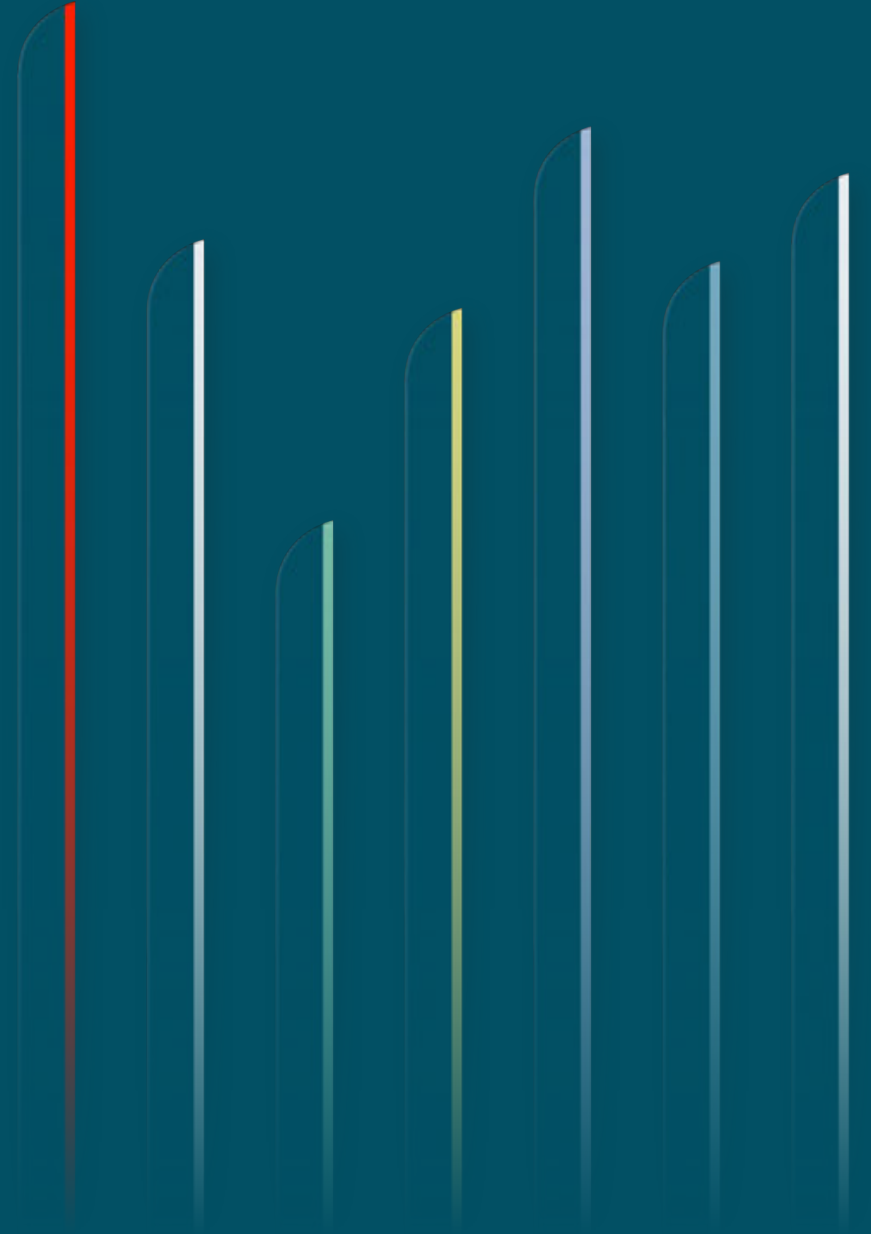# EPICOR

Creating Competitive Advantage with Smart Inventory Planning and Optimization

Greg V. Hartunian
President and CEO at Smart Software

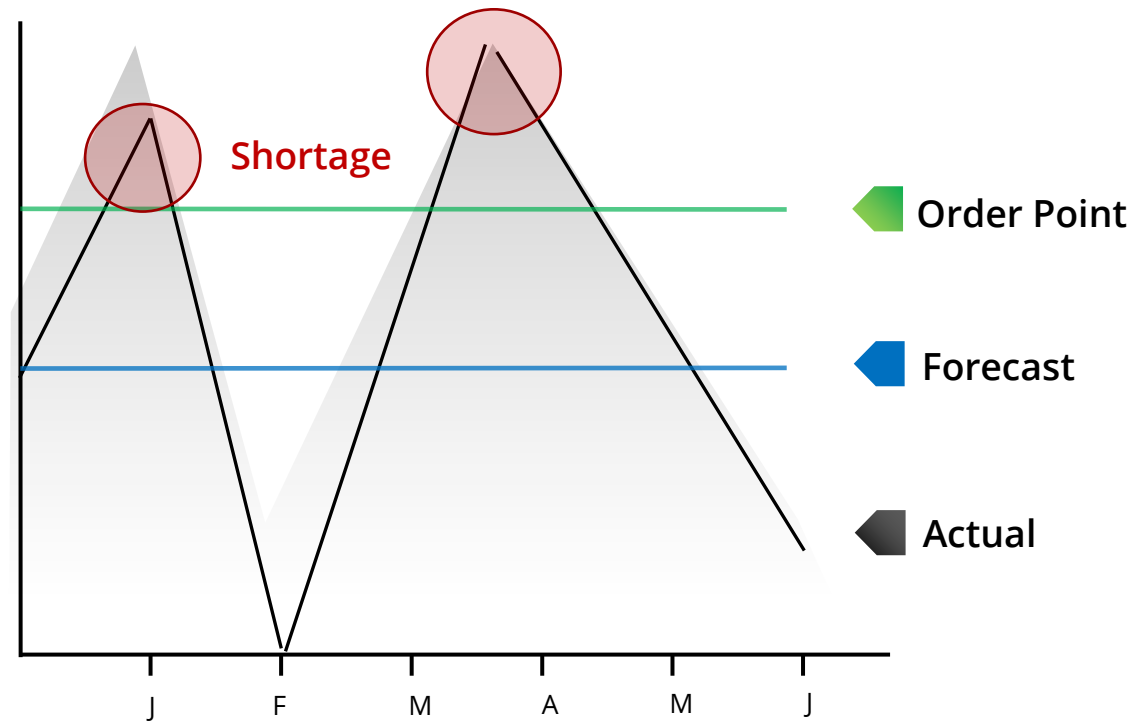# Agenda

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Bottom Line Up Front

1. **Inventory Management is Risk Management.** You can't manage risk if you don't know the tradeoffs between stock out risk and inventory cost.

2. **Traditional Rule of thumb** approaches contribute to reactive, infrequent planning processes and misallocate inventory because they don't account demand variability and apply "one-size fits all" logic.

3. **Intermittent demand** isn't handled by traditional forecasting and safety stock methods that make assumptions on the nature of the demand distribution.

4. Without an accurate **Service vs. Cost** lens, inventory is misallocated resulting in stockouts, excess, and downstream inefficiencies

5. Solution: identify a **Probability for each possible outcome** to exposes stock out risk vs. inventory cost at scale across thousands of items to identify optimal reordering parameters

6. Solution: Feed your ERP with Smart's planning parameters and **leverage their built in replenishment** that identifies what is up for order and when

Rule of Thumb Approaches

Example: Order more when On Hand Inventory < = 2 x's Lead time Demand
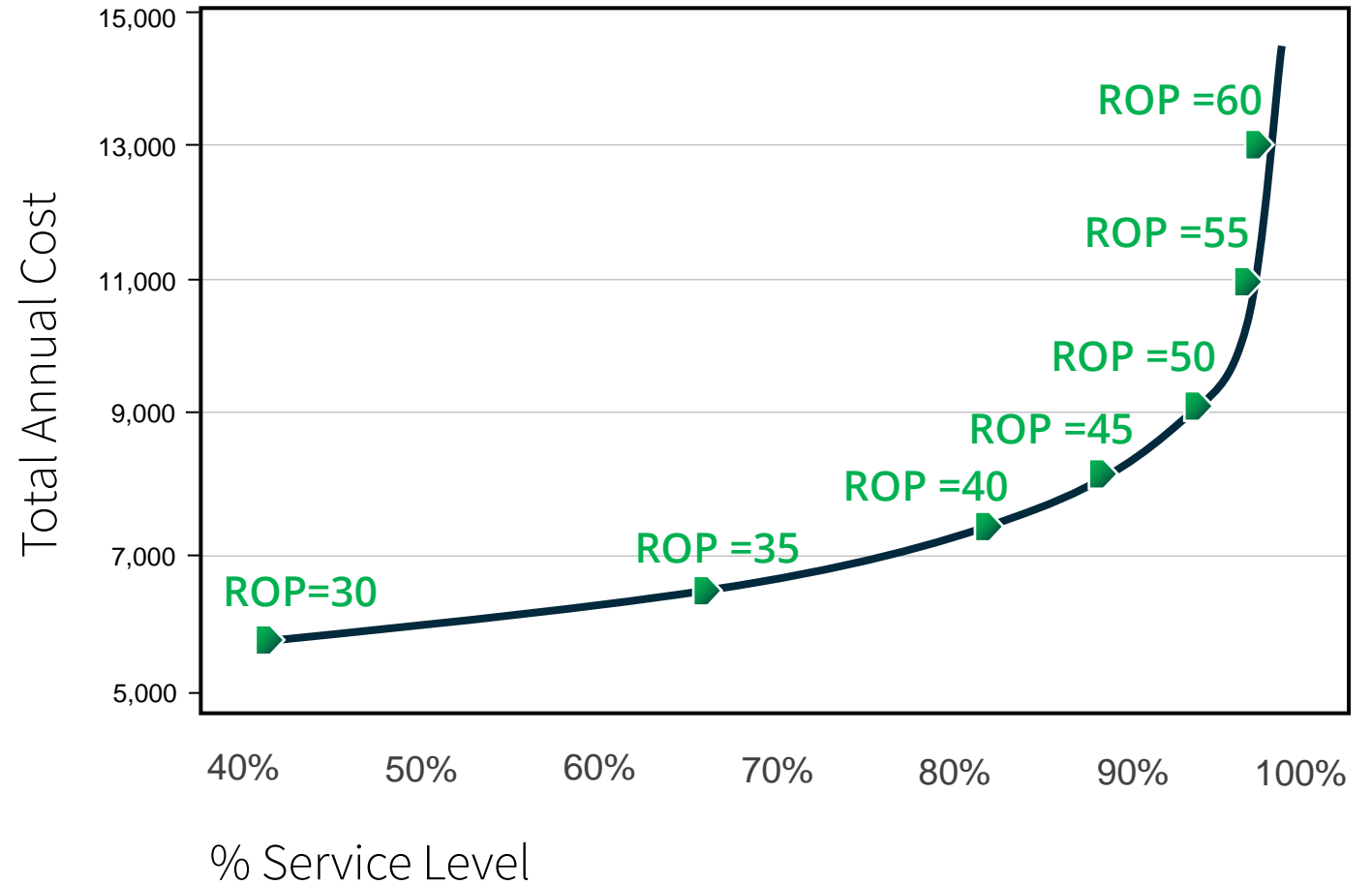Two A items are planned the "same" but get very different results

4000 units

2000 units

Overstock

J   F   M   A   M   J
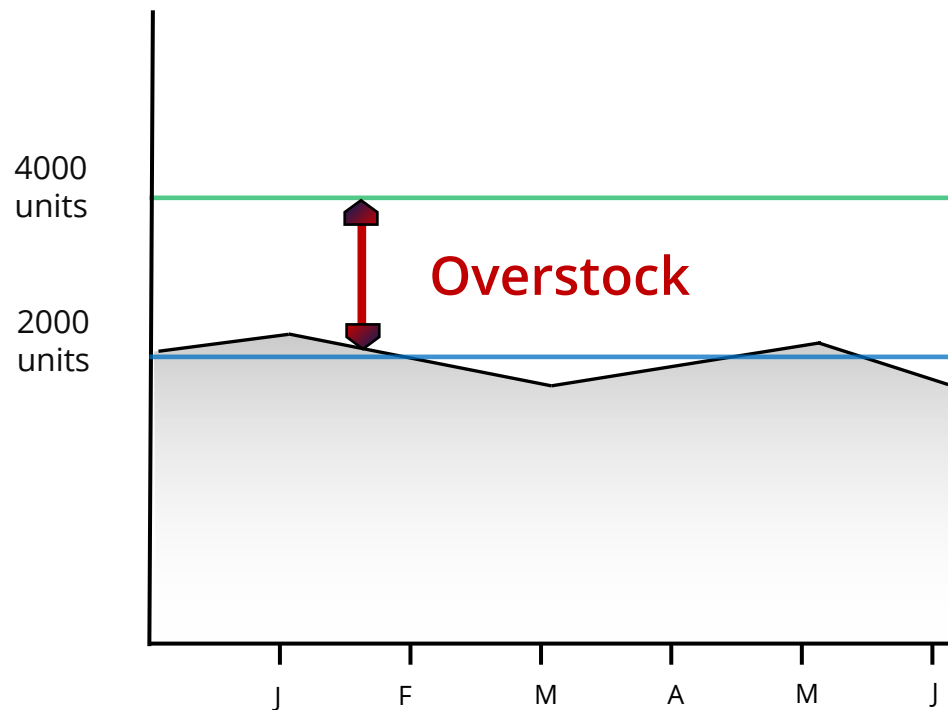
Item A : Relatively stable demand pattern

Shortage

Order Point

Forecast

Actual

J   F   M   A   M   J

Item B: Relatively volatile demand pattern

Tradeoff Curve

Cost versus Service Level

by Reorder Point

ROP =60

ROP =55

ROP =50

ROP =45

ROP =40

ROP =35

ROP=30

Total Annual Cost

15,000
13,000
11,000
9,000
7,000
5,000

40%   50%   60%   70%   80%   90%   100%

% Service Level

Tradeoff Curve

Cost versus Service Level

at 100% availability

100%

Service Level

At 100% availability adding stock cannot increase service level or reduce risk.
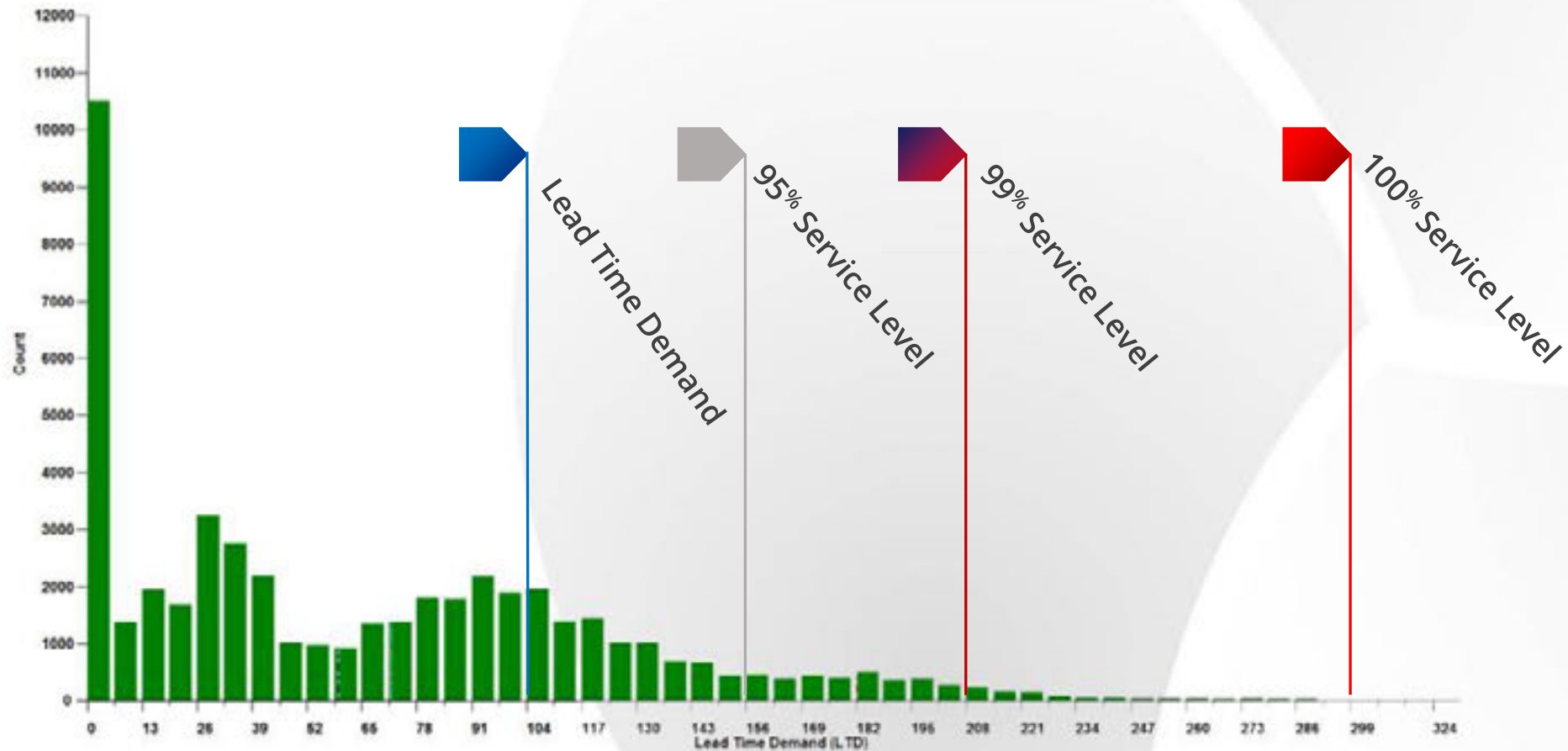
X

Number of Units Held
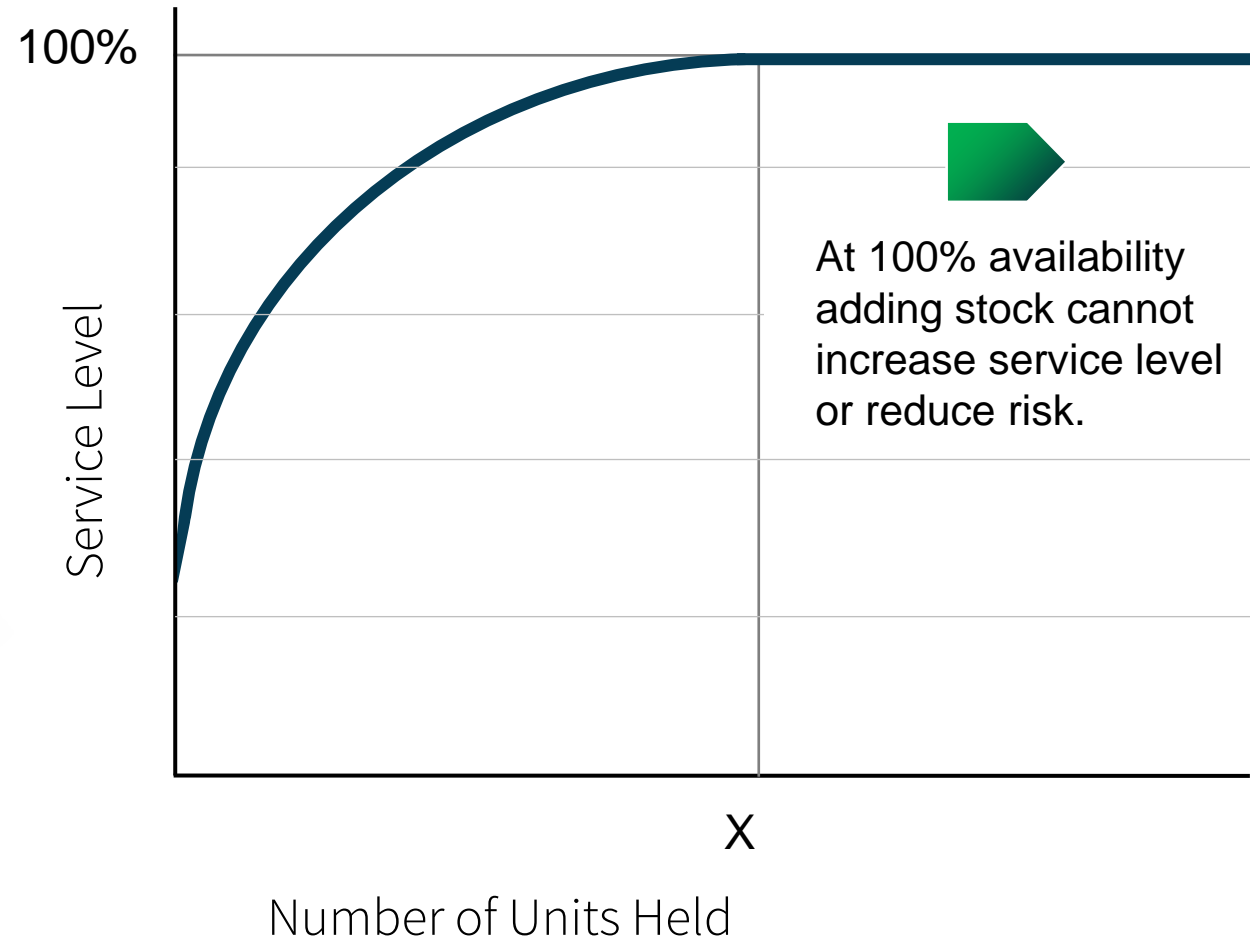
Trouble with Intermittent Demand: Forecasting "Doesn't Work"

ITEM#04 Government
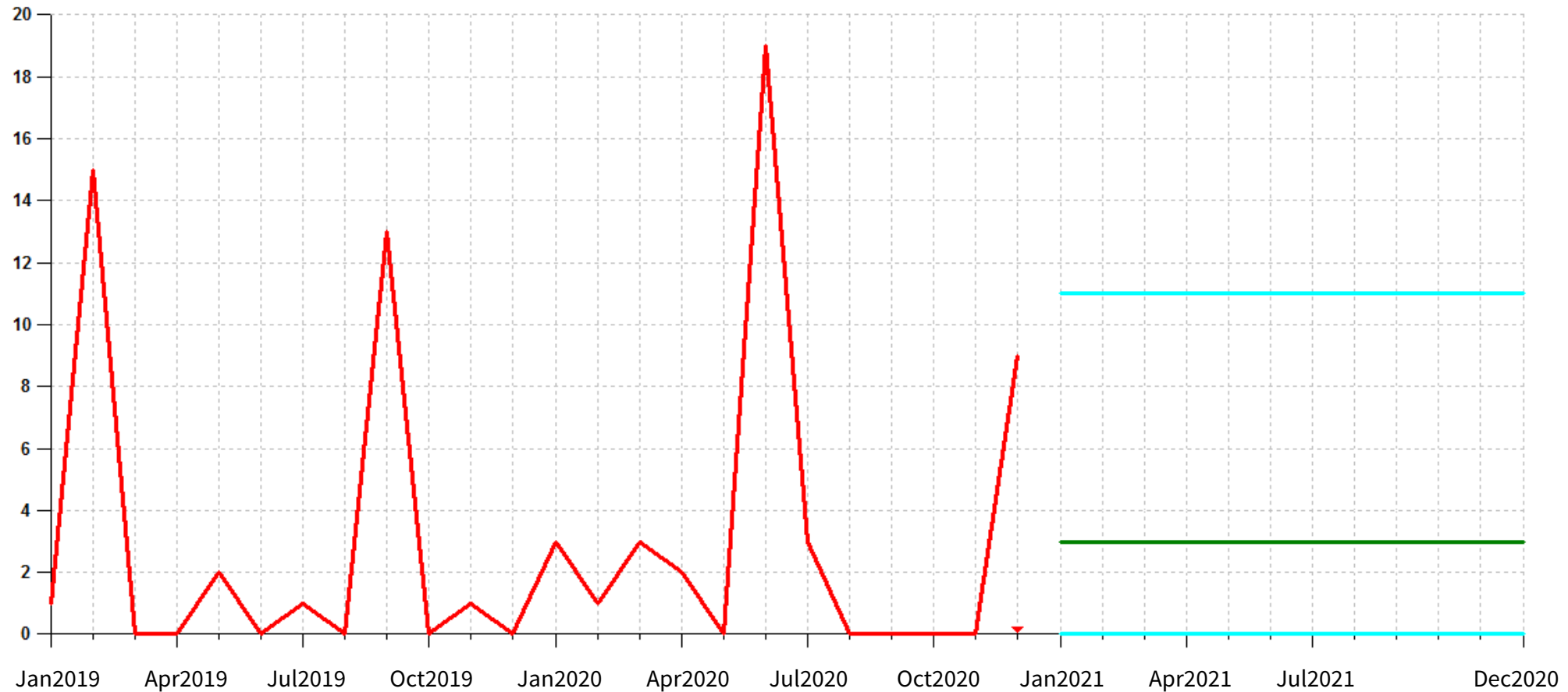
Probabilistic Forecasting: Simulate a range of possibilities

Lead Time Demand

95% Service Level

99% Service Level

100% Service Level

Output = optimal reorder points and reorder quantities
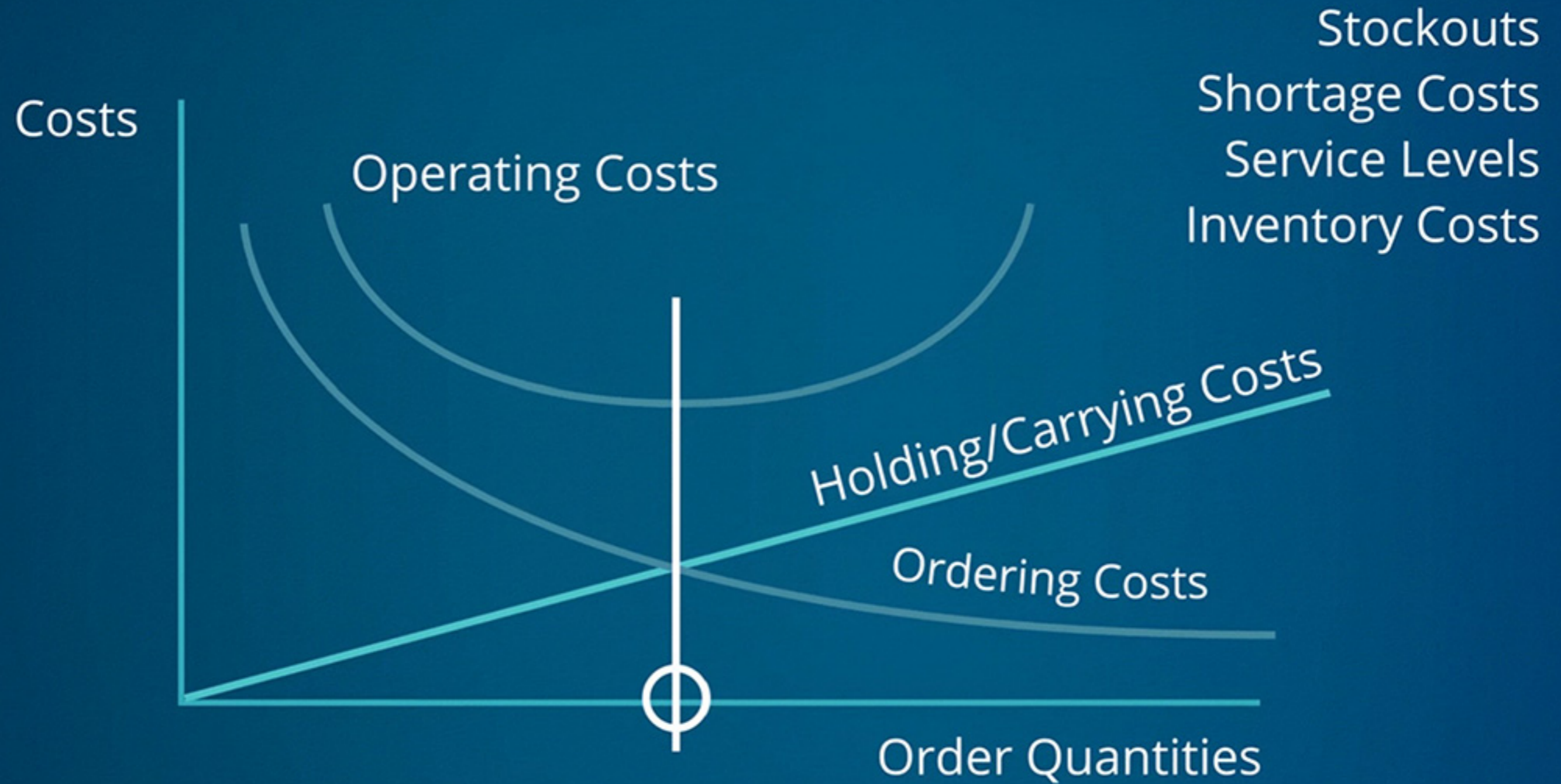
So how does it work?

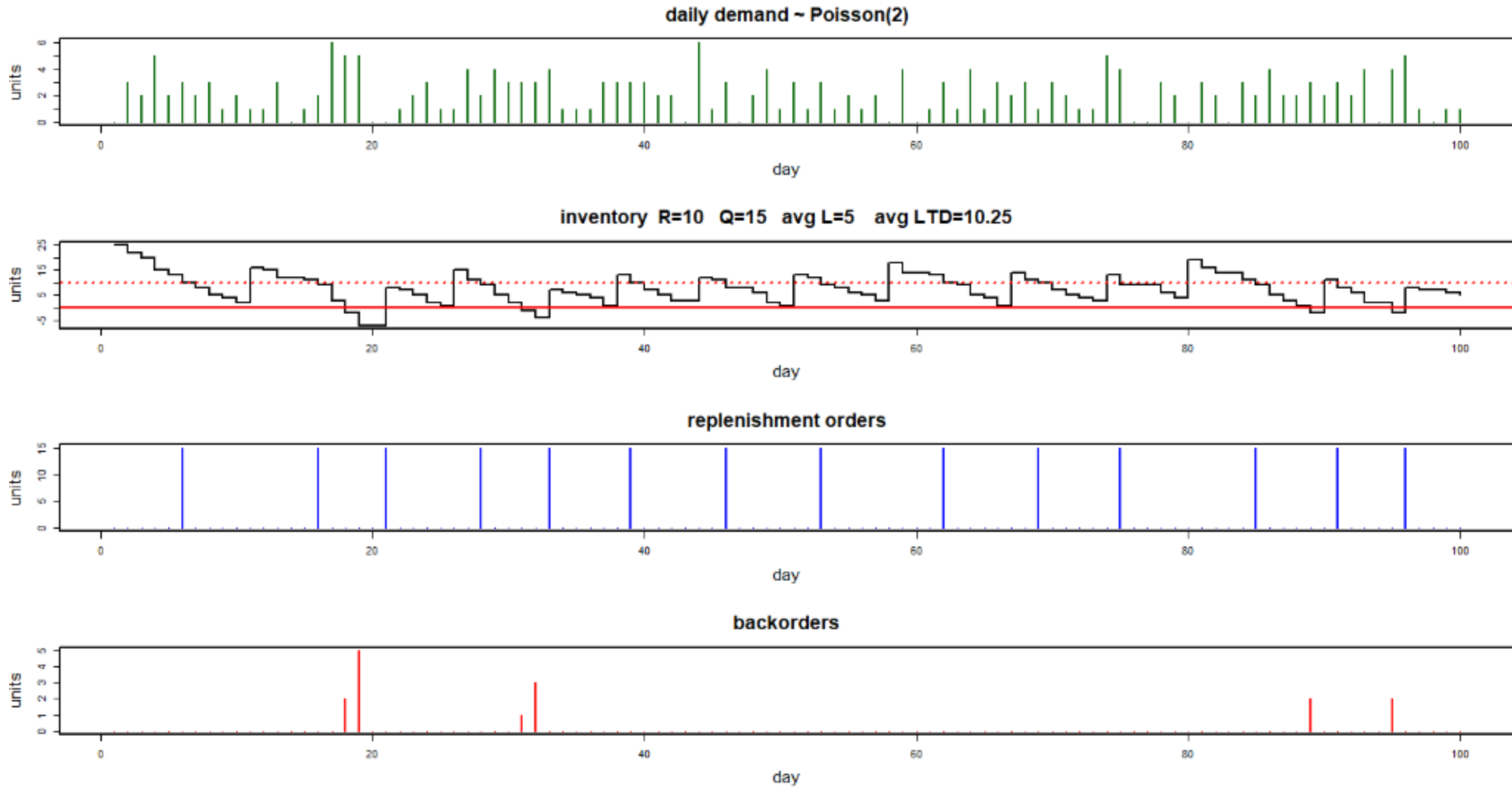Step 1: Import historical data from Epicor ERP

Step 2: Simulate a probability for every possibility

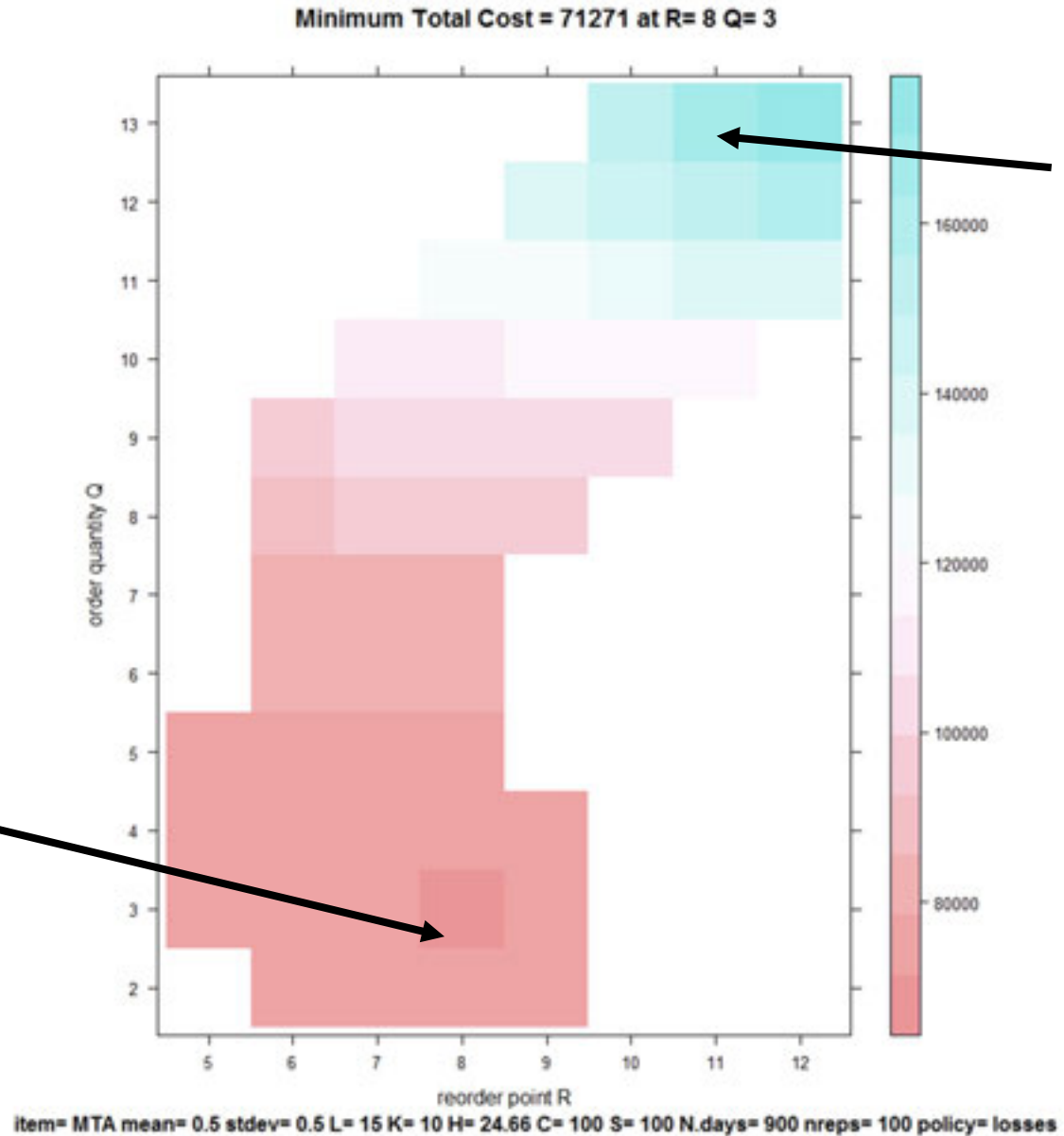# Step 3: Stress test existing policies and identify optimal ones

How it works: Simulation fed by scenarios
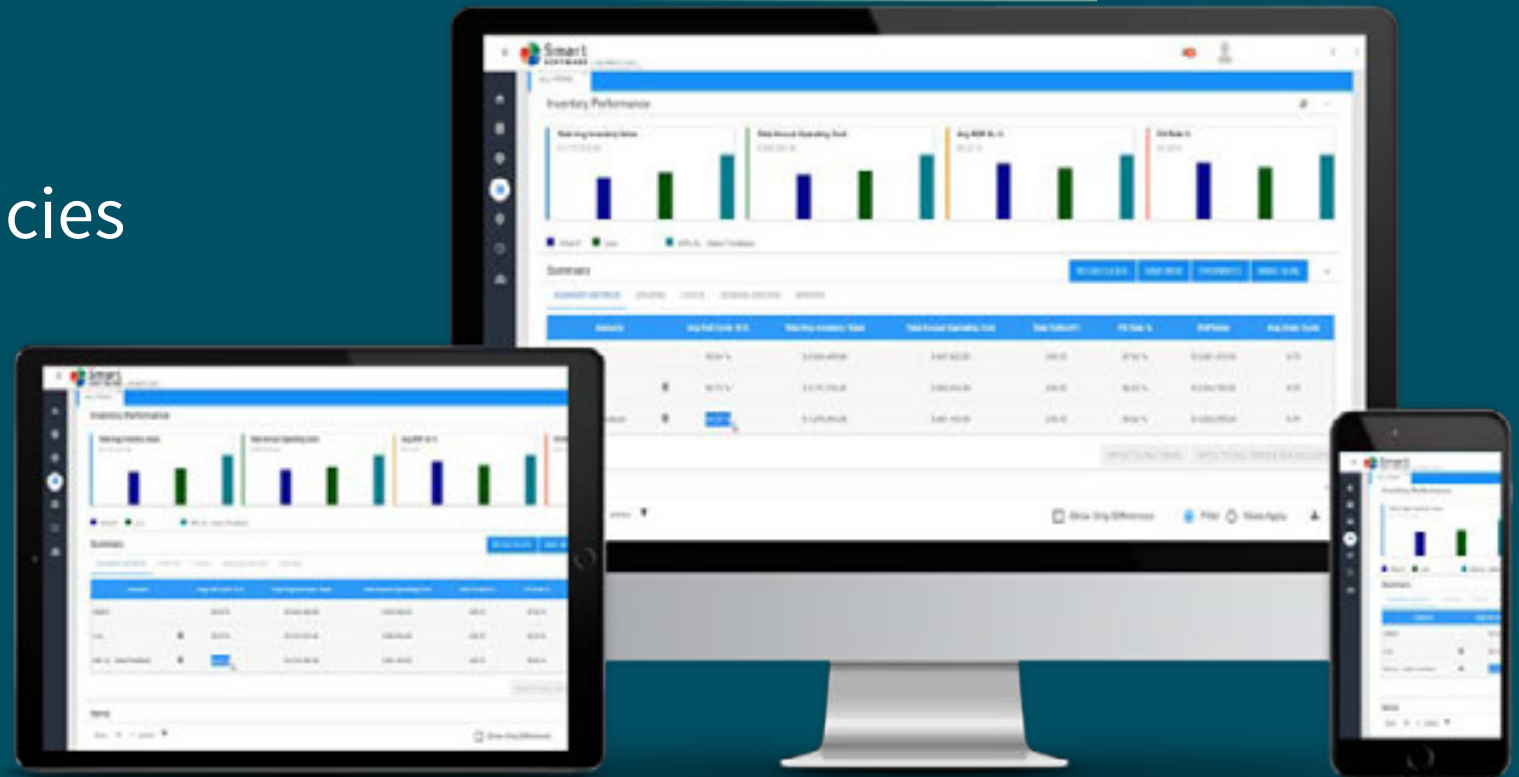
How it works

"Redder is better"
(lower cost)

Start Here

End Here

Minimum Total Cost = 71271 at R= 8 Q= 3

item= MTA mean= 0.5 stdev= 0.5 L= 15 K= 10 H= 24.66 C= 100 S= 100 N.days= 900 nreps= 100 policy= losses

Let's Go Live – Demo

- Model current performance

- Optimize Policies

- Export Optimal Policies

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Questions and Answers

Feel free to contact me:

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Thank you for joining us!

Thank You!

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