

View Point



Infosys Supply Chain Transformation Solutions

Suresh P. Bharadwaj and Hariharan Noorani

Abstract

The increasingly level field of the global economy has created great opportunities even as it has given rise to new challenges. Further, networked operations are placing enormous demands on businesses due to the emergence of new markets. The efficient planning, implementation and control of supply chain operations in such a scenario is the key to success.

To ensure this, organizations need to achieve supply chain visibility, secure demand-supply synchronization and reduce landed costs. This paper examines how Infosys' Supply Chain Transformation solutions help businesses achieve these objectives.

Introduction

In the level playing field of the global market, the supply chain has come to represent the opportunity and complexity of doing business in the 21st century. Managing it to your company's advantage is both an art and a science, and a business imperative for all retailers. Those who master it will thrive while the rest stare at the distinct prospect of fighting for survival.

With the advance of emerging markets, retailing has gone global not only for sourcing products and labor at lower costs, but also from a market perspective. Consequently, we are looking at an era where the supply chain is fast becoming a two-way street, with a virtually free flow of goods, services and information between the developed and emerging markets.

Operational excellence is the hallmark of a good supply chain, spanning the spectrum of activities from planning to execution. It distinguishes the successful retail operation from the mediocre. The cliché of getting the right product to the right place at the right time at the right price is increasingly significant given the challenges that constant demographic changes present.

With 'choice' becoming a consumer imperative, retailers are being stretched like never before to expand their product and service offerings, notwithstanding the limitations of their store's footprint.

Deciding what to stock in a store (assortment planning) and then predicting how much of it to carry (based on demand planning) are opposing forces that can stress even the most efficient optimization routines. Given the millions of item-store combinations that need to be planned for, and the multiple channels through which they are sold, it is easy to see why retailers are challenged by under or overstocking of products.

Some of the most commonly heard refrains in the retail industry are:

- How do I accurately estimate demand for my products and how can I quickly react to fluctuations in actual sales?
- I have no clue whether the container has reached the port of entry or when it is expected to clear Customs or even what's in the container! How can I improve visibility into my supply chain?
- We think our execution costs are getting way out of hand. Is there any way I can put a lid on this?

Infosys' Supply Chain Transformation solutions address these industry pain points. They help clients create a vision for their supply chain in the coming years and provide the appropriate process and technology platforms to help them realize that vision.

The key objectives (and benefits) of the Infosys solution are:

1. Accuracy in forecasting and replenishment
2. Improved collaboration with trading partners
3. Reduced transportation costs
4. Higher warehouse receiving efficiency
5. Superior asset utilization

From Infosys' viewpoint, the starting point on the road to resolving supply chain challenges is better visibility that leads to the specific solutions.

1. Supply Chain Visibility

Visibility has different connotations for different people depending on the role they play in a supply chain. For a picker working the warehouse floor, it is knowing in which aisle and which bay a product is stored, while for a receiving planner it is about when a specific trailer is expected to pull up to the receiving door. For a warehouse manager, it is about visibility to labor and whether he will be able to meet his monthly shipment targets. On the other hand, for an inventory planner, it may be the number of turns that he is able to achieve. Finally, for a buyer it may be tracking a purchase order and its shipment to ensure that the products he ordered were actually delivered, on time and in full, to the correct destination.

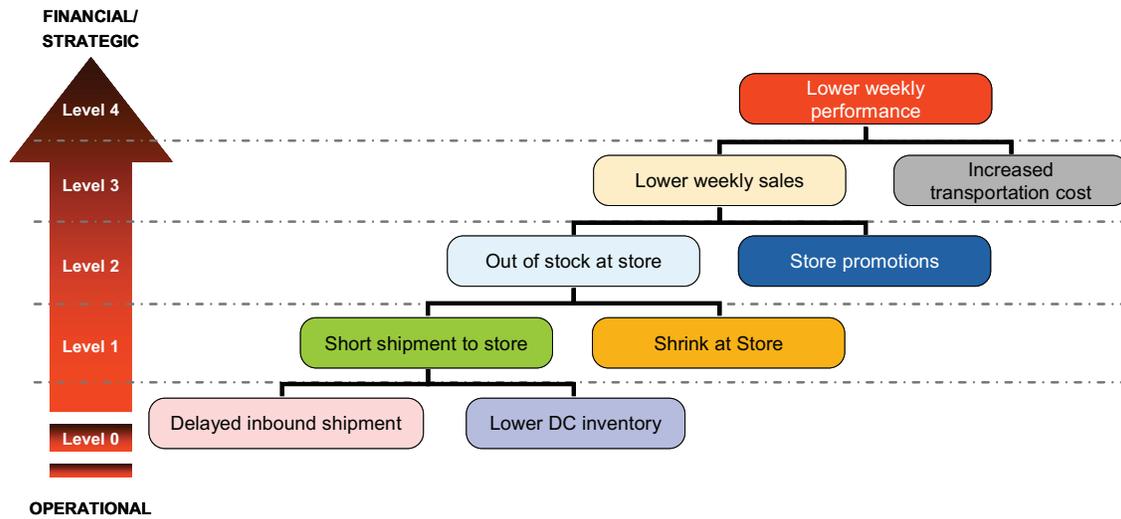


Figure 1: Illustrative supply chain event hierarchy and visibility levels Source: Infosys Research

Regardless of one's specific needs, there are hundreds – if not thousands – of supply chain events that occur on a daily basis. While the desire to track each event is compelling, it is impractical. Supply chain visibility is better managed through exceptions. With this, scarce resources can be focused on sensing and responding to issues before they go out of hand, instead of monitoring normal events that have little adverse impact on the company's supply chain.

Infosys' Supplier Collaboration solution

- Extends visibility well beyond the retailer and across the value chain to vendors, suppliers and other trading partners
- Allows efficient collaboration with domestic and international suppliers, irrespective of their size
- Facilitates timely and transparent information sharing, helping retailers and their suppliers boost operational performance
- Reduces the need to track and trace with its exception-based alert capabilities, freeing up time for value-added activities
- Allows enhanced visibility and synchronization, maximizing the value of a retailer's supplier relationships

Business Benefits	Reduce miscommunication and delays in trading information
	Reduce time-to-market for new products
	Reduce transactional cost
	Optimize network inventory and replenishment management
	Enable collaborative planning, forecasting, promotions and campaign management
	Improve customer satisfaction

Specifically, the Supplier Collaboration solution helps track a purchase order (PO) through its lifecycle stages that include PO creation, PO acknowledgement, PO modifications, and PO history. It also provides visibility into the status of shipments from a vendor location, i.e., delivery schedules, advance ship notification (ASN), appointment schedules, etc. Such accurate supply side visibility enables retailers to promptly react with necessary corrective action as soon as a slippage is noticed during the PO's life cycle.

2. Supply-Demand Synchronization

Commonly known as the 'out-of-stock' (OOS) problem, a stock-out is just one side of the story. Having excess inventory can be as much a problem as having none. To understand this, just talk to a manager of the fresh foods department of your local grocery store. On the other hand, fashion industry experts might tell you that they would love to have a stock-out. This is due to the short life span of their products that necessitates marking down leftover inventory.

Therefore, OOS must be addressed in the context of those items or categories where it has a potential negative impact on sales and margins. OOS also contributes to the overall impression a shopper carries beyond the store – hence its impact on the store and on brand loyalty.

According to a 2002 survey by EMS, Store Analysis 500 ^[1], the average OOS across retailers for items was 8.3%. Significantly, this number jumped to 17% when items were on a 'promotion'.

Figure 2 shows the break-up across the various classes of items that are generally out of stock.

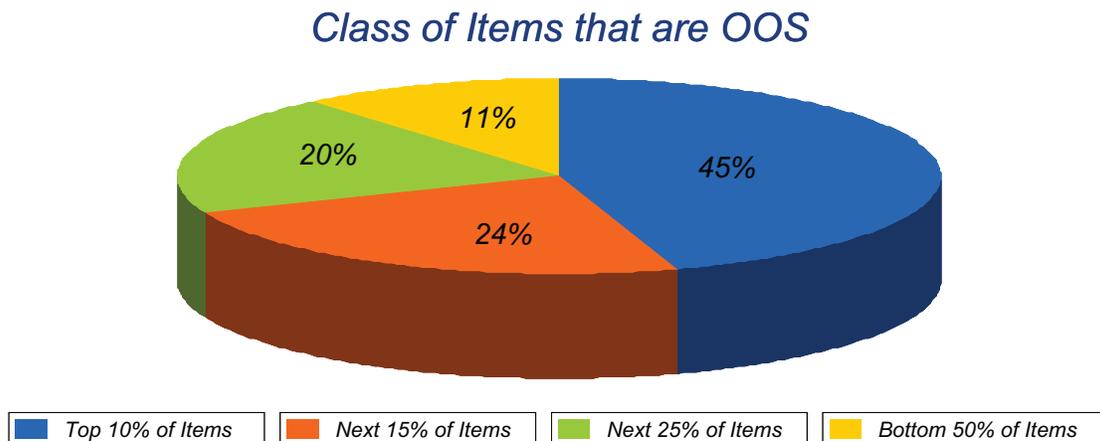


Figure 2: OOS across item class by inventory turns
Source: Stax, Inc. Store Audits; Roland Berger Analysis, 2002

Infosys' viewpoint on OOS or, more specifically, on synchronizing supply with demand, is that there is need for a multi-fold approach. The challenge with OOS in a retail organization is that no single department is responsible for its occurrence. Instead, it is the result of multiple departments or organizations and multiple functional roles working in a manner that is not very collaborative.

Therefore, the solution needs to address a multiplicity of organizations and roles. While some aspects of the solution are technology-enabled, others are process-related changes. Needless to say, any solution to OOS must leverage visibility to demand, inventory and supply.

Demand Visibility

Retailers can use the best of demand forecasting tools and techniques to predict future sales for a period of time. Infosys' viewpoint is that there must be a single forecast across the entire organization done at the true source of demand, i.e., at the retail store using point-of-sale or 'pull' data. The practice of forecasting demand at a distribution center (DC) level using its historical shipment or 'push' data is fraught with inaccuracies and frequently leads to either OOS or excess inventory.

Current forecasting practices have their roots in a day and age where store technologies – such as point-of-sale (POS) systems – were either too rudimentary or unconnected to provide a foundation for forecasts based on actual sales. However, with the speed and maturity of today’s technology, forecasting demand at the store using actual sales data could be the difference between a winner and an also-ran in the race for operational excellence.

Needless to say, the plethora of item-store combinations still presents a huge challenge. The optimal forecasting level and model can be best determined by each retail department. A realistic forecast should also take into account causal factors such as seasonality, promotions, etc., to account for sudden spikes or variations in sale at a category/SKU (stock-keeping unit) level. Such POS-driven forecasts can enable greater accuracy.

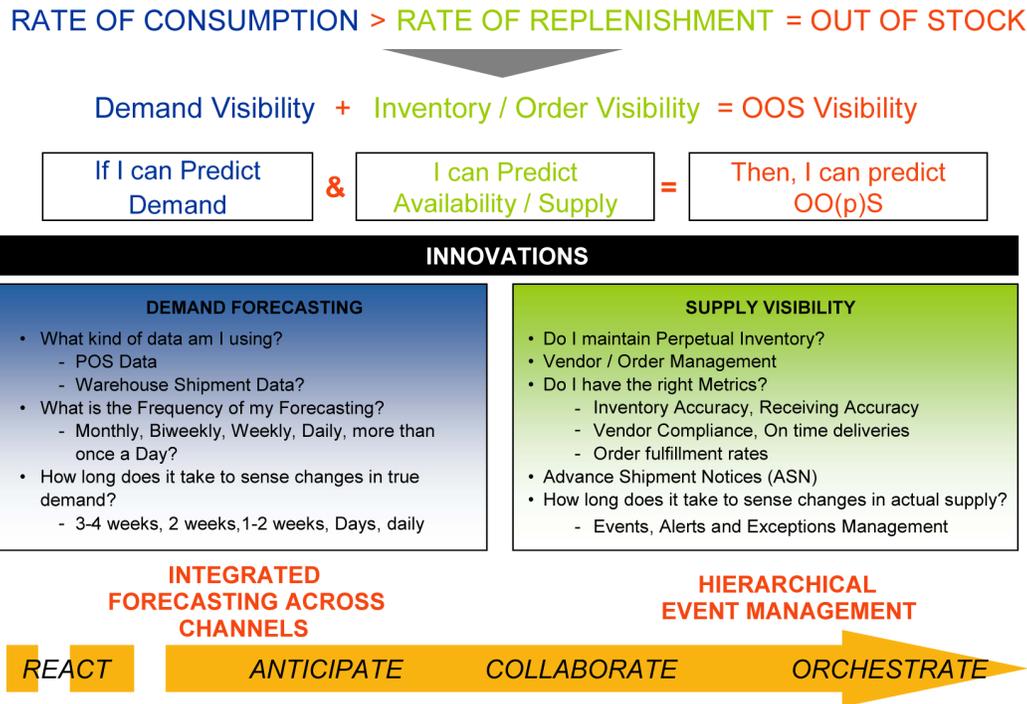


Figure 3: Predicting OOS
Source: Infosys Research

It is also important to understand that forecasts can almost never be 100% accurate. So, how would you deal with variances in actual sales against forecasted demand? The key is to be able to sense such variance as soon as it occurs and in order to do this, you will necessarily need to increase the frequency of forecasting. Given the technology and process limitations, this is the best way to address the divergence of actual sales from forecasted demand and accordingly adjust future forecasts. The sooner a retailer is able to sense and respond to changes, the better his position at proactively anticipating and addressing an OOS situation.

Increasing the frequency of forecasting cannot be across-the-board, but must be done optimally for each set of item-categories based on their velocities. Using supply chain event management and good business intelligence (BI), one can even predict OOS with reasonable accuracy.

Inventory Visibility

As mentioned before, supply chain visibility plays a key role in reducing stock-out or excess inventory situations. Inventory visibility and granularity form the basis for making informed replenishment and ordering decisions. It is obvious that any attempt to resolve OOS issues without a clear view of the stock position would be futile.

Surprisingly, few retailers actually have accurate and real time inventory data at the store level. The best in class have about 85 per cent of their SKUs match system inventory within a predefined range on any given day. Even then, what's in the store may not be on the shelf, causing an artificial stock-out which cannot be resolved by technology alone.

Merchandising decisions, store receiving and stocking practices also play a major role in ensuring that in-stock items translate to shelf availability. Therefore, this calls for a certain level of in-store process discipline.

Supply Visibility

The supply side of the OOS equation automatically falls into place since it is a direct function of demand forecasting and inventory accuracies (details discussed under Infosys *Supplier Collaboration* solution).

3. LogO - Reducing Item Landed Cost

The proof of the supply chain pudding is in its execution – all the planning in the world will come to nothing if execution is poor. Conventional wisdom has it that most supply chain costs are generated and incurred in the execution stage. Consequently, it would appear that the onus of keeping a lid on logistics costs will be on the warehousing, transportation and logistics departments.

However, little thought is given to the fact that, sometimes, key decisions made upstream in the planning stage, may have an inadvertent impact on supply chain execution costs. A case in point is the way buyers and category managers negotiate item rates with prospective and existing vendors. Most prefer to negotiate item rates that are inclusive of freight to a destination of the retailer's choosing – typically a DC.

The reason for this practice is that, traditionally, retailers have considered inbound transportation to be the vendor's responsibility while outbound distribution to stores remained in their domain. Hence, transportation cost would be typically included in the item cost (a practice also termed 'prepaid'). With rising oil prices and fuel costs, retailers are now taking another look at ways to reduce transportation expenses. A way out for the retailer is to take control of inbound transportation (the 'collect' model) with the assumption that he is better equipped to do it because of the scale and better rates that he can obtain vis-à-vis the supplier.

A quick glance at recent statistics on transportation costs reveals why this is such a hot button issue. According to Herbert W. Davis and Co ^[3], transportation cost can be as high as 3-4% of a company's revenue. Even more alarming is the fact that trends show this cost is growing.

Gartner's January 2006 report ^[4] confirms the impact of transportation cost on the overall logistics cost. It states that rising transportation costs threaten to negate supply chain cost reductions achieved. The same report also concludes that transportation budgets worldwide could swell by as much as 25% over the next few years. An AMR report ^[5] states that inbound logistics collaboration technology can enable retailers to reduce freight budgets by up to 10%. Figure 4 shows the break-up of logistics cost.

	2000	2001	2002	2003	2004	2005	2006
Total Logistics costs as a % of sales	9.44%	9.17%	7.65%	7.52%	8.37%	7.51%	8.79%
Component Costs							
Transportation Costs	37%	47%	43%	35%	39%	45%	50%
Warehousing Costs	25%	20%	26%	21%	23%	22%	17%
Ordering / Admin Costs	17%	11%	10%	9%	11%	9%	11%
Inventory Carrying Costs	21%	22%	21%	35%	27%	24%	22%

Figure 4: Logistics cost

Source: Herbert W. Davis Co

Our viewpoint (patent pending: No 1215/CHE/2007) is that most buyers in retail organizations are silo-ed on the basis of items and/ or departments. Consequently, their buying decisions may be sub-optimal from a logistics perspective. Lack of internal visibility on requested delivery dates across buyers and their uninformed decisions is one of the root causes of higher item landed costs. Therefore, optimizing inbound costs during supply chain execution using a transport management system (TMS), while necessary, is a bit too late in the day. To maximize savings potential during execution, the issue needs to be addressed at the time of creating POs and just before those POs are sent to the vendors.

Infosys' LogO solution leverages visibility to PO delivery dates to tweak them and create better load consolidation opportunities. This, in turn, helps reduce transportation costs along with the item landed cost. Our recent pilot studies have shown a 2-4% reduction in the less-than-truckload (LTL) spend of a mid-sized grocery retailer.

Conclusion

Managing a retail supply chain continues to be an enormous challenge. Manual and disconnected processes, asynchronous supply-demand situations leading to OOS and rising execution costs are some of the key challenges facing retailers. One of the primary reasons for these problems is lack of complete supply chain visibility across the value chain. Infosys' supply chain transformation solutions help create and leverage role-based visibility to address specific pain points, thereby helping retailers transform their business.

References:

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About the Authors

Suresh Prahlad Bharadwaj: Suresh is a Senior Principal in the Retail Industry Solutions Consulting Group. He has over 20 years of IT/consulting experience in supply chain execution with a focus on designing and implementing warehouse management systems. Presently, he leads the Supply Chain Transformation Consulting Practice within the Retail IBU at Infosys. He can be reached at Suresh_bharadwaj@infosys.com.

Hariharan Subramanian Noorani: Hari is a Consultant with the Domain Competency Group in the retail vertical. He has over 4 years of experience in the CPG industry in areas of Sales and Distribution functions. He can be reached at Hariharaan_noorani@infosys.com



For more information, contact askus@infosys.com

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