TOC INNOVATION SUMMIT 2024

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# Using Roadrunner Rx Inventory Management Service to improve ERP systems

***Client case study***

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montera.

THEORY OF CONSTRAINTS TOCICO INTERNATIONAL CERTIFICATION ORGANIZATION

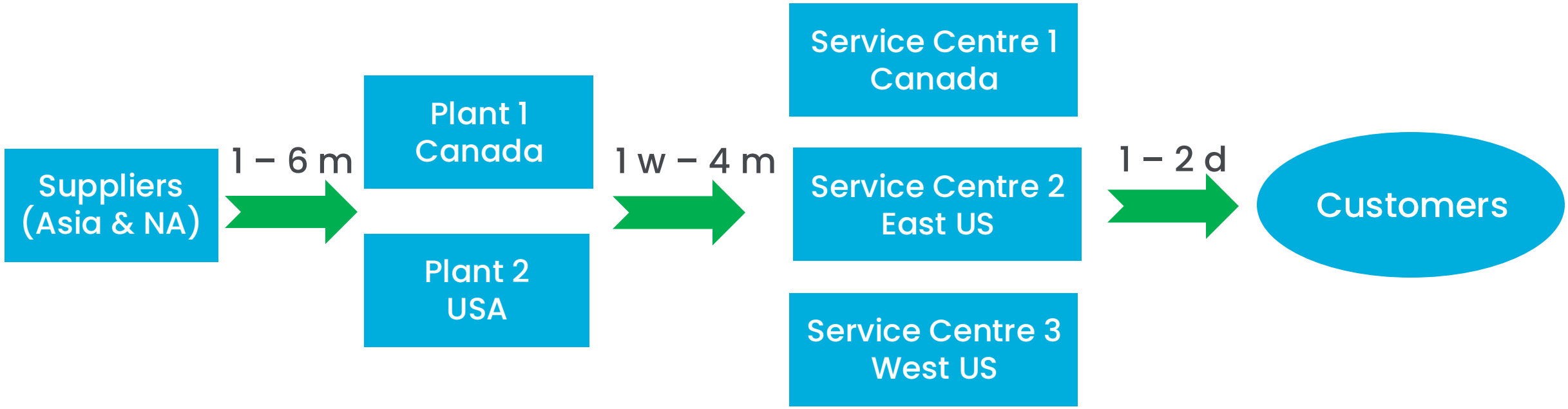
# Agenda

- Client overview
- Solution # 1
- Technology Investment Dilemma
- Solution # 2
- Roadrunner Rx Inventory Management Service
- Results
- Challenges
- Presenters' Bios

# Client Overview

- Manufacturer of heavy industrial products
- Servicing primarily oil & gas, energy, and chemical industries
- 2 manufacturing locations – Canada, USA
- Multiple service centres across North America
- Hundreds of SKUs, replacement parts and accessories – some common, some unique
- Very well established in the market with many experienced people
- Following traditional industry rules, lead times, relationships
- Focused more on manufacturing high quality products than optimizing inventory investment
- In the process of upgrading their company-wide ERP system

# Client Supply Chain




- Forecast / ERP driven
- Focused on customer service
- High inventory levels
- Low inventory turns

# Solution #1: New ERP (Replacement)

- Slow implementation at all manufacturing and service sites
- Significant resource requirements to support data accuracy – IT, supply chain, manufacturing, management
- User training and associated time commitment (overtime, stress and impact on customer service)
- Gradual realization that the new ERP system will not solve supply chain expertise and people availability problems
- Search for a different approach: potential for a TOC replenishment solution?

# Which List of material requirements would you choose?

**Assumption:**
**We can be accurate**

Algorithm One (MRP)
1
ƒ(Forecast.Safety intuition)
Rely on accuracy and forecast
Add safety stock as required
Adjust with intuition
Algorithm Two (DDR)
2
ƒ(Consumption.Buffer feedback)
Establish stock buffer "wall"
Absorb inaccuracy with buffer wall
Replenish what's consumed
Adjust with feedback loop
Assumption:
We can be accurate
Reality:
We can't be accurate

# Plan vs Reality

| Outcomes | ƒ (Forecast / ERP) | ƒ Buffer / DDR) |
|---|---|---|
| Inventory | Too much / too little | Much less / high turns |
| Shortages / Stealing | Frequent | Infrequent |
| Scheduling | Inflexible | Flexible |
| Overtime / Expedites | High | Low |
| On time delivery | Low | High |

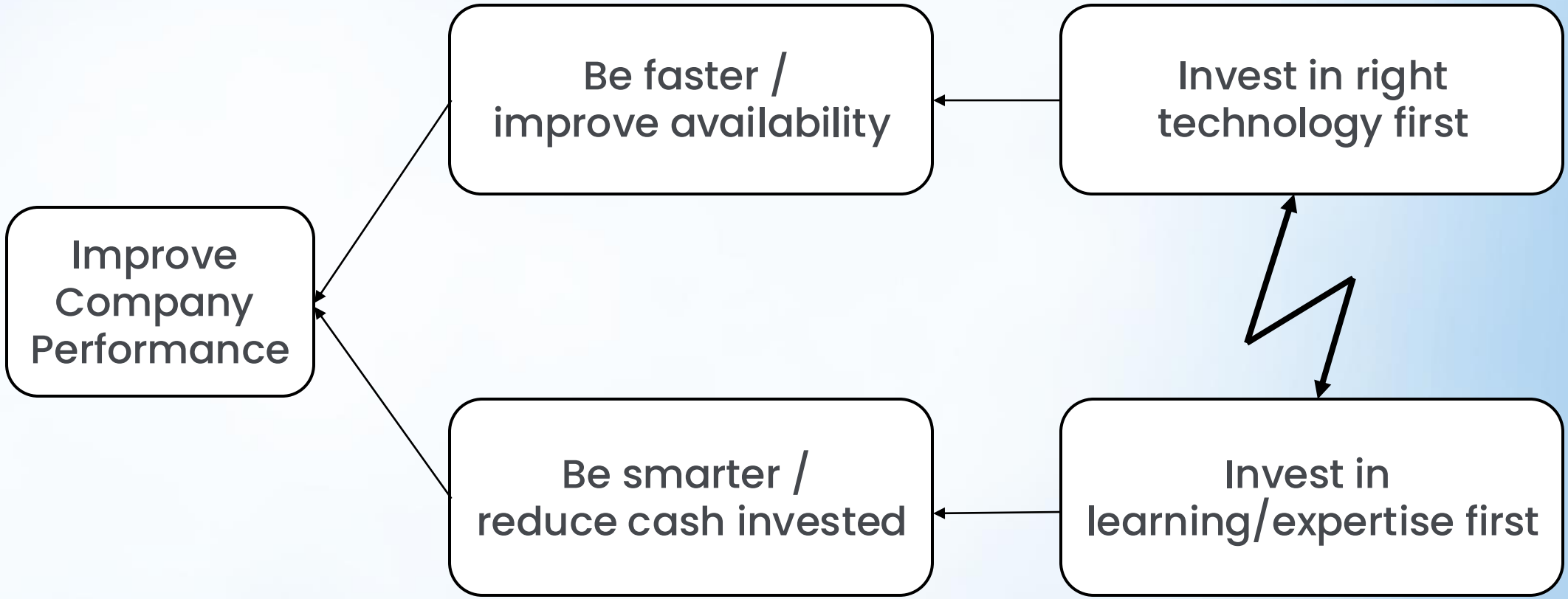
# Solution #2: TOC Replenishment

Critical Questions:

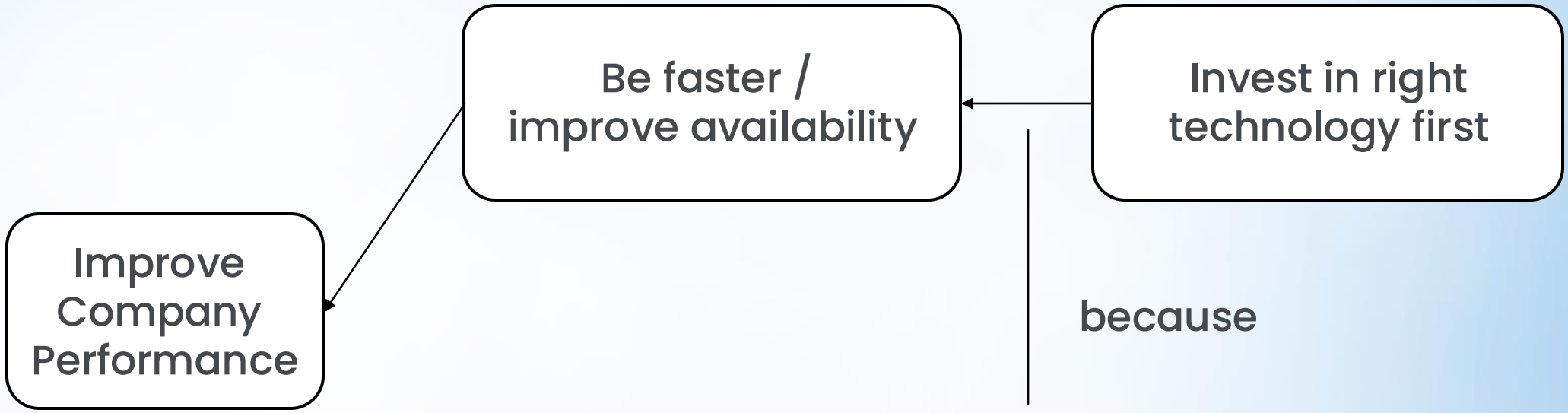
- How to quickly acquire TOC replenishment knowledge?
- How to enable the new ERP system to support it?
- How to build a multi-functional, international team of IT, TOC and inventory management experts for company-wide implementation?
- How much time do we have to successfully pilot and roll out across our organization?

(Typical signs of Technology Investment Dilemma…)

# Technology Investment Dilemma (Inventory Management)



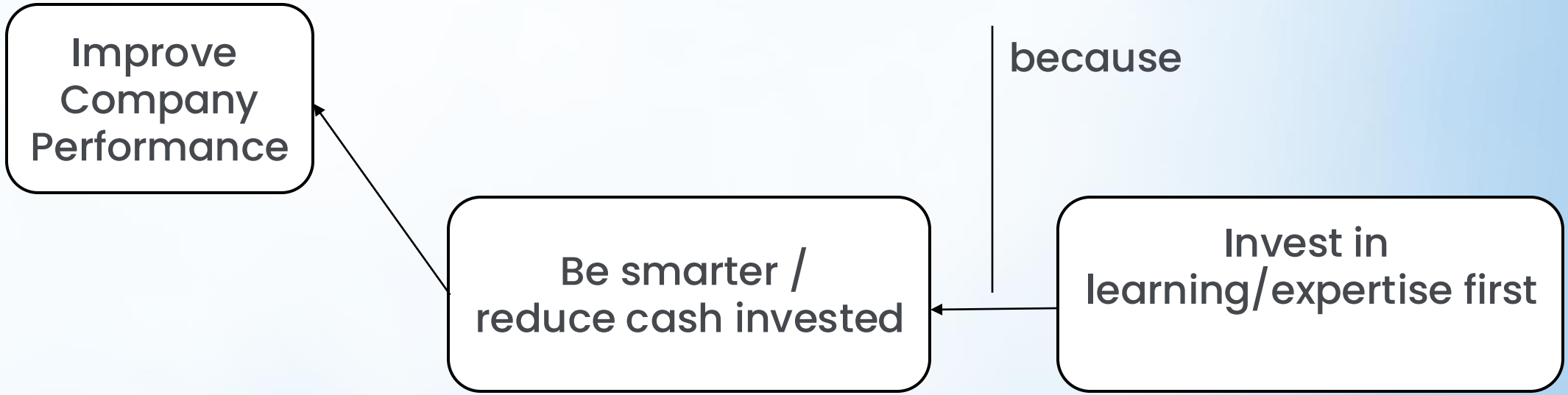
# Technology Investment Dilemma



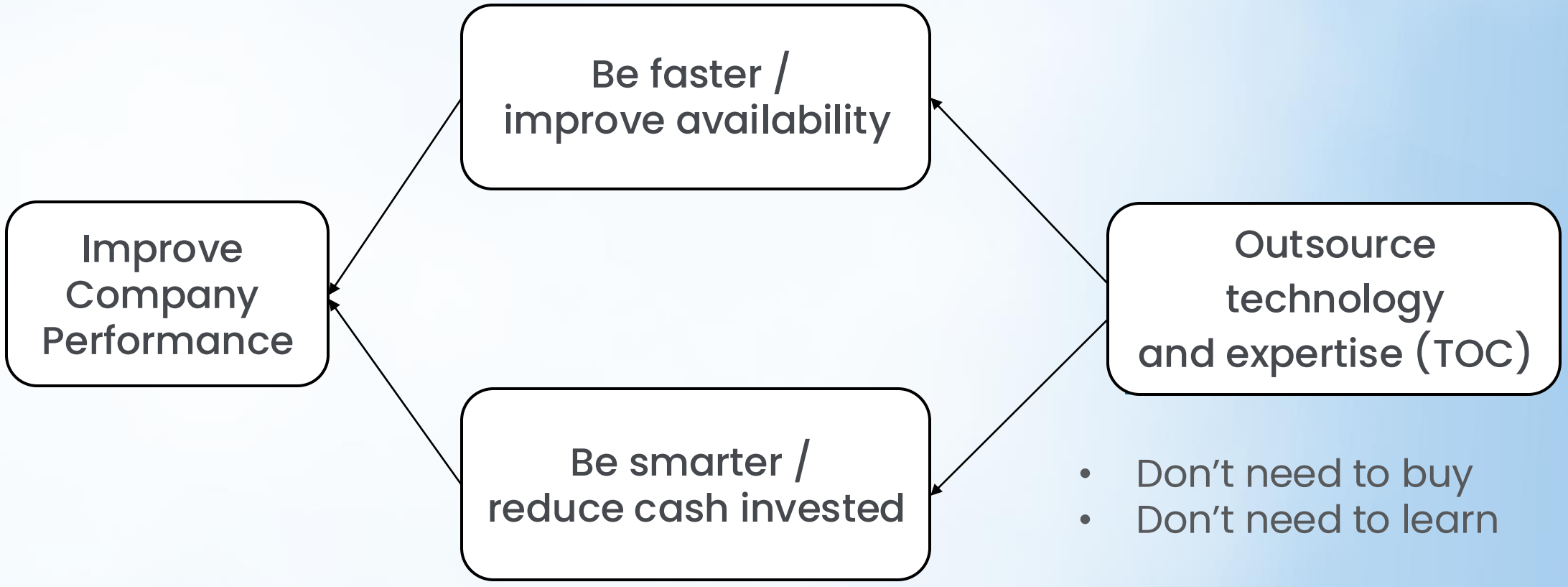

- Implementing right technology brings results faster
- We need to “own” and use technology (ERP) ourselves

# Technology Investment Dilemma

- Learning brings significant, sustainable results
- It takes a long time to internalize methodology (i.e., TOC)
- You need to know methodology to implement it correctly
- Companies need internal experts



# Technology Investment Dilemma




- Don’t need to buy
- Don’t need to learn

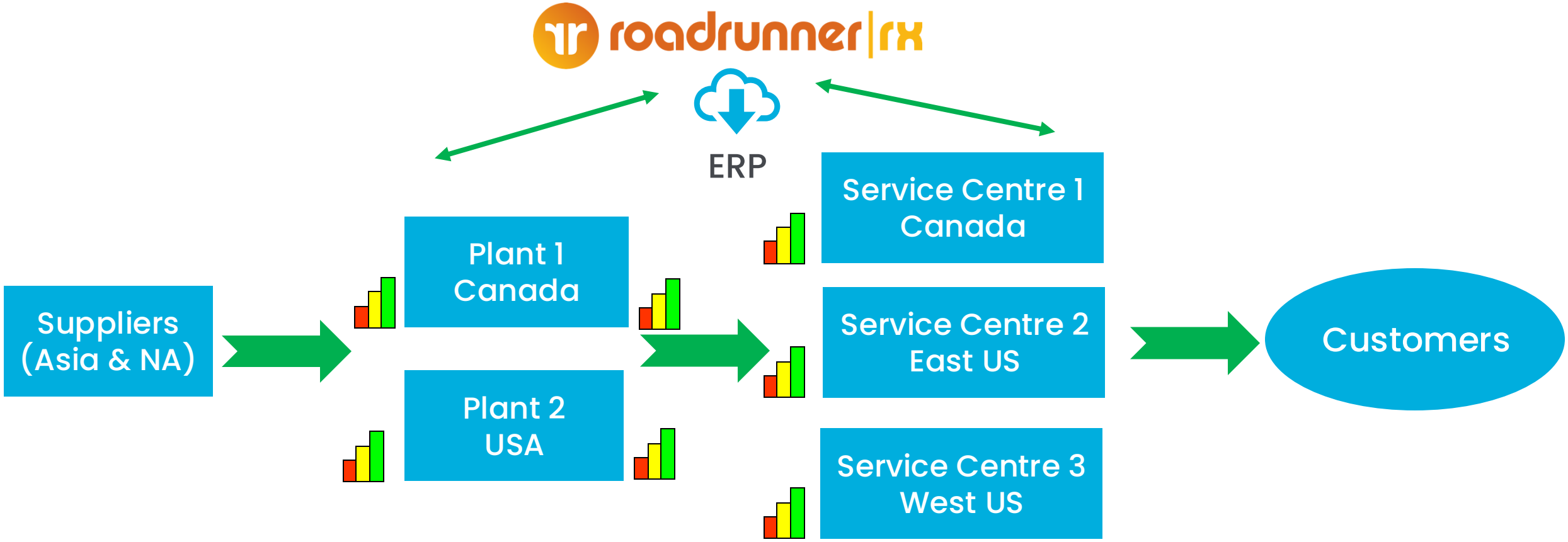
# Roadrunner Rx
## Inventory Management Service

Rationale:

- Transition from ERP / forecast-driven to TOC Replenishment principles
- Utilize proven technology to augment new / old ERP system
- Partner with an organization that can provide both

Together, develop a plan to improve inventory management process company-wide

# Roadrunner Rx IMS

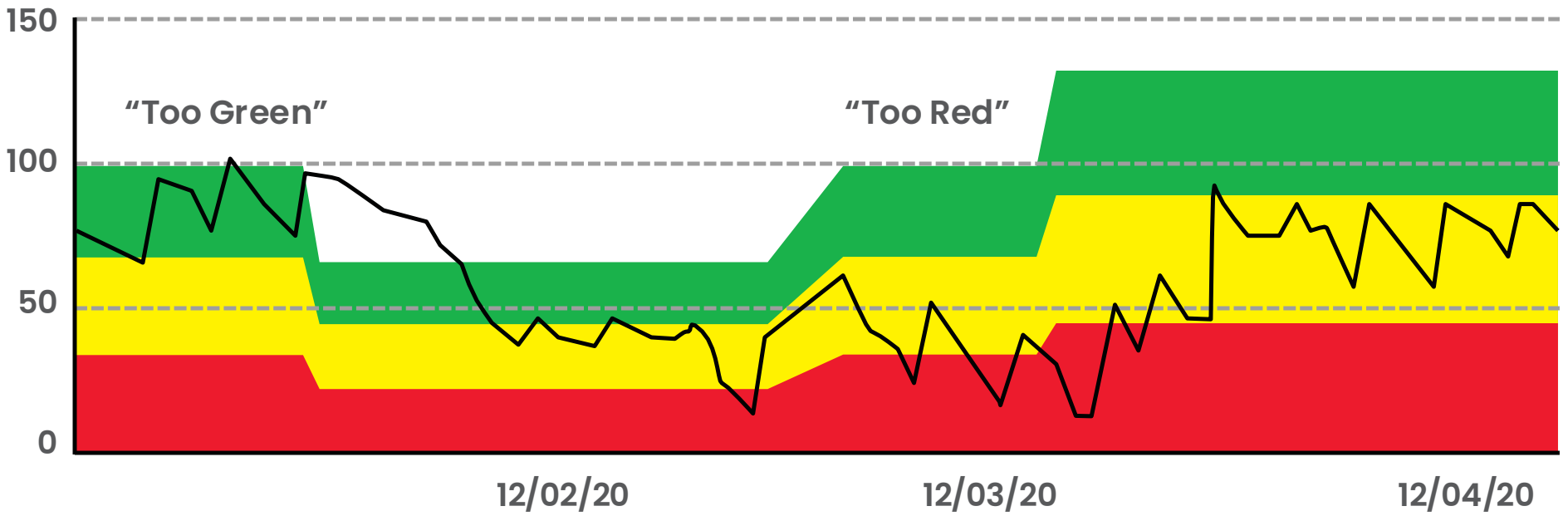



- Generate daily Purchase Order requirements
- Create an on-going Expedite List
- Identify excess / obsolete inventory
- Create Inventory Management Scorecard with Key Performance Indicators (KPIs)

# Roadrunner Rx IMS Implementation

- Established Roadrunner Rx IMS implementation team (Montera & Client)
- Designed Demand Driven Replenishment vision for the entire business
- Selected one Service Centre location to prove the concept
- Defined Roadrunner Rx IMS process guidelines
- Implemented cloud-based, Roadrunner Rx technology
- Agreed on data flow and inventory management process rules

# Roadrunner Rx IMS Implementation




- Determine Target Supply Level (TSL) for every SKU
- Replenish based on consumption and MOQ
- Monitor inventory level according to zone

- Decrease TSL when consistently green
- Increase TSL when consistently red

# Roadrunner Rx IMS Implementation

## New Behaviors

- No more forecasts (excluding new products)
- SKU level management
- Follow buffer signal (trust the system)
- Dynamic Feedback Loop

# About Roadrunner Rx IMS

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## Subscription includes:

- Manage Component / Raw Materials Buffer Inventories
  - *Design and re-size levels, locations & optimize turns*
  - *Help with New Products replenishment introductions*
- Communicate Daily Order Requirements - “What to Buy”
- Monitor Supply Chain Pipeline Status (ensure right supply)
- Design and maintain Inventory Performance Scorecard
- Evaluate Vendors and Purchasing Team’s Performance
- Generate slow and non-moving inventory reports
- Create Purchase Order Expedite List

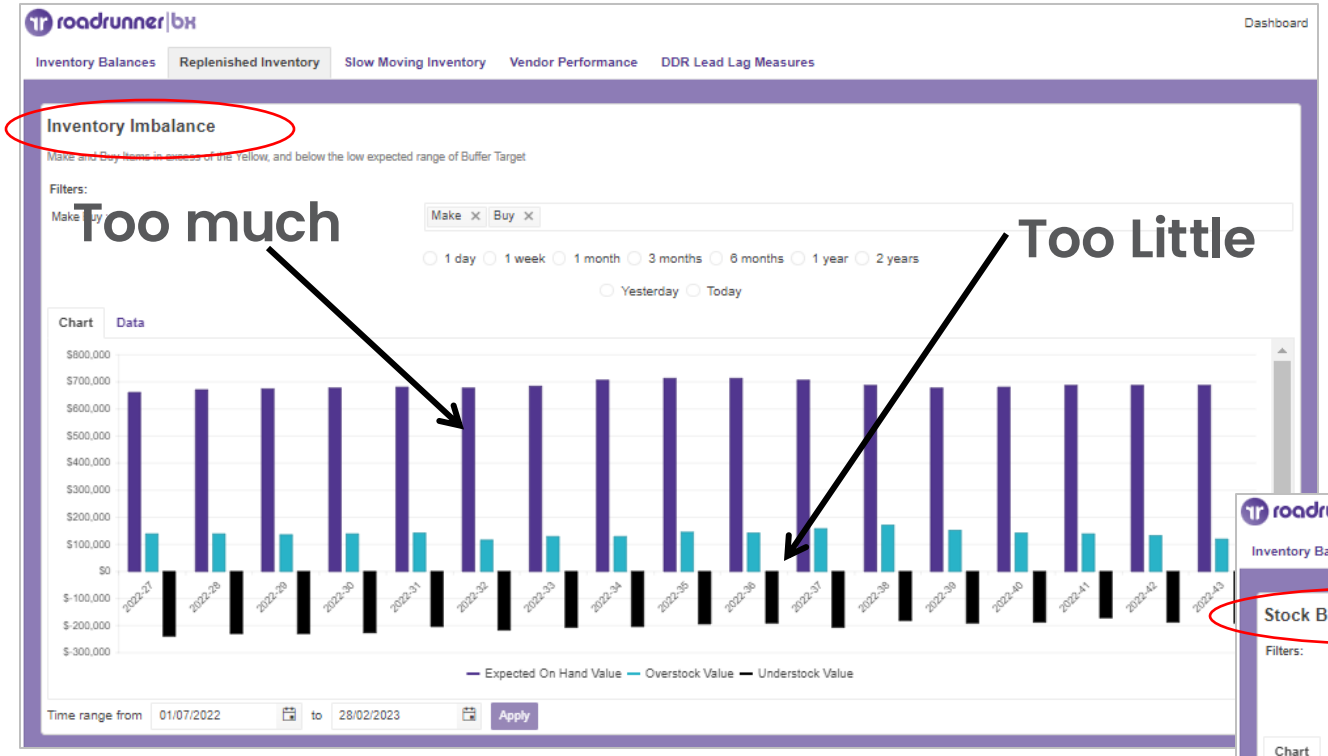
- *ERP agnostic, No CAPEX, no extensive training or long software implementations*
- *Pay by the month, no entry fee, no exit fee*

# About Roadrunner Rx IMS

## Ongoing process support:

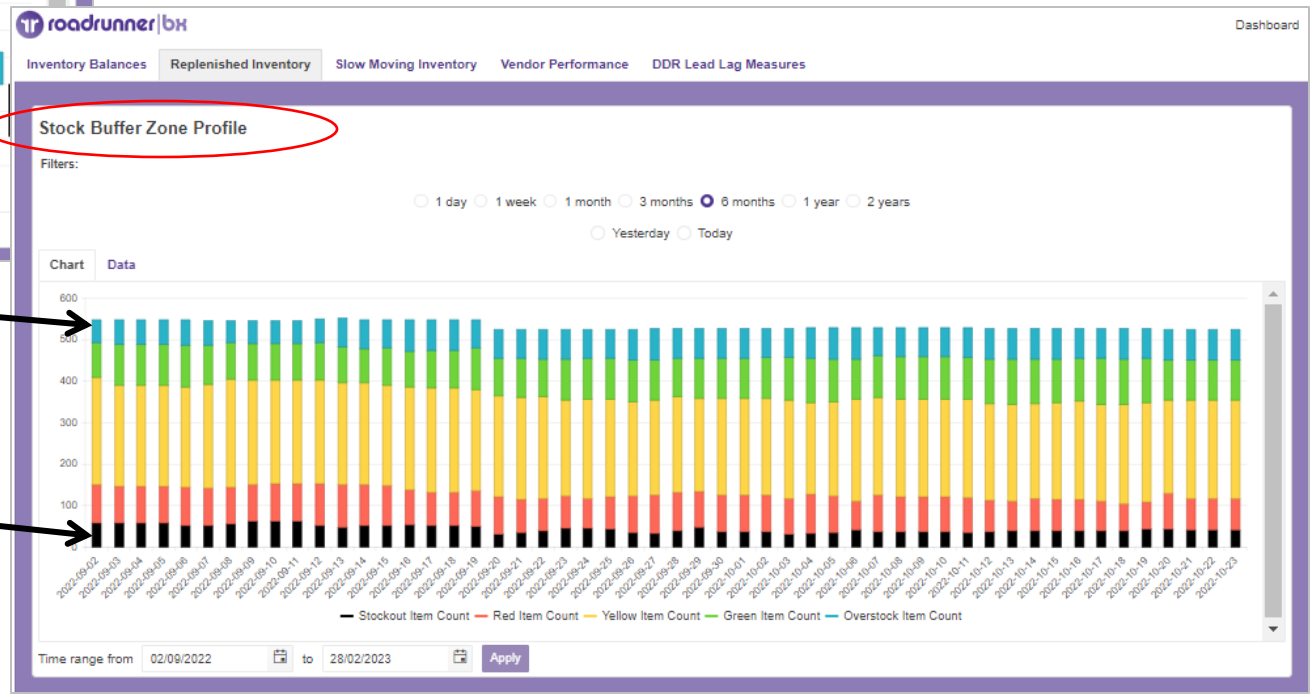
- Review data ingestion for its accuracy and implications
- Ensure integration stability
- Recommend what items should be stocked vs. purchased to order
- Perform initial buffer sizing for all stocked items
- Generate What to Buy suggestions and their implications for product availability and inventory levels
    - “Insurance” products, critical parts, etc.
- Prepare scorecard (notes, etc.) for weekly team meetings
- Prepare agenda and action items of weekly team meetings
- Review progress of inventory reduction actions
- Ensure the action items are complete and buy suggestions are being followed

# Inventory Scorecard




Too much

Too Little




Over Stock

Stock Out

What is the implication of this profile for:

- $ investment & cash flow
- Customer delivery / responsiveness / lead time

# Results – Service Centre 2

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roadrunner|bx

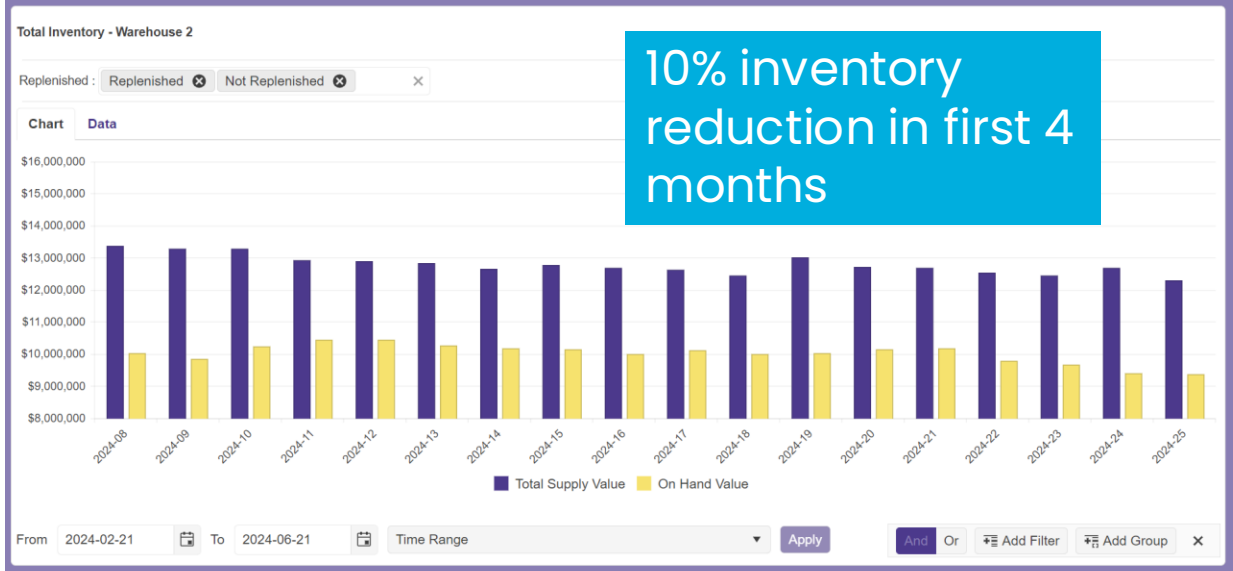
Dashboard Configuration Admin braedon.feehan@cmsmontera.com

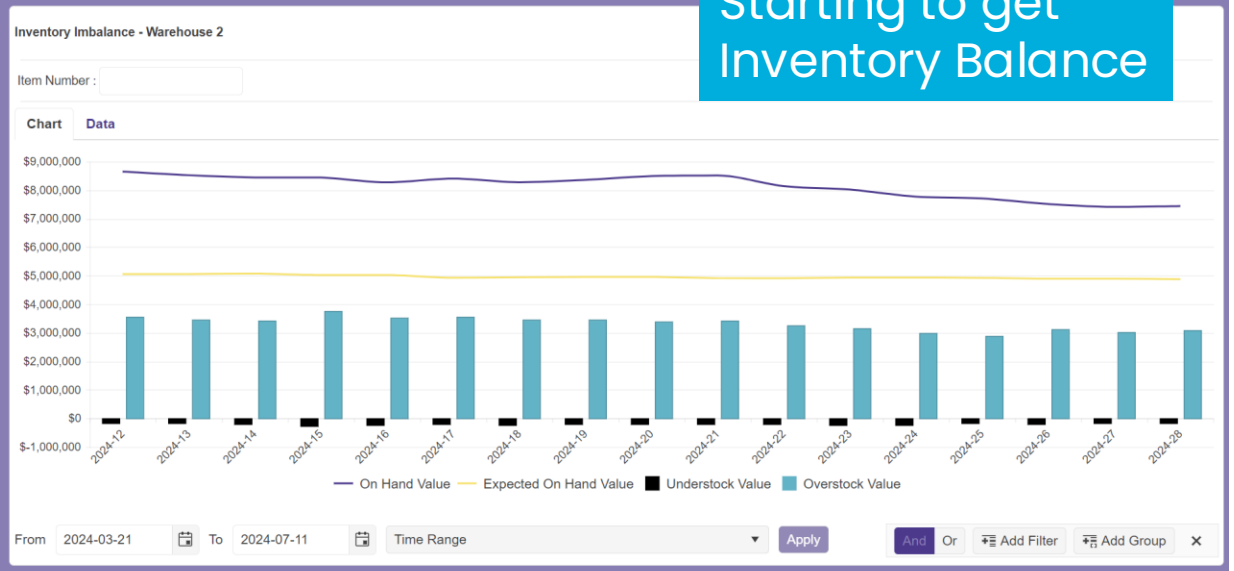
Warehouse 3 | Warehouse 2 | Warehouse 1

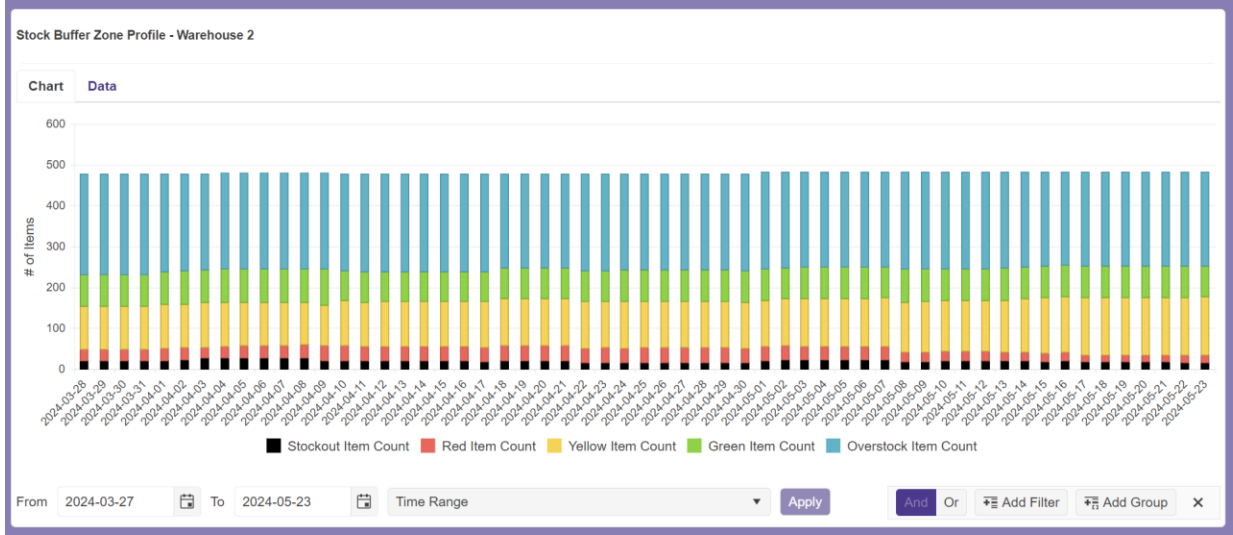
Inventory Summary | Inventory Turns | On Time Delivery | Financial Performance | Production Reports

10% inventory reduction in first 4 months

Starting to get Inventory Balance



# Results – Service Centre 3

roadrunner|bx

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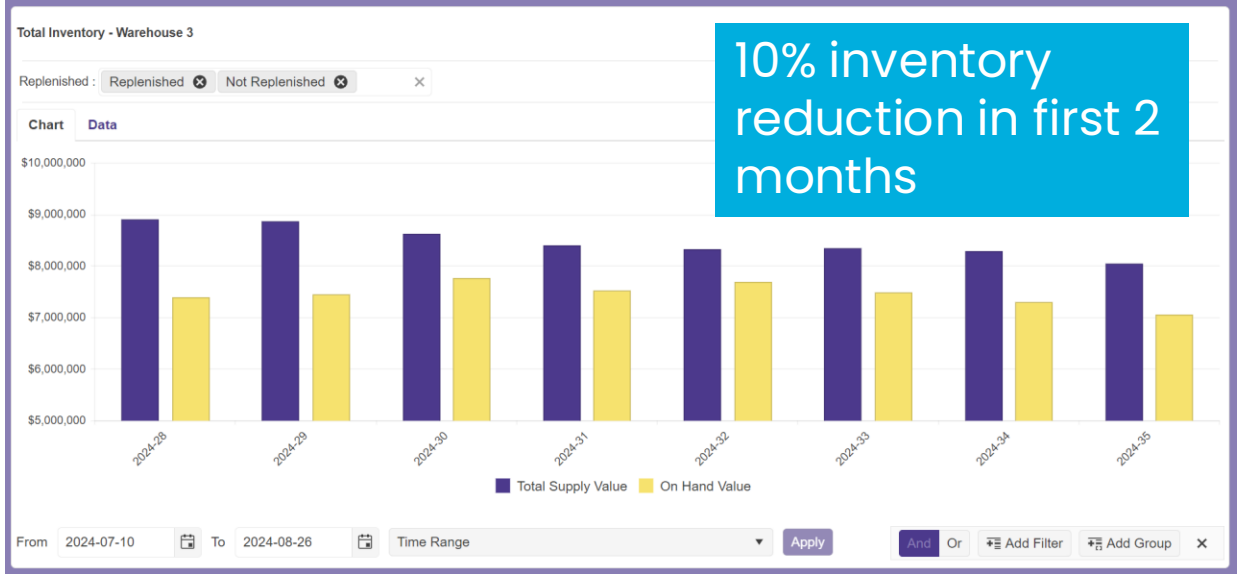
Dashboard Configuration Admin braedon.feehan@cmsmontera.com

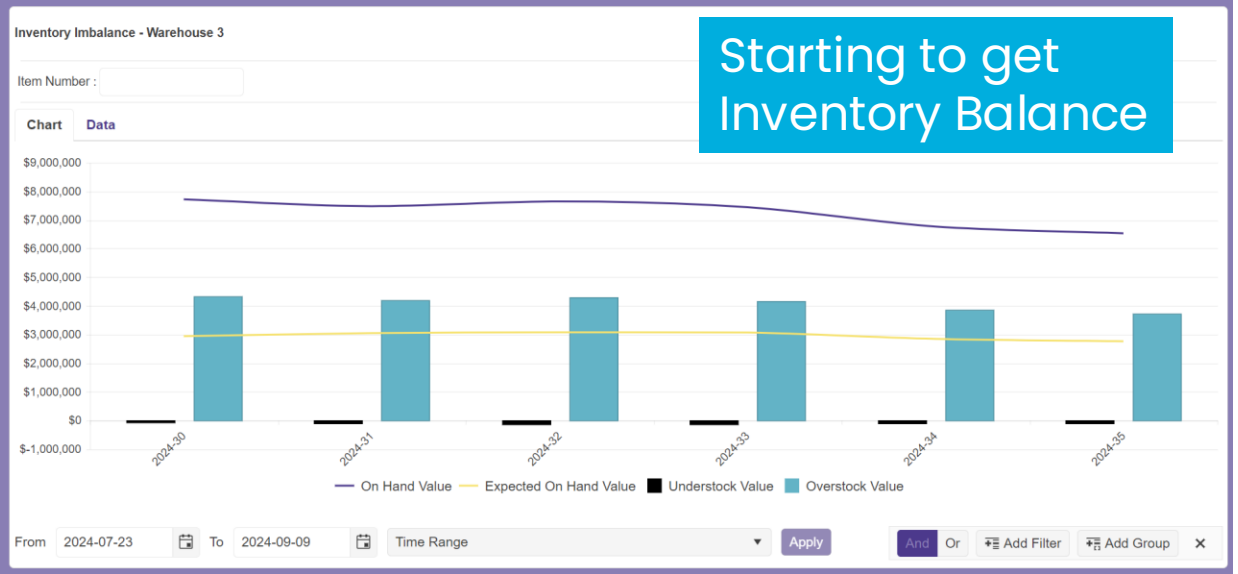
Warehouse 3 | Warehouse 2 | Warehouse 1

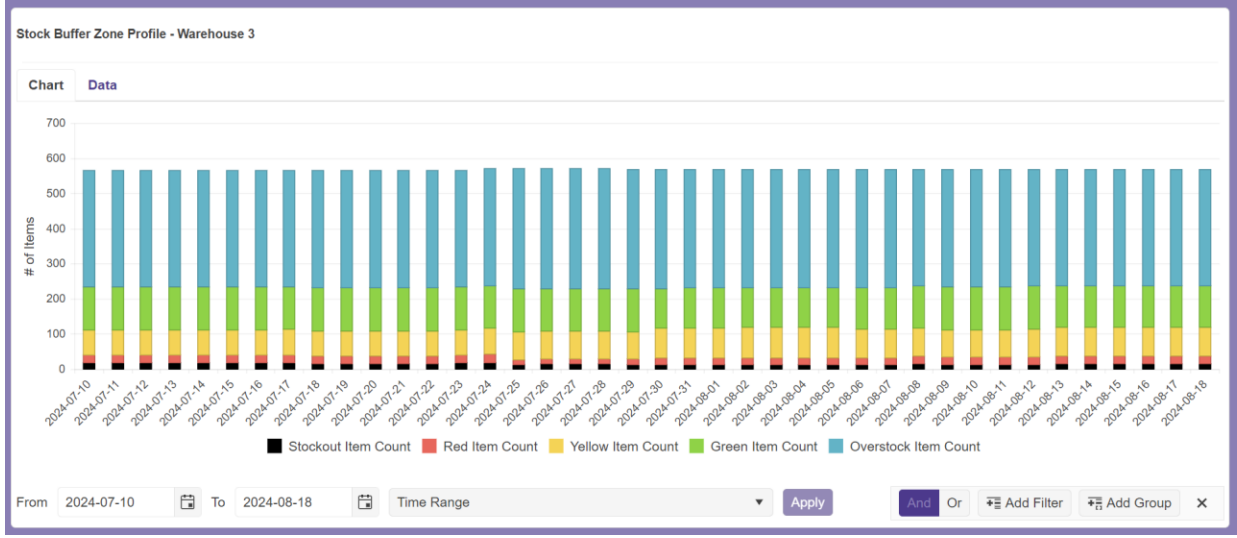
Inventory Summary | Inventory Turns | On Time Delivery | Financial Performance | Production Reports

10% inventory reduction in first 2 months

Starting to get Inventory Balance



# Challenges

- Overstock is usually large & clients don't always know how to quickly reduce it
- Inventory Imbalance (too much / too little) is also significant
  - This means that buying stockout items may increase inventory in the short term
  - Reducing overstock needs to be done asap to keep cash flow under control
- Need to establish regular team meetings:
  - Teach scorecard design and KPIs
  - Constantly verify data requirements of inventory buffer design algorithm (supplier lead times, order lead time, minimum order quantities, etc.)
- Ensure data integrity and ERP integration stability - to make sure we always deal with right data set
- Patience – needs a bit of handholding and understanding at the beginning
- Change Management still critical
  - Buy-in and support of the client team
  - Trust in the new process

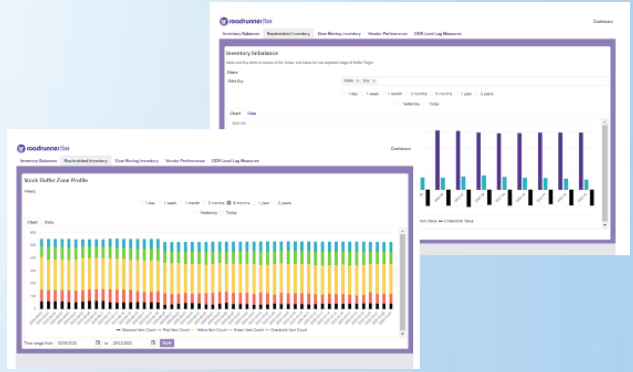
# What's new in 2024?

- ✓ Roadrunner Rx algorithm **sits next to the ERP**, replacing all the conventional MRP functionality
- ✓ Users act on purchase suggestions by interacting only with their ERP
- ✓ Cloud-based Inventory Management Scorecard provides process monitoring and feedback
- ✓ Focus on purchased parts

**Works with all popular ERPs**

infor, sage, MISys manufacturing, EPICS, BaaN, EPICOR, solarsoftware, SAP, QAD, ORACLE NETSUITE, ORACLE JD EDWARDS, ORACLE, Microsoft Dynamics, MAJIQ

**Rx IMS Scorecard**



# Presenter bios

**Jack Warchalowski,** President and CEO of Montera (jack@monterainc.com)

- Prior to Montera, Jack was the head of operations for the High-Tech manufacturer, Ernst & Young management consultant, and a project engineer with Babcock & Wilcox
- Jack is a Certified Management Consultant and a Professional Engineer
- Jack holds an MBA degree from the Wilfrid Laurier University and a Bachelor of Applied Science in Mechanical Engineering from the University of Waterloo.
- Jack is certified by the TOCICO as an implementer in all aspects of TOC

**Duncan Patrick,** Executive VP of Montera (duncan@monterainc.com)

- Prior to Montera, Duncan was a member of the senior leadership team of an industrial distributor, consulting manager at Ernst & Young, and Landman with Husky Oil
- Duncan is a Certified Management Consultant registered in Ontario
- Duncan holds an MBA degree from the Richard Ivey School of Business, Western University, and a Bachelor of Commerce degree (with distinction) from The University of Calgary
- Duncan is certified by the TOCICO as an implementer in all aspects of TOC

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