Intel Global
Engagement Program Office
https://www.linkedin.com/in/ ywramirez/

Join Diana Berry, Chair
IISE's DEI Committee and
Yuri Ramirez, Intel, to learn
more about how Intel
Creates Inclusive
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to know...

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A short survey will be available to you as just prior to leaving the webinar, we'd appreciate your input.

Reach out if you have questions or other needs:

James Swisher jswisher@iise.org

Scott Sink ssink@jumpcurves.com

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Performance Excellence Track

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- David Poirier, TPG
- Kerri Alderman, UPS

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4 'hot topic' Interactive Sessions led by Thought Leaders

1. **Victoria Jordan—Emory Healthcare, Thomas Davis—Duke Healthcare and others..:** **Healthcare and Lifesciences** how ISE is and will continue to contribute;
2. **Kerri Alderman—UPS & Eleke Ukpabi—Ruan, Jim Tompkins, Yves Belanger:** Novel strategies and tactics to **address Supply Chain Challenges**
3. **David Poirier—The Poirier Group, Eduardo Toledo—Flex; Debbie Nightingale:** **Organizational and Operational Excellence of the Future**
4. **Scott Sink, Jared Frederici,** **Operational Analytics and ISE** How to create insights and provoke timely decisions and actions in the face of all the data

Hot topics of critical importance to leaders, managers, young professionals engaged in operational excellence work

5. **The ISE Outstanding Capstone Senior Design Showcase and Finalists Presentations:** See and Hear about the top 3-4 Finalists in our annual ISE Capstone Senior Design Competition. (Sunday-Monday)

6. **The Outstanding Service Systems Engineering Competition Finalist Presentations (Vittal Prabhu, PSU)—**See and Hear about the top 4 Finalists from our Annual Service Systems Engineering Competition. (Sunday)

7. **The Operational Excellence Division:** a multitude of sessions on various topics related to Organizational and Operation Excellence that will drill down, zoom in on topics and issues covered in our 3rd Module provided by CISE.

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8. The Performance Excellence Track was most innovated and one of most popular track of sessions last year—it will be even better this year

9. My first IISE conference in 1973 was in New Orleans, I got hooked and most of my most valued personal and professional relationships have come from IISE conferences;

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11. Have a Hurricane!!

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For *more information* on how **IISE** can play a role with your Professional Development needs:

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