



Optilon[®]
OPTIMIZING SUPPLY CHAINS

Unified Commerce is the Future of Retail

The
Economist

The battle for Baghdad
Are the Gandhis finished?
Don't raise interest rates
China's Berkshire Hathaway
Dope is the new pizza

JUNE 25 17 - 27th 2004

economist.com

How far will Amazon go?



The
Economist

A special report on the future of Europe
The Trump doctrine: US and them
Science's publishing problem
Terror in London

MARCH 26th - 30th 2017

Amazon's empire

And what could threaten it



INSIDE THIS WEEK: TECHNOLOGY QUARTERLY

The
Economist

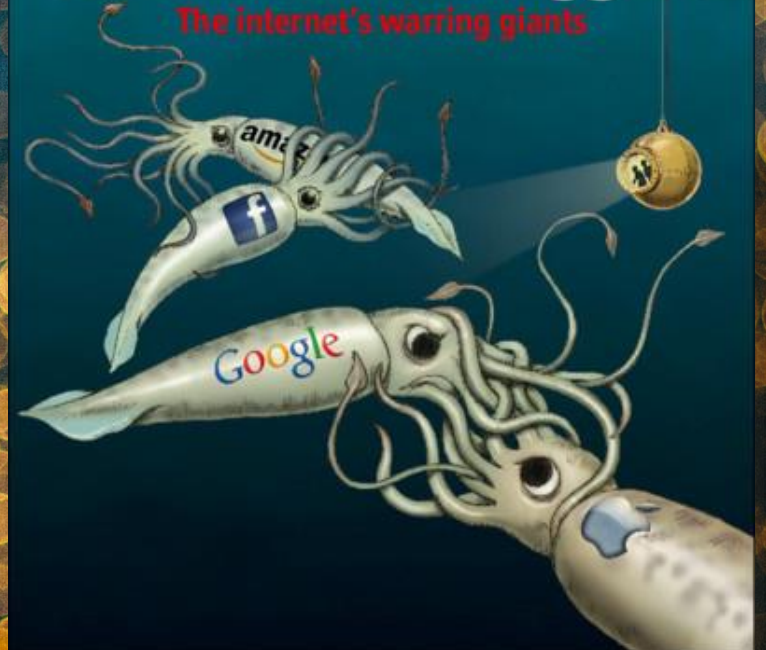
Ratan Tata's lessons for India
Egypt on the edge
The Big Long: betting on US housing
Putin alone
Abraham Lincoln, management theorist

DECEMBER 15th - 17th 2012

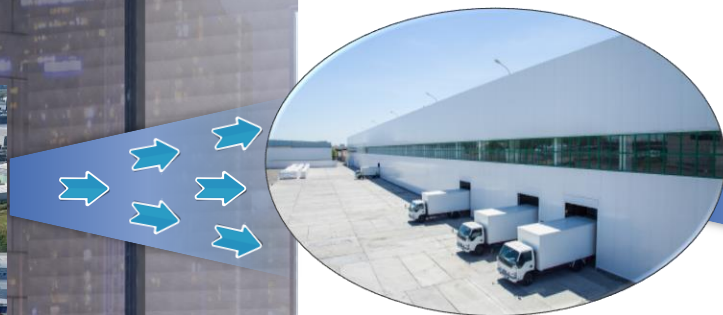
economist.com

Survival of the biggest

The internet's warring giants



MultiChannel



Omnichannel

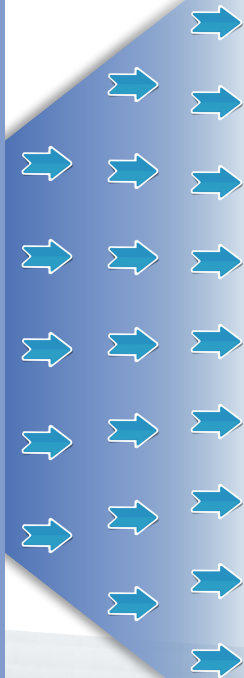


Unified Commerce



The goal is to provide an uninterrupted buying journey transacted across multiple channels and devices (often simultaneously) supported by an IT infrastructure that unifies and optimizes back office operations.

Unified Commerce



Shop In Store



Buy Online Pick Up In Store

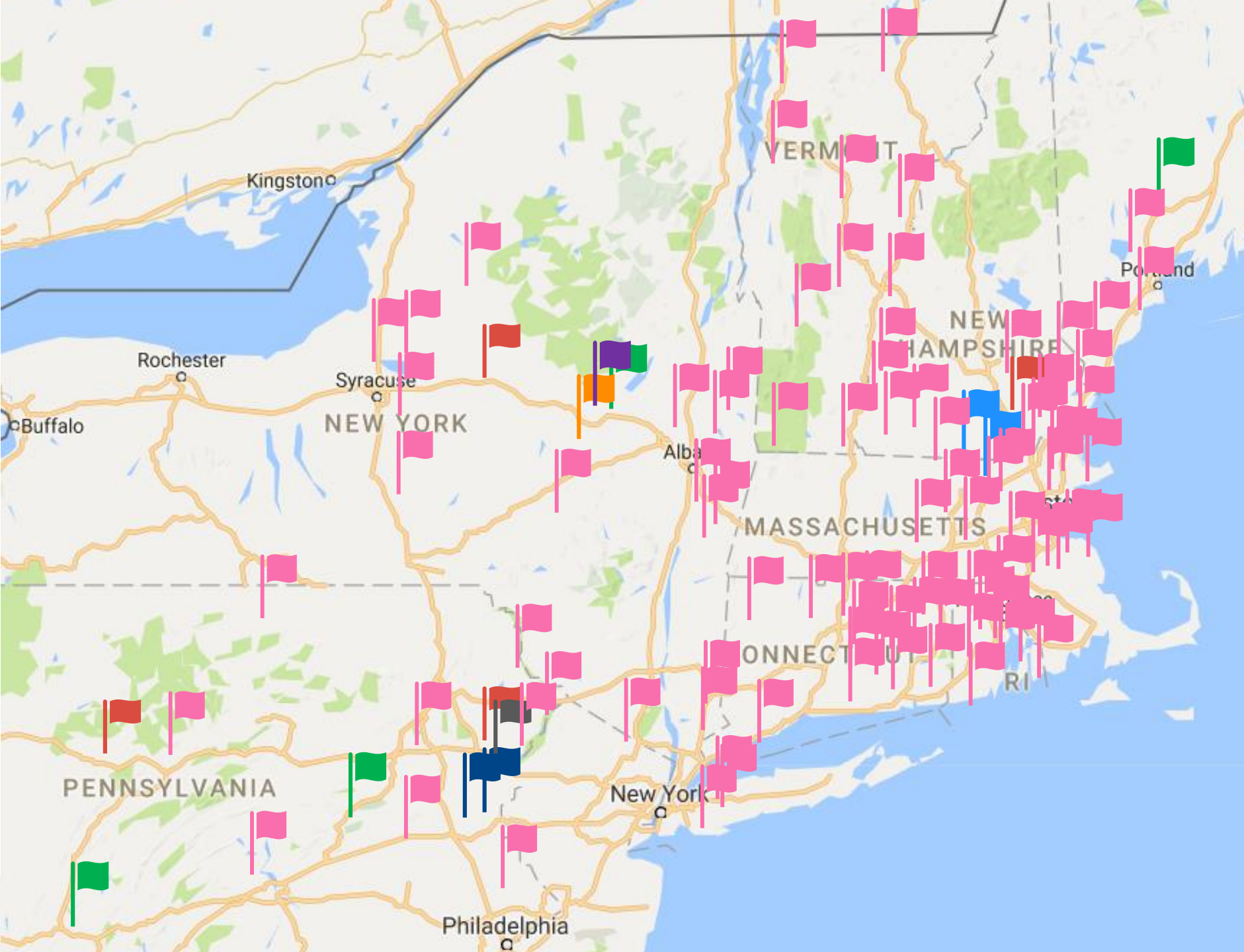










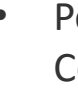



E-Commerce



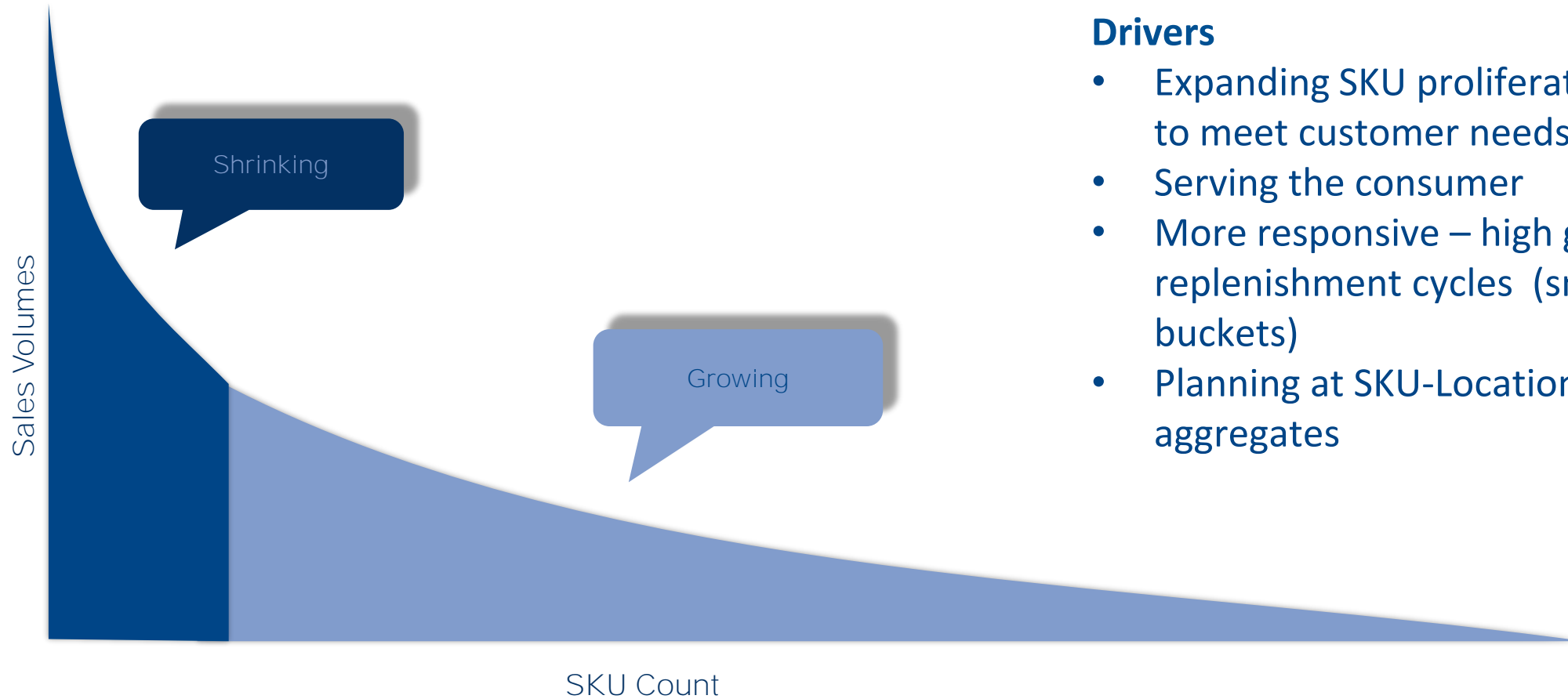
The locations where inventory will be served will expand as options for delivery increase





-  GMDC Distribution Center
-  Full Line Grocery Distribution Center
-  Fashion Distribution Center
-  E-Commerce Fulfillment
-  Specialty Walmart Distribution Center
-  Center Point Distribution Center
-  Sam's Club Distribution
-  Walmart Stoes
-  Perishables Distribution Center
-  Dry Distribution Center
-  Fashion Distribution Center
-  Footwear Distribution Centers

Things Have Changed – The “Long Tail” Continues to Grow



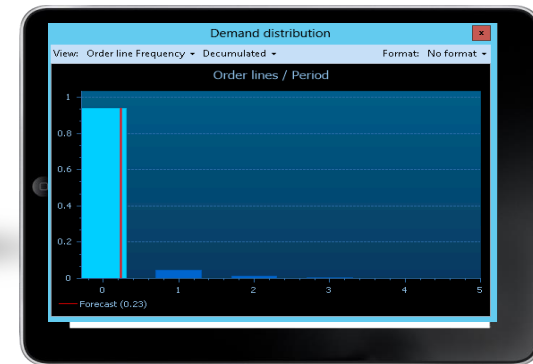
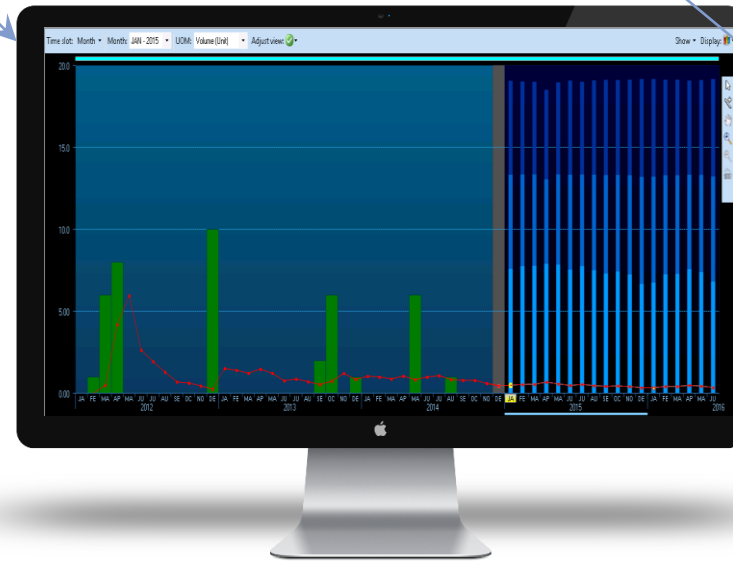
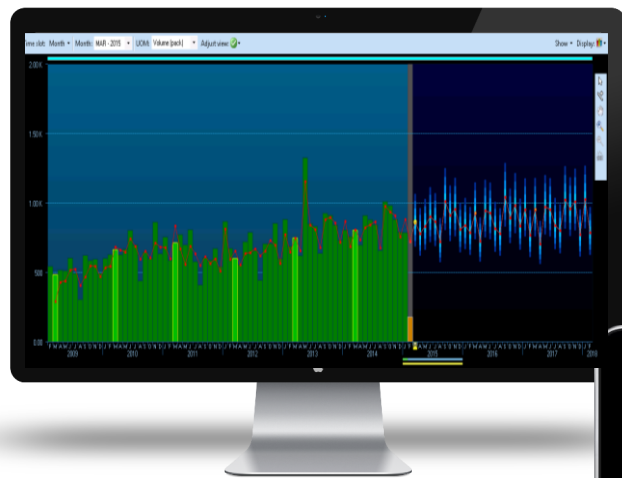
Drivers

- Expanding SKU proliferation to meet customer needs
- Serving the consumer
- More responsive – high granularity replenishment cycles (smaller time buckets)
- Planning at SKU-Location, not aggregates

Service Is Provided by “Good Inventory” (Not by a “Good Forecast”)

Serving the customer based on the quality of the forecast may be a driver of improved service levels for fast movers...

But serving the customer based on the quality of the forecast will not improve service level for slow movers. It must come from inventories.



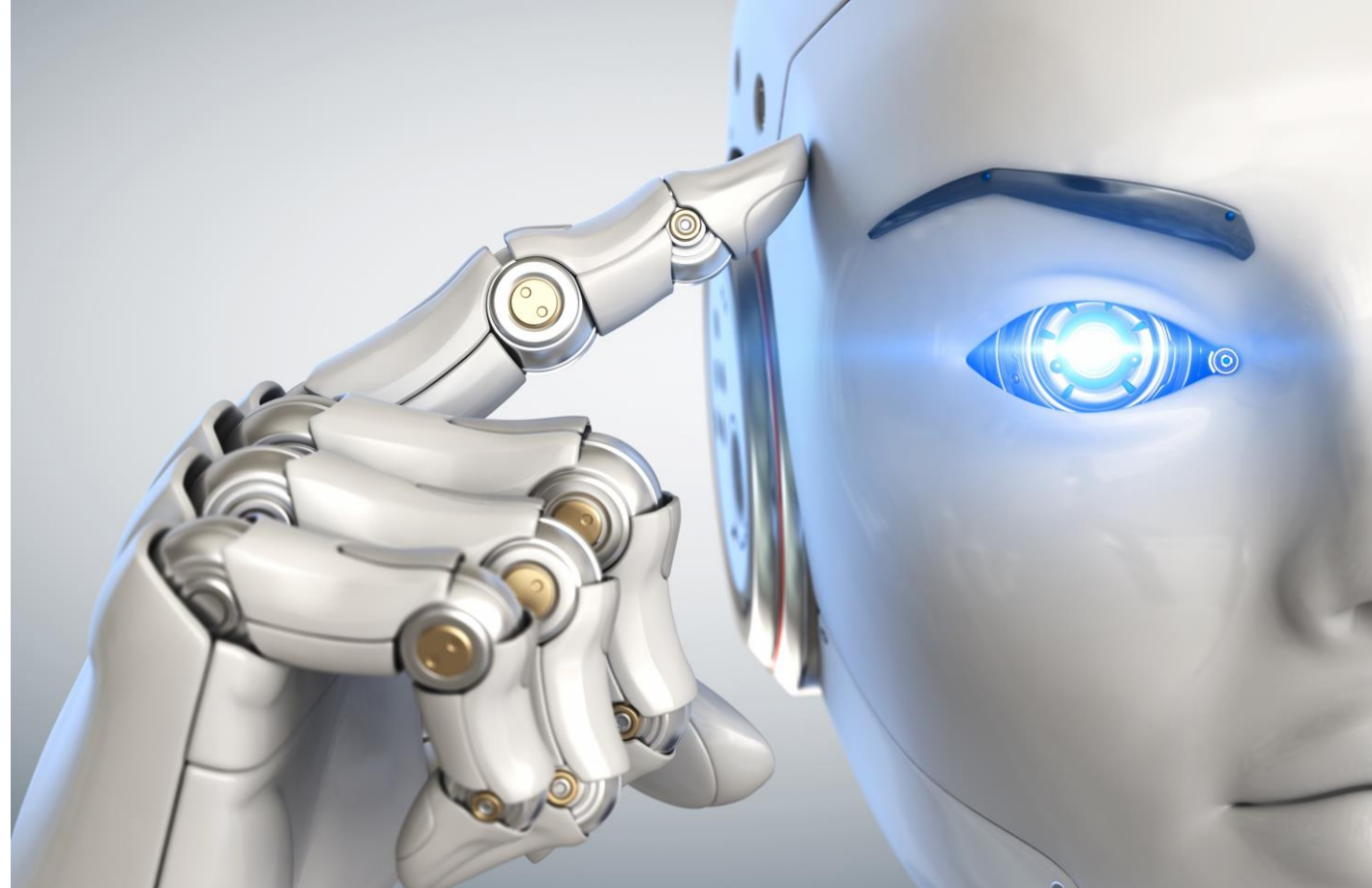
Unified Commerce: Business Requirements

What:

Service (and Demand) driven replenishment.

How:

By dynamically allocating optimal inventory mix across the multi-echelon network, at high frequency



This implies an increase of two orders of magnitude of planning decision frequency

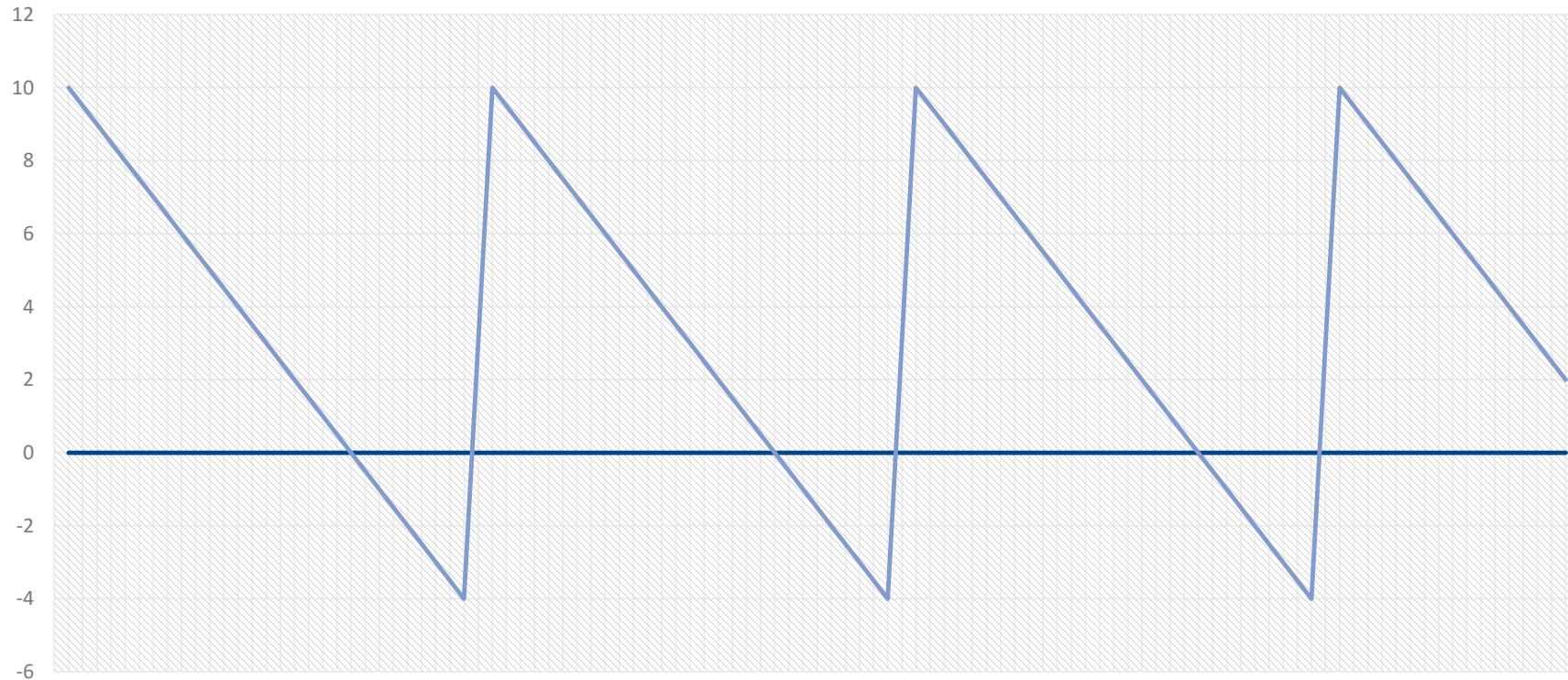
Why SC Automation is a Critical Factor

- High planning frequency
- Shortage of supply chain planning talent
- ...In making decisions under uncertainty people replace the complex task of assessing probabilities with limited and simplified heuristic principles that can lead to severe systematic errors.

Judgement under Uncertainty: Heuristics and Biases (Science, 1974)

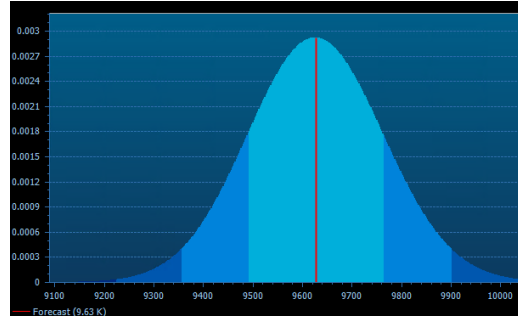
Amos Tversky and Daniel Kahneman.

Representativeness Heuristics: “Misconception of Chance”

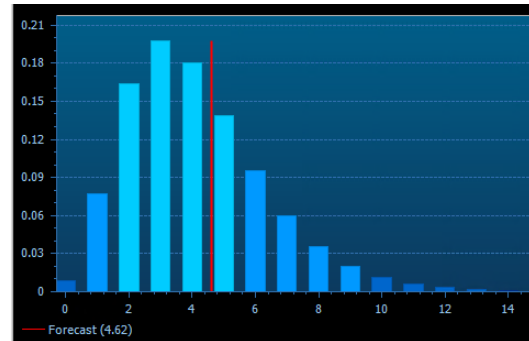
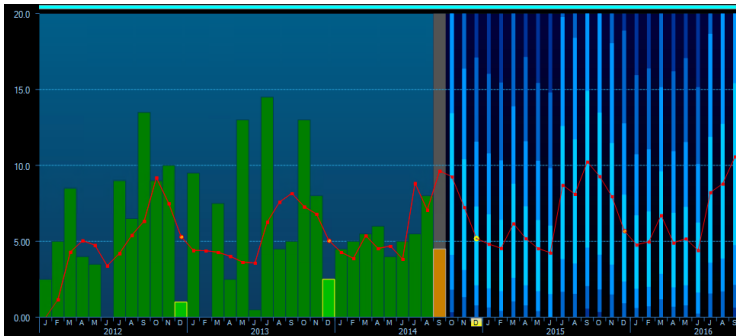


Representing a case of 72% service level with classical saw tooth, measurement during short periods of time can provide either 100% or zero service level with “hysteric” consequences.

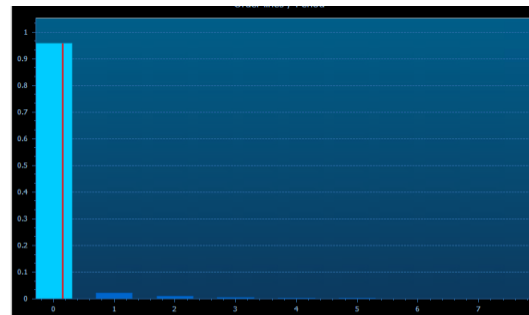
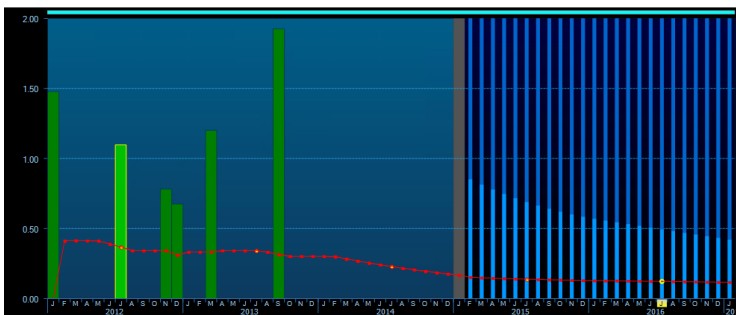
Availability Heuristics: Forecast Vs. Expectation



When demand is stable or “Normal”, the expected value and most probable value are similar.



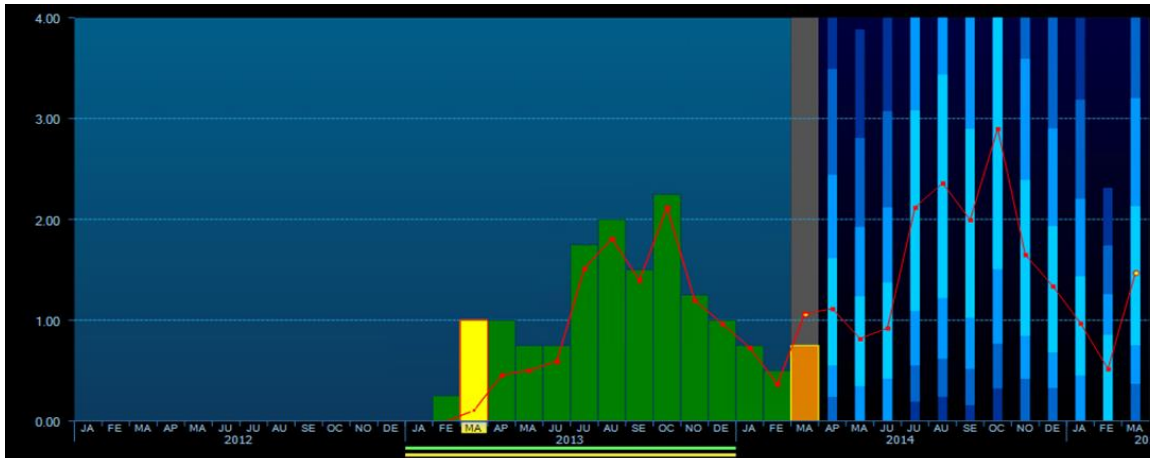
When demand is lumpier with skewed distribution, the mode is at the left of the expectation.



In “Tail” items with intermitted demand, the most probable value is zero! But the forecast is never zero.

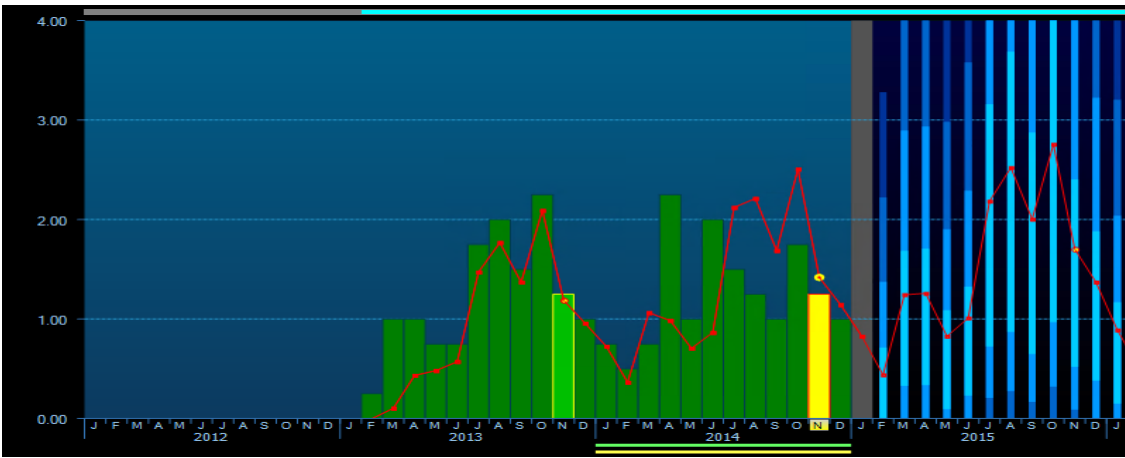
With zero forecast one keeps zero stock and provides no service.

“Illusion of Validity”: Over-fitting



The peaks of August and October are random fluctuations or a seasonal variation.

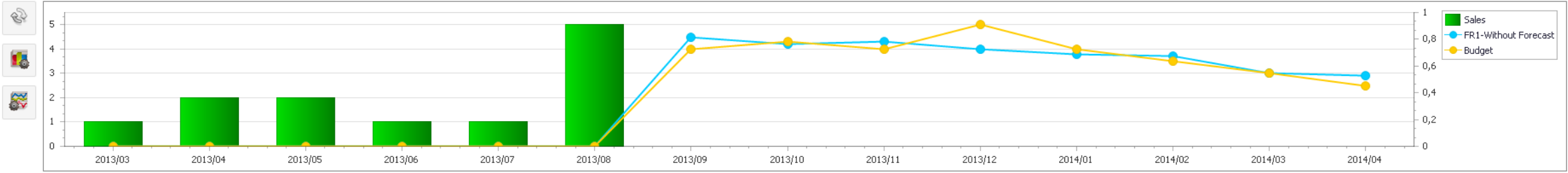
Over-fitting provides “high quality of the match between selected outcome and the input” ; an illusion of consistency



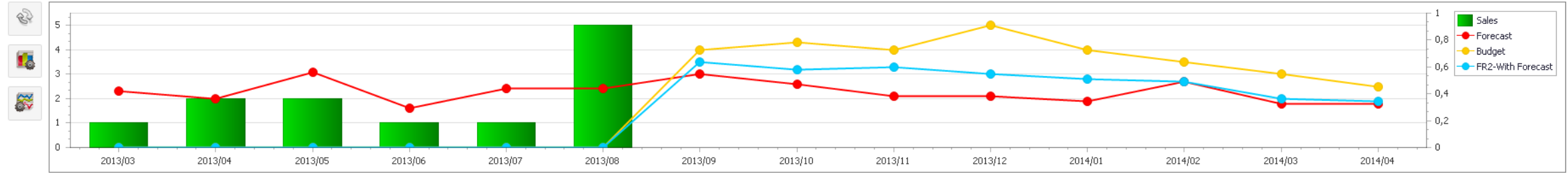
Unfortunately, the accuracy of the March 2014 forecast for the rest of the year is poor as random fluctuations dominate the demand.

Availability Heuristics: Anchoring

Manual forecast in the presence of the budget



Manual forecast in the presence of the budget and Statistical Forecast



It Comes Back to Amazon

Amazon and its successful competitors are already operating with highly automated supply chain planning and optimization processes



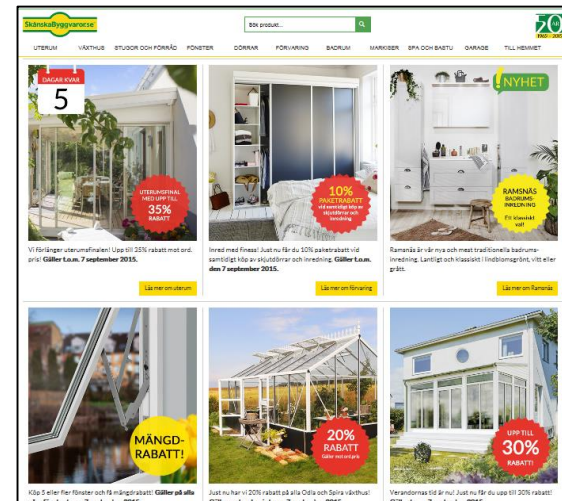
Skånska Byggvaror Case Study of Retail Automation



Optilon[®]
OPTIMIZING SUPPLY CHAINS

About Skånska Byggvaror

- Leading Swedish online building materials retailer
- Founded in 1965, began online operations in 1998.
- 15th largest Swedish e-tailer and the leader in building materials
- Owned by Byggmax
- Rapid growth since 2015

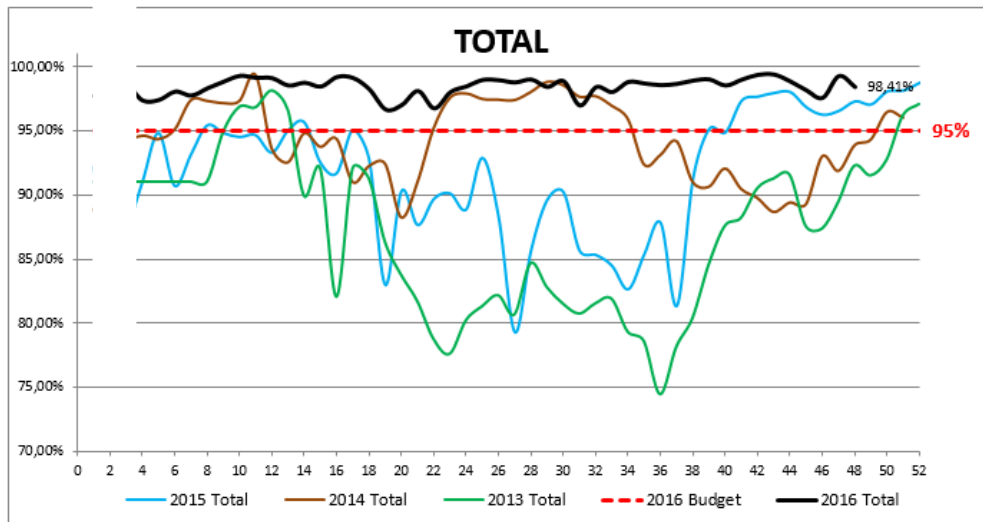
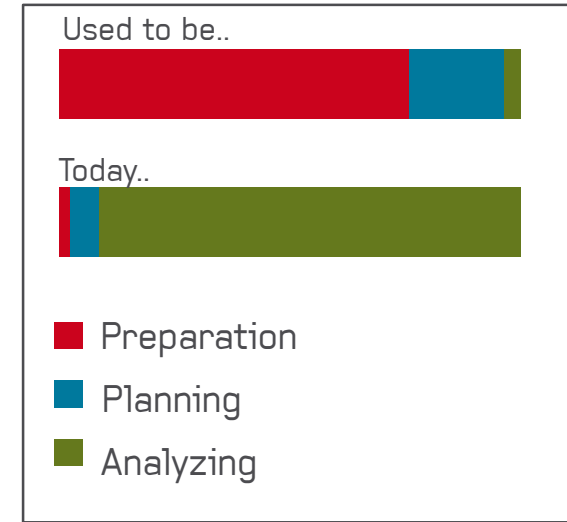


Background

- Internal process review in 2014 found planning as a key function to enable growth
- Both processes and tools needed to be improved
- Skånska Byggvaror reviewed a number of planning tools and selected S099+ delivered by Optilon
 - Enable high product availability – strong belief that S099+ could deliver higher service levels than competing tools
 - Inventory Optimization – S099+ method guarantees service levels at lowest possible inventory
 - Planning Automation – S099+ is enabling high automation in both demand forecasting as well as in replenishment

Results by Planning Automation

- Service all-time high, 85 % => **98,4%**
- Service level consistent and stable, above target every week since go-live
- Inventory turns improved about 20%
- Automated planning included impact of campaigns



” After a calendar year with SO99+ we’ve managed to **automate pretty much the whole forecasting process and most parts of the order management process**. Which has led to less administration and more work with analyzing our patterns. In turn, this had led to **significant improvements on availability, both increasing and stabilizing the levels**. All for the greater good of our **customer value**”, comments Mike Opdahl, Supply Manager Skånska Byggvaror.