



THE **SPARK** INITIATIVE

# GLOSSARY

Building outside-in processes  
for better supply chain planning

## ABOUT THE SPARK INITIATIVE

The Spark Initiative is a think tank of supply chain experts and industry leaders that explores a revolutionary data-driven “outside-in” approach to supply chain planning. With this initiative, OMP wants to improve decision-making for their customers by introducing a new way of thinking about supply chain planning.

The initiative aims to identify and test outside-in concepts by applying them in a set of concrete use cases using real-world data, which will demonstrate the business relevance and value add of these concepts. The results, findings and recommendations will be shared with the supply chain planning community.

More information about the Spark Initiative is available at [www.omp.com/spark](http://www.omp.com/spark).

### An innovation initiative by OMP

OMP helps companies facing complex planning challenges to excel, grow and thrive by offering the best digitized supply chain planning solution on the market. Hundreds of customers in a wide range of industries - spanning consumer goods, life sciences, chemicals, metals, paper and packaging - benefit from using OMP's unique Unison Planning™ solution.

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## GLOSSARY

This glossary introduces you to the **outside-in planning concepts** which will be discussed and tested by the Spark Initiative. Its objective is to help you become accustomed to this new way of thinking.

We explain important **concepts** such as outside-in process thinking, market and demand drivers, and how they relate to key challenges throughout the supply chain. Finally, it introduces **techniques** to combat these challenges and identifies key **success measures** to track supply chain improvements.



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# DEFINING OUTSIDE-IN PROCESSES



## RETHINKING PROCESS FLOWS

**Today's planning processes are inside-out**, which is a mindset of "let's distribute and sell what we produce" versus "let's design and operate our supply chain around what we can sell."

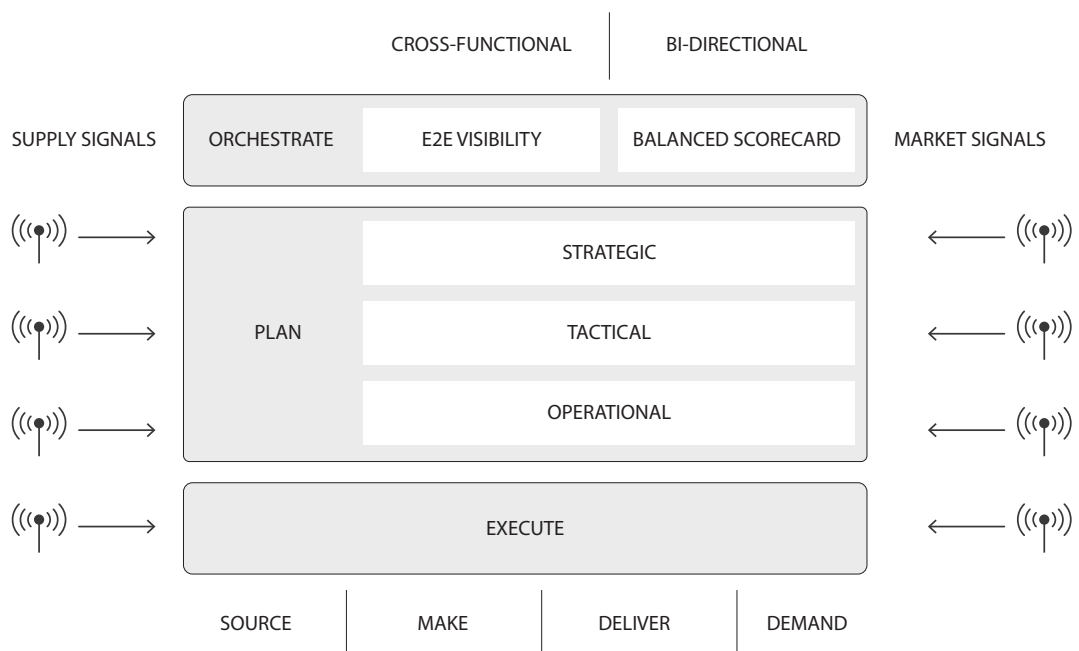
The current design of business flows and planning processes limits the use of 'outside-the-enterprise' data (from the market or supply side) - even in cases where its value is well understood.

Shifting to an outside-in mindset requires **re-designing the planning processes** to make it possible to include external data.

At the same time, including such data has its challenges. Very little market data is available in a format that is usable in traditional planning tools and processes. However, pattern recognition and **new forms of analytics** allow companies to use imperfect data.

## OUTSIDE-IN PROCESS

An outside-in process starts with understanding market potential through market data, minimizing data and demand latency. It then focuses on reaching a shared, desired outcome, with minimal process latency, through **cross-functional alignment and bi-directional orchestration** across the stages of source, make, deliver, and sell.



### MARKET DATA







The start of an outside-in process is understanding **market potential** through the use of market data which surrounds the supply chain. Some examples are:

	Climate and weather patterns		Economic and political trends
	Consumption trend analysis		Major events
	Rating and review information		Smart device information such as geolocation data ...

The relative importance of market data sources varies by industry and changes over time.

### SUPPLY DATA

Similar to market data, supply signals provide insights into how the **upstream** nodes of the supply chain are behaving. Some examples are:

	Supply quality sensing		Capacity data from co-manufacturing or other service suppliers
	Logistics signals such as port congestion, transportation rates ...		Inventory trends from material suppliers
	Smart device information such as shipment and truck tracking data		Raw material cost evolution

The relative importance of supply data sources varies by industry and changes over time.

## OUTSIDE-IN PROCESS CHARACTERISTICS

### Cross-functional alignment

Outside-in processes aim to develop insights which **synchronize across source, make, deliver, and demand**. This ensures a coordinated response of the enterprise to market conditions and potential and aligns the objectives of the different corporate functions with the help of a balanced scorecard.







### Bi-directional orchestration

The fluid movement of decision-making across functions can drive bi-directional orchestration of **margin, mix, and volume** to maximize strategic objectives. Clarity of local and global performance recognizes that different geographies and divisions have different potentials.

## OUTSIDE-IN PROCESS OUTCOMES

An outside-in process focuses on reaching a desired outcome: **winning at a moment of truth**. Results are tracked in a balanced scorecard, visible to cross-functional stakeholders.

Examples of outcomes are:

	Ship on time in full (OTIF)		Inventory effectiveness metrics such as in-stock %, inventory turns ...
	ETA accuracy		First-pass yield
	Forecast value-add improvement		Margin and growth metrics





### KEY OUTSIDE-IN PROCESS CAPABILITIES

An outside-in planning process requires the organization to **develop certain capabilities**, such as:

#### Demand visibility

Understanding the source of demand, how it is translated upstream, and how it is impacted by mix, price, promotional actions, and other demand levers.

#### Market-driven demand management

Use of market signals to assess baseline or market potential and improve the demand "forecastability". This is tied to demand sensing capabilities.

#### Bullwhip eliminator

Translation of downstream market demand into upstream requirements with minimal latency.

#### Digital twin

Using a parallel model to enable simulations by planners with minimal latency.

#### Collaboration

Sharing of customer or supplier data in a meaningful way.

#### Synchronization and time horizon consumption

Bottom-up and top-down planning across applications with market-driven consumption logic.

#### Planning effectiveness

Monitoring of how planning links to business objectives.

#### Autonomous planning

Continual learning based on planning effectiveness and adapting to market shifts.



### RELATED PROCESS MODELS

Some **existing planning practices** resemble outside-in processes. However, they do not always connect to supply chain planning as a market signal. Instead, they **operate in isolation** within functions translating demand requirements into order signals.

#### Vendor-managed inventory (VMI)

In VMI (also called supplier-managed inventory) the supplier uses information on their customer's inventory levels for their product to optimize their supply to that customer, reducing the risk of unnecessary inventory build-up or shortages.

#### Just-in-time (JIT)

In JIT, a similar exchange of market data from the customer is used to eliminate customer inventory altogether. As this reduces buffer inventory to a minimum, suppliers often take responsibility for the safety stock required to reduce the risk of a stock-out.

#### Customer centricity

An outside-in process is a different concept than customer-centricity – although there are clear overlaps. Both concepts start with a good understanding of the end customer's needs.





# RETHINKING DEMAND



**Understanding demand** is key to creating an outside-in process. In today's planning processes, demand signals only flow into specific processes at specific moments of the planning cycle. The latency caused by these flows drives the bullwhip effect and reduces a supply chain's effectivity.

To fully appreciate how outside-in planning treats demand signals differently, we need to revisit key concepts like demand elasticity, demand shaping and shifting, and market potential.

## DEMAND ELASTICITY

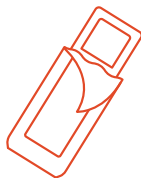
Demand elasticity describes how the total demand for a product is sensitive to factors such as price (or promotion) and its availability. With products that have **elastic** demand, consumption increases with the amount available or with a reduced price. For products with **inelastic** demand, the impact of marketing activities on total consumption is negligible.

Two classic examples at opposite ends of the spectrum are laundry detergent and snack foods.



### Laundry detergent: inelastic

Laundry detergent has a fairly fixed consumption rate: you won't use more just because it's in your pantry or on sale. You may buy more when it's on sale but then you'll just postpone a future purchase (shift demand).









### Snack foods: elastic

If there are more snacks in your pantry, you are likely to eat more of them. If they are on sale, people buy more during the promotion, but not necessarily less when the promotion ends.

### DEMAND LEVERS

Demand levers are different types of marketing and sales actions a company can take to **shape demand**. Demand levers include, but are not limited to:

	Trade promotions		Marketing programs
	New product launches		Portfolio changes
	Price changes		Trade incentives

Most demand shaping activities are combinatorial where multiple levers are used at the same time to influence market potential.

### DEMAND SHAPING

Demand shaping is the **influencing of demand through demand levers**, to reach desired outcomes in terms of alignment with supply, and in terms of the optimization of financial and other metrics. Demand can be influenced through a number of factors including price changes, advertising, and product substitutions.

In the activity of demand shaping, it is important to distinguish between elastic and inelastic demand. When a product has **elastic demand**, channel loading will increase consumption. Examples of items with elastic demand include wine, beer, chips, chocolate, and candy. However, if demand is **inelastic**, pantry loading occurs, where demand is shifted from period to period without affecting overall consumption.

### DEMAND SHIFTING

When demand shaping is attempted on items with **inelastic demand**, demand tends to be shifted from one period to another. This usually increases costs without improving the market potential. For example, if demand simply shifts from one week to another, annual revenue is not impacted while the cost of the promotional action affects the bottom line. However, sometimes there may be good reasons to want to shift demand to align it better with sudden supply opportunities and constraints.

Note: Demand shifting here is different from the Economics definition where changes in factors like average income and preferences can cause an *entire demand curve to shift* right or left. This causes a higher or lower quantity to be demanded at a given price.



# UNDERSTANDING MARKET-DRIVEN POTENTIAL



### MARKET POTENTIAL

Market potential is at the core of a market-driven process. It represents the likely **unconstrained demand in the marketplace** for the defined segment of the business that is being managed.

A **baseline demand** is the steady-state, recurring demand for a product in the absence of any market disruption or the specific use of demand levers such as promotional actions.

An **unconstrained demand** is the total potential (uplifted) demand driven by the use of demand levers.

#### Factors affecting market potential

Market potential incorporates, but is not limited to:

- Understanding the implications of stockpiling
- Considering channel inventories
- Detecting shifts in competitive activity
- Translating of emerging shifts in market sensing with minimal latency
- Holistic understanding of market drivers

### MARKET DRIVERS

A market driver is an external factor that **affects market potential**. Usually, a market is influenced by many different factors, whose relative importance change over time.

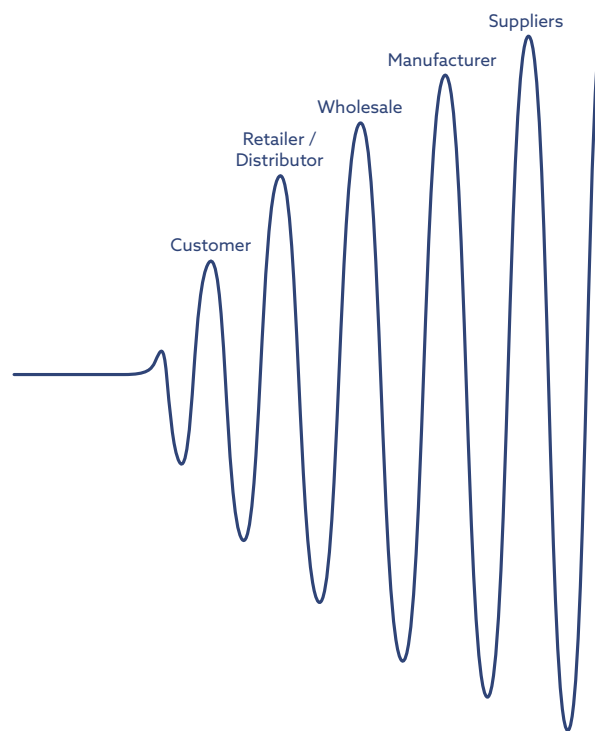
Some examples are:

	Weather		Housing starts
	Events		Fashion trends
	Illness		Competitive activity



### THE BULLWHIP EFFECT

The bullwhip effect is the **amplification and distortion of demand signals** as they travel upstream.



The more demand shaping, the lumpier the demand. The more nodes in the supply chain and the lumpier the demand, the greater the bullwhip effect.

By continuously monitoring market potential and reducing demand translation variance across nodes in the supply chain, outside-in processes help **reduce demand and process latency**. Reducing the impact of issues linked to demand results in a mitigation of the bullwhip swings.





# FACTORS CONTRIBUTING TO THE BULLWHIP EFFECT

### Data latency

Data latency is the time it takes to translate the signal from the channel to a usable signal for the organization.

### Process latency

Process latency is the time that it takes an organization to agree on how to use the signal to drive the decision.

### Demand latency

Demand latency is the time it takes for demand to be translated from a channel purchase, to channel replenishment, to an order placed to an upstream trading partner.

While most companies believe that an order is a good predictor of demand, the increase in the supply chain's long tail increases demand latency elongation. With product proliferation, globalization, and micro-segmentation, demand latency dramatically increased over the past decade.

For instance, a turn item at a mass retailer like Walmart has a demand latency of twenty days, while a long-tail product can have a demand latency of over one hundred days. As a result, the order is not as good a predictor of demand as it was ten years ago, and increasingly, the order signal is out of sync with the market demand.

## BULLWHIP MONITORING

Increased demand variability in supply chains – the bullwhip effect – is omnipresent in today's supply chain. However, the practical measurement and counteracting of this effect can cause companies problems.

**Bullwhip monitoring** answers the following questions:

- What is the bullwhip in each echelon of the supply chain?
- What is the bullwhip amplification factor?
- What is the leading cause of the bullwhip?
- How can we reduce the distortion and amplification?





# OUTSIDE-IN PLANNING TECHNIQUES



### TECHNIQUES TO COMBAT THE BULLWHIP EFFECT

Techniques to combat the bullwhip effect are mostly focused on improving **visibility and reactivity** to downstream demand, and on improving **data sharing and collaboration** between trade partners.

#### Downstream demand signals

Using sell-through and point-of-sale (POS) data to control replenishment and reduce lead time.

#### Organizational alignment through visualization

Calculating and visualizing bullwhip effects making this part of the balanced scorecard.

#### Cycle time optimization

Exchanging demand data and forecasts between trade partners, supplier and distributor collaboration, and 3PL order consolidation.

#### Price stabilization

Reducing price fluctuations using techniques such as special purchase contracting, promotions collaboration, value-based pricing...

#### Use of forward-looking demand drivers

Incorporating forward-looking demand drivers to become less reliant on historical data streams and being able to create more accurate forecasts. This is important now as wholesale shifts in demand have occurred across channels, brands, and shopping methods.

#### Market knowledge

Ingesting real-time information from social, news, event, weather, and sensor sources.



### BI-DIRECTIONAL ORCHESTRATION

Today's processes are one-directional across source, make, deliver, and demand, focused on **siloed functional efficiency**. There is no bi-directional orchestration.

Bi-directional orchestration means working on **trade-offs across corporate functions** to develop the best plan to maximize strategic objectives.

Some examples of orchestration are:

- Increases in raw material pricing, represented as an alternate bill of material and potential alternate supplier discussions and revenue management decisions to determine final market pricing.
- Capacity shifts are orchestrated seamlessly between contract manufacturers and internal sources.
- Shifts in price and market potential drive shifts in product portfolios.
- Insights from contactless shopping translated into demand shaping programs for traditional channels.





## SUCCESS MEASURES





### BALANCED SCORECARD

In today's processes, there is a lack of visibility and alignment on the moments of truth. The use of a **balanced scorecard containing the key outside-in success measures** supports the cross-functional alignment and bi-directional orchestrations efforts.

The balanced scorecard needs to contain all relevant measures to support the cross-functional, bi-directional orchestration.

#### Moment of truth

**The ideal end-state** in the outside-in model is called 'the moment of truth'. In this ideal state, the issue of data being kept in functional siloes comes to an end and there's **cross-functional optimization and collaboration**.

Techniques to combat the bullwhip effect are in place and this improves visibility and reactivity to downstream demand, and data sharing and collaboration between departments and trade partners. These eventually positively impact the business, reaching the **desired balanced scorecard results**.

#### Forecast value added (FVA)

Over 90% of companies create forecasts. But many organizations struggle to know whether the demand planning process is driving an actual improvement in the process.

Forecast value added is a **measurement of demand planning improvement** over the naive forecast (based on shipments of the prior month).

Demand plans go through multiple steps within an organization. The FVA process makes it possible to **attribute the change in demand plan performance to a particular action or participant** in the forecasting process:

- FVA determines the effectiveness of any touchpoint in the forecasting process.
- FVA determines which steps adds value and which do not, to enable the optimization of outcomes.
- The FVA measurement may be positive (the process is improving the accuracy) or negative (the process is decreasing accuracy).



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# THANK YOU

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