Integrated Demand Planning
The Key to Next-Level Supply Chain Performance and Customer Satisfaction

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Introduction

From the dawn of the industrial revolution in the late nineteenth century, the process of mass production and distribution has centered, to a significant degree, on guessing future customer demand then guessing at required inventory levels to fulfill that demand.

Today, even as advanced software and techniques have automated many supply chain functions, these highly subjective forecasting games are still in wide use, and continue to restrict the supply chain performance of many companies. Demand planning is required to bring forecasting into the age of the digital economy. It is central to the migration to CPFR (collaborative planning, forecasting and replenishment) standards, which enable suppliers to more effectively assume inventory management functions for customers.

For many distributors, forecasting is a 19th century science

Even with sophisticated ERP systems, forecasting improvements have remained elusive for many distribution organizations—often because demand-planning functions are not automated, nor fully integrated with other supply chain modules. So, the fallback method is either a simple calculation in spreadsheets (Excel is the most widely used forecasting tool) at the inventory item level, or best-guess figures from sales personnel or product managers. Since the entire planning process often starts with a sales forecast (just as it has for over a century), it is easy to see why SCM performance has not advanced as much as it should.

Because it is so often a guessing game, seat-of-the-pants forecasting can create significant errors. Even small errors in ordering, when multiplied upstream and downstream in the supply chain, can create havoc on inventories and deliveries. This phenomenon is generally known as the “bullwhip” effect.

Distribution organizations put up with such inefficiencies for a number of reasons.

> Uncertainty in how to measure collaborative processes and performance
> Concerns over the cost and reliability of automated demand planning
> Concerns over data security

But the fact is, most small and mid-size distribution organizations that lack automated demand planning capabilities also lack an adequate SCM infrastructure into which a demand planning system could be integrated. Manual processes are still common, as are antiquated software and networks. For these companies, market pressures for collaborative planning may be the tail that wags the dog—forcing an accelerated migration to more advanced and seamless SCM solutions so that demand planning capabilities can be properly deployed and supported.

A TYPICAL SUPPLY CHAIN

As the diagram here illustrates, multiple supplier/customer relationships comprise a typical supply chain. Because forecasting is part of the business process for each of these relationships, it is easy to see how forecasting errors at any point can have a ripple or “bullwhip” effect on lead times and deliveries at the end of the chain.
In recent years, margin pressures among large retail and industrial customers have spurred intense efforts to reduce costs, and have yielded volumes of research into the cost impact of supply chain inefficiencies.

For instance, according to Harris Interactive and Industrial America, 15 percent to 20 percent of inventory being held across the retail supply chain at any given time could be eliminated through improved planning, forecasting and replenishment methods. This amounts to $150 billion to $200 billion worldwide, and $40 billion to $50 billion in the United States alone.

For most organizations, a 15 to 20 percent difference in inventory levels could easily make the difference between poor fiscal performance and a robust bottom line; it could also determine a company’s position in a competitive market. As market pressures continue to squeeze margins at all points in the supply chain, more and more distribution organizations will be forced to recover that 15 to 20 percent cost inefficiency through greater automation and productivity.

There is also the matter of meeting customer compliance standards. Large customers in most retail and industrial markets have already off-loaded many supply chain responsibilities onto suppliers, with tightly defined rules that govern delivery schedules and transaction formats. Poor forecasting is costly enough when it causes overstocking; but when it causes deliveries to be late or incorrect, the resulting non-compliance fines can be onerous, as well as cause damage to customer relationships.

Finally, forecast data impacts virtually all other processes in a supply chain system—and in business operations as a whole—from warehouse management functions, to labor management, to financial planning. So, optimum supply chain performance and business efficiency will never be better than the accuracy of the forecasts.

Forecasting is all about predicting the future, which will always be an imperfect exercise. The concept of more accurate demand planning based on sophisticated statistical analysis techniques has been around for decades, but has been far too complex for most organizations to apply manually, and generally unavailable as an integrated component within widely marketed business software suites.

But now demand planning software is more advanced and more available. Properly applied, demand planning software can automate sophisticated statistical techniques—replacing conventional subjective forecasting methods, and sharpening accuracy.

Demand planning creates better forecasts by breaking the forecasting process into smaller logical parts—by customer, channel, territory etc.—and then reassembling the pieces to create a more accurate forecast. For example, there may be two distinct types of customers: a few that are very large, and many that are small. One method would be to simply forecast inventory items based on the past. A demand planning process could forecast each large customer individually using a combination of collaborative methods. The collective group of small customers would have only their history (removing the large customer data) used to statistically calculate a forecast. These results would then be combined to create a more accurate result.

Demand planning can also employ different techniques to forecast new product introductions, deal with promotions and other sales or environmental events, spot trends and seasonality, replacement items and other forecasting needs. With multiple tools and views, demand planning software can automate the incorporation of these variables to create a more reliable map of the future. This empowers a distribution organization to manage demand instability, align inventory policy with business plans and improve both profitability and customer good will.
Demand Planning Requirements

To be complete, a demand planning solution should have comprehensive statistical analysis capabilities that are flexible and automatic. It should also provide decision-support value to management—including the ability to monitor the accuracy of forecasts, identify problems, and see trends in sales and booking. Early identification of these issues allow for quick reaction to maximize profit potential. Finally, the business intelligence generated by the solution needs to be universally available to all members of an organization—providing each person with views and tools that help provide form to their unique needs.

To apply a "wish list" approach, an ideal demand planning solution should:

> Apply sales history and statistical techniques to predict future usage
> Accommodate user-defined planning groups on any level or combinations of levels, such as product class, customer class, and territory
> Enter forecasts for some customers directly while allowing the past usage (excluding the effects of the directly forecasted customers) of the rest of the customers to drive statistical calculations. The complete forecast includes both groups
> Enable the use of both bottom-up or top-down methods of maintenance
> Support event models that extend exponential smoothing by providing adjustments for special events like promotion, sales, shutdown, or other irregular occurrences
> Maintain unlimited versions of forecasts
> Automatically adjust for seasonality
> Integrate seamlessly with other supply chain modules, as well as with financial and HR applications
> Provide a simple and intuitive user interface, to minimize training and user errors
> Include multidimensional analysis to provide demand reporting and analysis to the entire organization

From Demand Planning to Vendor Managed Inventory (VMI)

Efficient, automated demand planning is a central requirement for Vendor Managed Inventory, and VMI is the future.

VMI is sometimes known by other names in different industries. In the grocery and apparel industries, it’s often called Efficient Customer Response (ECR). Just-In-Time Distribution (JITD) is the familiar term in automotive; and it’s frequently called Quick Response in the retail industry.

First Popularized in the late 1980’s by Wal-Mart and Procter & Gamble, VMI is a relationship in which the supplier makes the main inventory replenishment decisions for the customer.

In years past, suppliers operated vendor-stocking programs whereby a representative visited a customer periodically and restocked their supplies. VMI is different in that customer sales and stocking data is automatically provided to the supplier electronically, thus providing a near real-time picture of inventory requirements. VMI accepts a number of different transaction methods including EDI, and also includes scheduled billing options, which allow combining of the daily shipments into one invoice for a specified period of time.

With the automated information sharing made possible with VMI, suppliers can replenish inventory levels at the customer site without interaction from the customer. The inventory may be owned by the customer or by the supplier (on consignment). The competitive advantage delivered with VMI includes consistent order processing, data availability for analysis, customer satisfaction, closer customer relationships and ultimately, customer retention.

VMI offers significant advantages to the customer that seeks to lower costs by placing inventory decisions and responsibility squarely on the shoulders of the vendor. But as the nearby table shows, the vendor benefits as well.
In addition to the demand planning requirements listed earlier, an effective VMI solution should:

- Handle both managed inventory and consigned inventory at the inventory and site level
- Include EDI support for: 852 (product data activity), 855 (purchase order acknowledgement) and 856 (advance shipment notification)
- Enable the creation of suggested inventory replenishment models for each facility, that can be released or modified as needed
- Provide recommendations for firm or in-process replenishments (cancel, reschedule in, reschedule out, surplus)
- Configure "electronic shipment notice" requirements at the partner level
- Offer configurable billing options to allow scheduled billing at a partner and facility level (daily, weekly, bi-weekly, or monthly)
- Include actual versus budget tracking by accounting department
- Handle management fees, in addition to billable transactions
- Offer flexible replenishment methods, including multiple variable safety stock calculation methods
- Include calculation of lead times, EOQ, reorder points and average usage (based upon demand formulas)

**Microsoft Business Solutions Offers Integrated Demand Planning Capabilities to Smooth the Path to Collaborative Customer Relationships**

The ideal prescriptions for demand planning and VMI, as detailed in the previous pages, are incorporated in SCM solutions from Microsoft. These robust and integrated “standardized” Supply Chain Management solutions are designed for small and medium-size distribution firms.
Microsoft adds the critical dimension that is missing in most SCM solutions — demand management (which includes demand planning and forecasting) coupled with powerful, pre-designed analytics (business intelligence) capabilities. This answers the mid-tier supplier’s urgent need to provide sell-through value to important customers. As part of the Microsoft Business Solutions standard SCM solution for distribution organizations, the Microsoft demand management and analytic modules empower suppliers to accurately sense demand at the customer site. Because this demand (“sense”) data is shared at the process level in the system (instead of the database level), it is intelligently and automatically applied among the source, make and deliver functions. This eliminates manual interpretation and re-entry of the data, and enables the demand fulfillment (“response”) to be on time, accurate and automatic.
Integrated Demand Planning: The Key to Next-Level Supply Chain Performance and Customer Satisfaction

A Simple and Seamless End-to-End Solution

The Supply Chain Management suite from Microsoft draws on market-proven applications that cover every major Supply Chain Management process, from demand management, to inventory management, to purchase order management. They also link seamlessly to other vital business applications that comprise Microsoft Business Solutions, such as financials, CRM and Human Resources. Because the system is largely pre-integrated, it installs easily and is simple for users to learn. This typically shortens the time for complete deployment to less than 120 days.

Value That Extends Through the Enterprise

This complete SCM solution has been finely integrated within the Microsoft operating environment, and is thus capable of seamlessly sharing data with Microsoft Office applications, including Outlook, Word and Excel, as well as Microsoft .NET. This places Supply Chain Management processes within an environment that is proven and already familiar to users in organizations at all points in the supply chain. In this integrated enterprise environment, real-time inventory and customer demand data can be easily translated into spreadsheets, sales contact reports and other valuable reporting and analysis tools.

Establishing the Standard for Affordability

The use of proven applications in an established integrated operating environment reduces license and deployment costs to a fraction of what has been typical in large Supply Chain Management projects – and puts the benefits of Supply Chain Management within the reach of small and medium-size suppliers. And to further clear away cost obstacles, Microsoft even provides financing of complete solutions, through the Microsoft Capital(R) program.

CASE STUDY:
For The Franzus Company, Automated Demand Planning Boosts Sales Efficiency

For more than three decades, the Franzus Company has been an industry leader in travel accessories. Based in Beacon Falls, Connecticut, the fast-growing distribution company markets its products under the brand name Travel Smart through more than 500 retailers, including such giants as Wal-Mart, K-Mart and Kohl's. The products include travel appliances, electrical conversion products, travel convenience accessories, travel security, travel healthcare and auto accessories.

Franzus found its tedious manual forecasting system increasingly inadequate for forecasting demand for the company's extensive product portfolio—over 250 SKUs. Inaccurate forecasts were resulting in out-of-stock items. "Manually inputting information for hundreds of products was not only time-consuming, it was also a process that was highly error prone," said Lisa Reed, Franzus Sales Administrator and Category Manager. "And most of our large customers simply don't do back orders, so if we're out of stock, we simply lose the sale." According to Reed, the manual system was complicating efforts to achieve efficiencies in inventory management, as well as to identify and eliminate poor performing products.

Franzus decided to scrap the old manual system in favor of something far more integrated and automated. The company had already migrated from a Unix-based system to an integrated and comprehensive Microsoft Business Solutions enterprise system that included
Integrated Demand Planning: The Key to Next-Level Supply Chain Performance and Customer Satisfaction

financials, order management, purchasing, advanced shipping management, and eCommerce. The company was ready to integrate the demand planning module offered by Microsoft.

The integration of the demand planning system into the Microsoft Business Solutions suite took only two weeks, during which time Franzus personnel went through three days of hands-on training by a Microsoft certified partner.

The new, automated demand planning system quickly yielded significant improvements. "After only a few months, the new system reduced the time required for forecasting by over 70%," said Reed. "And our forecasting accuracy, which was typically only 40% to 50% with the manual system, is now at 95%.

According to Reed, the system's flexibility allows for adjusting forecasts on the fly; so as more sales history is entered, seasonal sales patterns will be increasingly easier to spot and accommodate. "It has given us the capability to be more responsive to customer demand and it has virtually eliminated the risk of lost sales due to out-of-stock items," she said.

Microsoft Business Solutions: Winning Strategies for Distribution

Microsoft gives your mid-size business the same kind of information-leveraging power that, until now, has been available only to very large distribution organizations. Microsoft Business Solutions for the Distribution Industry are comprised of integrated and highly customizable systems that save time and money through every phase of your business—from e-commerce to accounting, from the warehouse to customers. It's a total enterprise solution that's simple and affordable. It can empower you to:

> Make smarter, faster business decisions
> Improve employee and business productivity
> Gain a competitive advantage

Microsoft Business Solutions for the distribution industry connect easily with the Microsoft platform—a highly versatile environment that scales to meet nearly any business software protocol. From Windows®-based applications to specific industry programs, Microsoft integrates seamlessly with your existing and future enterprise systems, providing solid and reliable performance.