

# A Demand-Driven Approach to Vendor Managed Inventory

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# A Demand-Driven Approach to Vendor Managed Inventory

**The Demand-Driven VMI solution takes a very different approach to VMI: VMI can only deliver on its true potential when vendors are given the full picture of the drivers of market demand. With visibility to future demand, vendors can increase on-shelf availability, increase sales, and decrease operating costs.**

## EXECUTIVE OVERVIEW

Manufacturers, or vendors, and their customers continue to adopt vendor managed inventory (VMI) programs to improve supply chain performance through collaboration achieved by consolidating forecasting and replenishment responsibility upstream with vendors. VMI works because vendors gain a better understanding of end-consumer demand and can fulfill this demand with a degree of focus that multicategory distributors and retailers cannot match.

Unfortunately many VMI programs fail because they simply transfer the transactional aspects (and costs) of placing replenishment orders from customer to vendor, without improving the vendor's understanding of demand. In fact, such VMI programs often degrade supply chain performance because vendors lack visibility to retailer-driven promotions and other store-level events. This visibility is needed to forecast demand accurately.

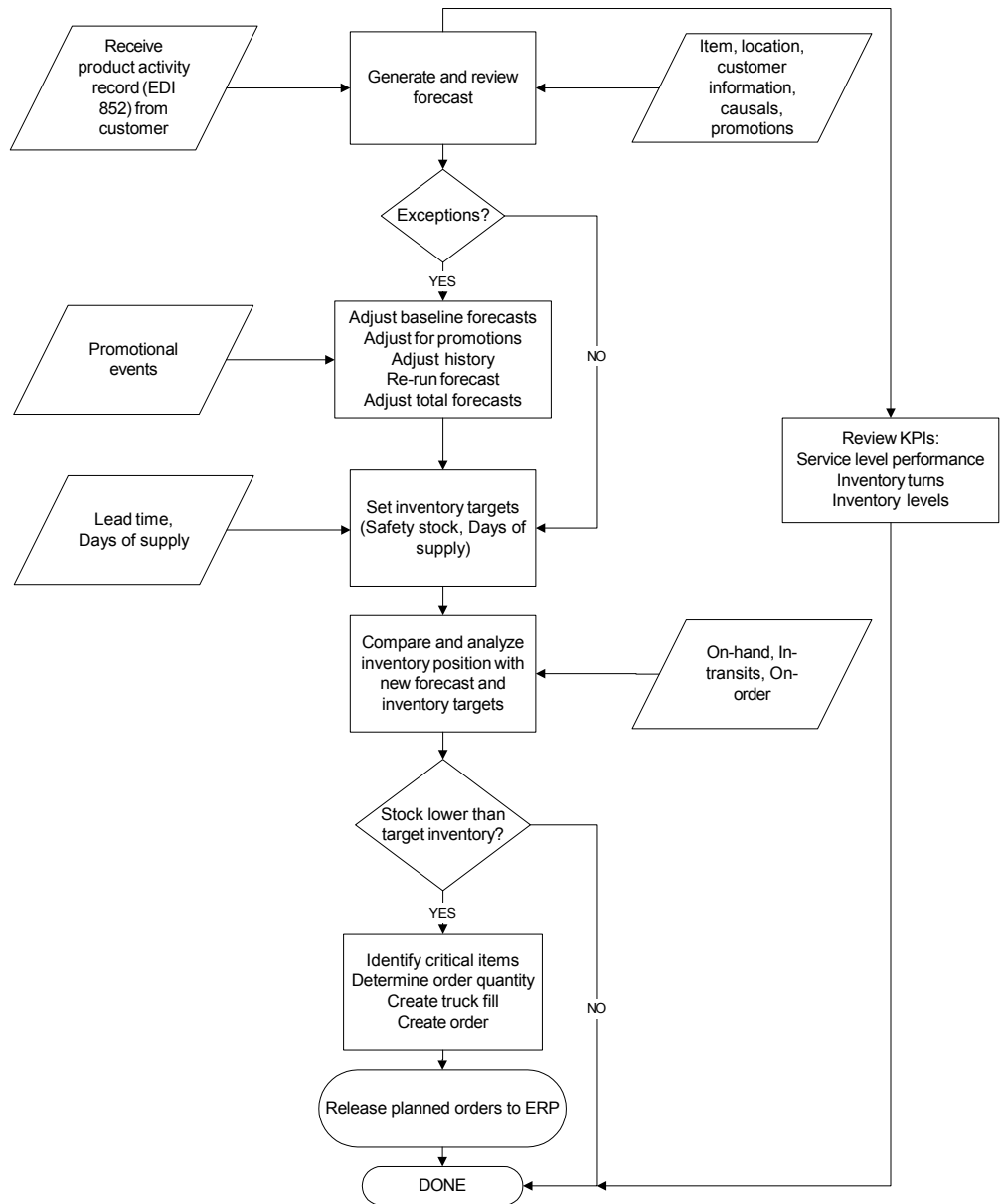
Based on Oracle Demantra Demand Management, the Demand-Driven VMI solution takes a very different approach to VMI: VMI can only deliver on its true potential when vendors are given the full picture of the drivers of market demand. With visibility to future demand, vendors can increase on-shelf availability, increase sales, and decrease operating costs. In addition, the solution provides the flexibility and scalability needed to ensure that your VMI capabilities grow and evolve with your future needs.

## INTRODUCTION

The VMI process varies tremendously by industry, manufacturer, and customer. Once considered to be distinctly different and less strategic than collaborative planning, forecasting, and replenishment (CPFR), VMI programs have evolved, and the distinction is blurring. Variants of VMI such as comanaged inventory (CMI), and continuous replenishment planning (CRP), and related processes such as direct store delivery (DSD) and scan-based trading further blur definitions.

Demantra Demand-Driven VMI has been used in industries ranging from consumer packaged goods, to consumer durables, to media and entertainment. The following VMI process—as implemented in a Demantra Demand-Driven VMI solution for a consumer packaged goods company—is sufficiently high-level to be

relevant to most industries. The process shown in Figure 1 below provides a reference for the rest of this white paper.



**Figure 1. Reference VMI process as implemented in a Demantra Demand-Driven VMI solution.**

## Demantra Demand-Driven VMI Solution Footprint

At the heart of Demantra Demand-Driven VMI is powerful demand planning software. The following features are particularly relevant to successful VMI programs:

- Proprietary Bayesian forecasting for accuracy
- Comprehensive support for new products and changing assortments
- POS data leveraged for accuracy and real-time demand monitoring
- Flexible data hierarchies and calendars for visibility
- Consensus-based forecasting for one-number planning

Demantra Demand-Driven VMI leverages the proven, demand planning, inventory management, collaboration, and promotion planning capabilities of Demantra Demand Management that is configured to create a superior platform for VMI, CMI, and CRP programs. This solution is tailored to manufacturers of consumer goods—such as consumer packaged goods (CPG), consumer durables, media and entertainment products, and fashion and apparel items—who sell to distributors, wholesalers, and retailers. In this white paper, the term “retailer” will be used to refer to retailers, distributors, and wholesalers. Figure 2 below outlines the major functional components of Demantra Demand-Driven VMI. The key VMI process steps are arranged across the top, and the three key enabling capabilities that support the entire VMI process are shown underneath. This white paper discusses each of the seven functional components in detail.

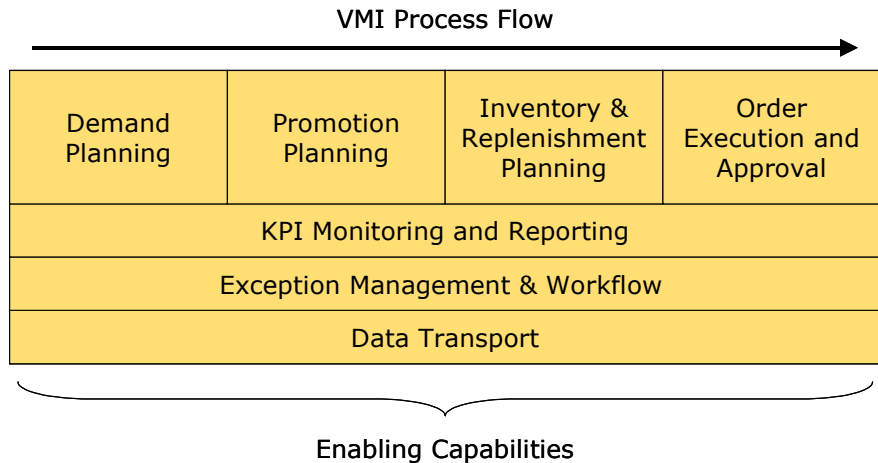


Figure 2. Demantra Demand-Driven VMI solution footprint.

### Demand Planning Is Key to Successful VMI Programs

At the heart of Demantra Demand-Driven VMI is the powerful capabilities of Demantra Demand Management. The following features are particularly relevant to successful VMI programs.

#### Proprietary Bayesian Forecasting for Accuracy

A proprietary Bayesian, combinational forecasting engine generates the most accurate forecasts possible, analyzing product movement data at the most granular level. Pattern recognition algorithms detect seasonality, trends, and holidays. Multivariate statistical models draw inferences between demand and multiple simultaneous causal factors such as promotions, pricing, and weather. In contrast to best-fit, single-model approaches, Bayesian modeling takes advantage of dozens of industry-standard and proprietary linear and nonlinear multivariate models. They are automatically combined in weightings tailored to each product-location combination by using self-learning and self-adapting algorithms. This approach maximizes predictive accuracy even as market conditions change.

### **Support for New Products and Changing Assortments**

VMI adoption has been particularly high in categories such as consumer electronics, footwear and apparel, and media and entertainment—categories characterized by dynamic product assortments. These dynamic assortments result from frequent new product introductions, short product lifecycles, and high degrees of seasonality. Such categories are particularly challenging from a demand planning viewpoint because there is limited or no demand history, and consumer demand changes rapidly over time. And the costs of misjudging demand can lead to unrecoverable lost sales, unprofitable markdowns, or products that must be written off completely.

Demantra Demand Management offers several powerful forecasting techniques for products with limited demand histories:

- **Chaining**—Linking a new product to the demand history of one or several products with similar demand characteristics, as determined by human judgment
- **Attribute-based forecasting**—Forecasting new product demand based on the demand history of products with similar product attributes such as brand, flavor, or form
- **Shape modeling**—Applying demand “shapes” to new product demand, with the ability to scale the shapes up or down based on initial demand

With the ability to accurately forecast demand for new products, short lifecycle products, and seasonal products, vendors can maximize on-shelf availability while minimizing inventory levels.

### **Uses POS Data for Accurate, Real-Time Demand Monitoring**

The increasing availability of retailer point-of-sale (POS) data offers manufacturers the ability to understand, forecast, and monitor demand at the consumer level. There are several benefits to this approach.

- More accurate forecasting through more granular demand and causal data
- End-user consumption data to support true continuous replenishment planning
- Store-level detail to support direct store delivery and store-level order partitioning for cross-docking
- The ability to monitor actual demand data in near real time and respond to unanticipated demand levels before stock-outs or overstocks occur

Demantra Demand Management data cleansing algorithms and distributed processing architecture offer the power and scalability required to analyze SKU- and store-level data and update forecasts to reflect actual demand. The exception management engine combs through large quantities of data and pinpoints potential

problems, automatically generating alerts so that issues can be resolved before they result in lost sales or overstocks.

### Data Views Along Any Dimension of the Data Model

Demantra Demand Management employs a multidimensional database structure that is ROLAP-based (relational online analytical processing), allowing users to slice, dice, and roll up data along any dimension. This allows different users to view data and key performance indicators (KPIs) along any combination of product, location, and time hierarchies, such as SKU, product line, brand, category, store, sales region, ship-to, bill-to, or account—all while sharing the same underlying view of demand. The demand plan can be viewed and modified from any dimension within the data model. Changes made at any level are automatically propagated up and down the hierarchy, so that enterprise plans are synchronized.

Figure 3 below shows a worksheet wizard illustrating how a user can select from a variety of hierarchies that model a manufacturer's business:

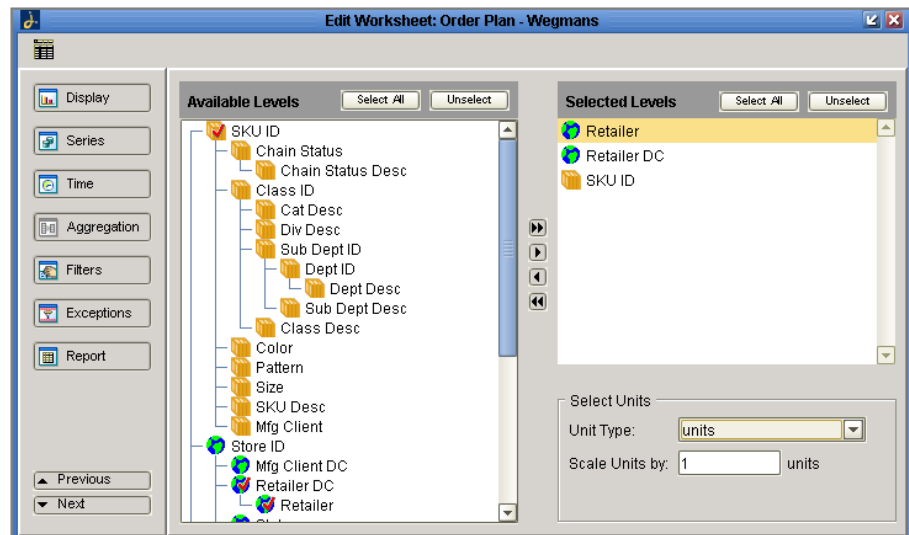
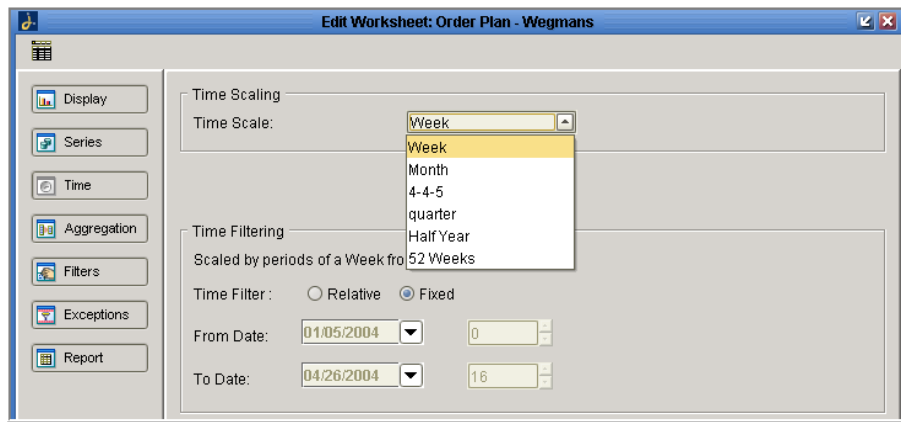


Figure 3. Users can view data using flexible data hierarchies.

Flexible data hierarchies are particularly relevant to supporting retailer-specific planning calendars. Demantra Demand Management supports daily, weekly, monthly, and quarterly planning buckets as well as user-defined time aggregations. Planners can view and analyze data according to any time aggregations they choose, as well as make adjustments to the forecast or order plan. In addition to viewing data along these flexible hierarchies, the solution can be set up to forecast according to these time groupings, depending on business requirements (determined by lead times, planning and reaction cycle times, demand patterns for key SKUs, and so on). This ability to define time groupings applies to forecasting as well as modeling “what-if” scenarios. Figure 4 below shows how a user can select from various time scales.



**Figure 4. Planning calendars are very flexible; the user can select from various time scales.**

### **Consensus-Based Forecasting for One-Number Planning**

Demantra Demand-Driven VMI uses the Demantra Demand Management collaboration platform for all the stakeholders in a company, as well as for external trading partners, to arrive at a single-number forecast. Exception management features trigger-automatic alerts when, for example, large differences are detected between manufacturer and retailer forecasts. The ability to view different forecasts along different hierarchy levels, time periods, and units (for example, dollars and cases) enables different functional groups to quickly reach a consensus. An audit trail of the various forecasts and edits is maintained to improve future forecast accuracy.

### **Promotion Planning Helps Meet Demand Surges**

In many consumer businesses, trade and consumer promotions are the source of the greatest VMI challenges. Yet many VMI implementations offer at best minimal visibility into the sales and marketing departments' promotion plans, not to mention retailers' plans. The result is a never-ending battle to meet demand surges with little advance notice, often incurring lost sales and expedited distribution costs as a result.

The optional Advanced Forecasting and Demand Modeling solution allows manufacturers to plan for, and collaborate on, vendor- and retailer-driven promotions. Promotion lift is forecasted separately from baseline, and effects such as product cannibalization, halo effect, and account switching can also be predicted. These capabilities lead to laser precision in forecasting and optimal allocation of scarce inventory. Figure 5 below shows promotions as a causal factor, and Figure 6 shows a forecast of baseline and promotion lift.



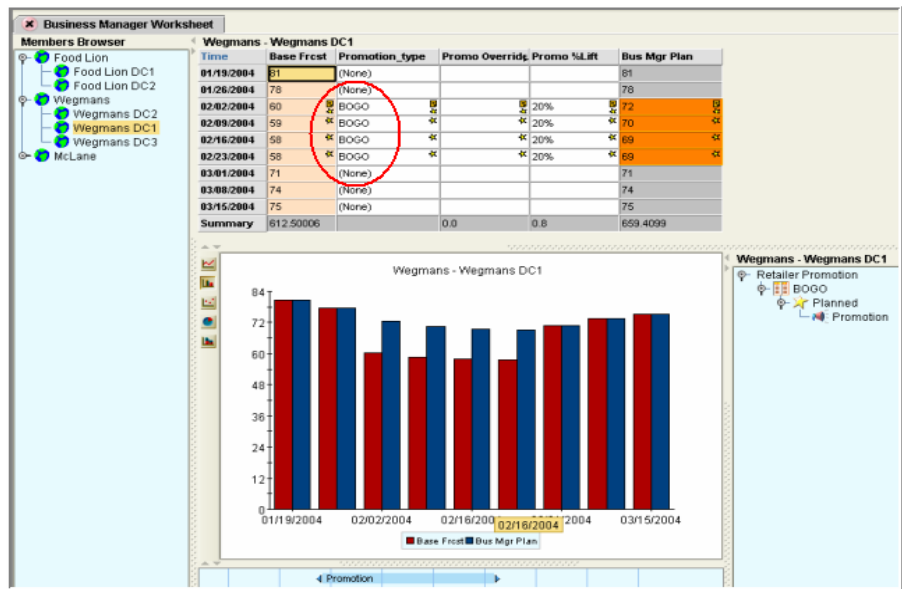


Figure 5. Promotions as a causal factor in demand forecast.

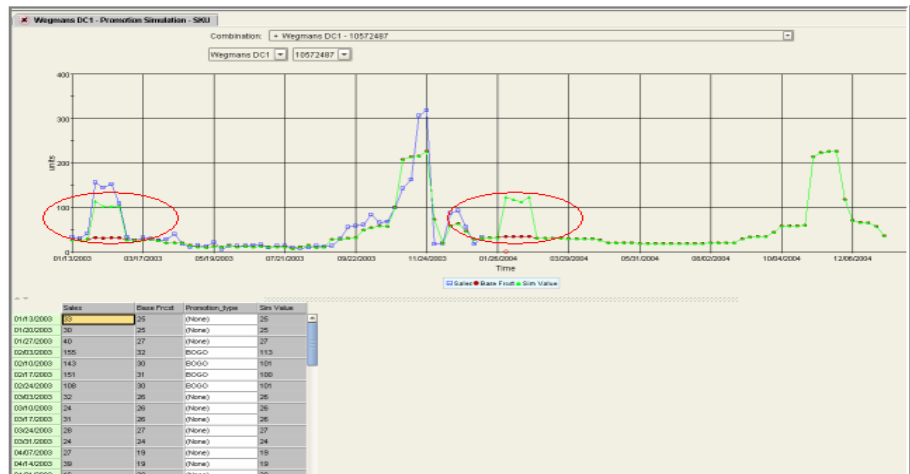


Figure 6. Promotion lift as distinguished from baseline forecast.

### Inventory and Replenishment Planning Maintains Adequate Stock

Once demand plans are in place, Demantra Demand-Driven VMI's inventory and replenishment planning capabilities generate order plans to maintain adequate stock levels in a cost-effective manner. The following are key features.

Demantra Demand-Driven VMI supports the following core functions in retailer setup and administration:

- Retailer setup (New/Delete/Modify)
- Mapping retailer part number to supplier part number
- Item maintenance (New/Delete/Modify)
- Retailer delivery calendar
- Average weekly movement
- Promotional movement
- Maintaining cost and price data
- Unit conversion—dollars, weight, volume, cases, trucks, and so on

### Flexible Inventory and Replenishment Parameters

The Demantra Demand-Driven VMI solution allows users to set and maintain inventory and replenishment parameters for each SKU, at each retailer ship-to location. Inventory objectives can be calculated as statistical functions of forecast demand, lead-time, carrying costs, transportation costs, and required service levels; or as simple calculations such as days of supply and percentage of lead-time demand. Users can modify parameters at the overall retailer level, the retailer ship-to, or individual SKU and ship-to combinations. Parameters can be established by various other criteria, such as ABC classification. All calculations can be replaced with manual overrides. Figure 7 below shows the management of inventory and replenishment parameters by SKU-DC (distribution center) location.

The screenshot shows a software interface with a tree view on the left and a data table on the right. The tree view includes 'Wegmans' and three distribution centers: 'Wegmans DC2', 'Wegmans DC1', and 'Wegmans DC3'. The table displays replenishment parameters for each SKU-DC combination. The columns are: Date, Default Lead Time, Lead Time Override, Min Order, Lot Size, Max Order, Days of Supply, VMI Serv Level, SL Override, and SS Fixed Pot. The 'VMI Serv Level' column is highlighted in red for all entries, with values ranging from 92% to 95%. The 'SS Fixed Pot' column has values of 1 or 2. A 'Summary' row at the bottom shows totals for the selected items.

Date	Default Lead Time	Lead Time Override	Min Order	Lot Size	Max Order	Days of Supply	VMI Serv Level	SL Override	SS Fixed Pot
01/05/2004	7		10	10	1,000	7	92%		
01/12/2004	7		10	10	1,000	7	92%		
01/19/2004	7		10	10	1,000	7	95%		2
01/26/2004	7		10	10	1,000	7	95%		2
02/02/2004	7		10	10	1,000	7	95%		2
02/09/2004	7		10	10	1,000	7	95%		2
02/16/2004	7		10	10	1,000	7	95%		2
02/23/2004	7		10	10	1,000	7	95%		2
03/01/2004	7		10	10	1,000	7	95%		1
03/08/2004	7		10	10	1,000	7	95%		1
03/15/2004	7		10	10	1,000	7	95%		1
03/22/2004	7		10	10	1,000	7	95%		1
03/29/2004	7		10	10	1,000	7	95%		1
04/05/2004	7		10	10	1,000	7	95%		1
04/12/2004	7		10	10	1,000	7	95%		1
04/19/2004	7		10	10	1,000	7	95%		1
04/26/2004	7		10	10	1,000	7	95%		1
Summary	119.0	0.0	170.0	170.0	17000.0	119.0	0.07991655	0.0	1.2342281

Figure 7. Replenishment parameters can be managed by SKU-DC (distribution center) combinations.

### Support for Shelf-Level, Space, and Replenishment Planning

While the majority of VMI programs are focused on managing inventory at the distribution center level, an increasing number of vendors, particularly manufacturers of short-lifecycle products and perishables, are interested in managing their products at the retail store shelf. In some cases retailers are allowing manufacturers to determine replenishment quantities for retailer-defined product assortments and plan-o-grams. Other “shelf-level VMI” programs go further; retailers are allocating shelf space but allowing manufacturers to plan product assortments and facings in addition to replenishment quantities. This represents the ultimate in VMI, giving manufacturers control over key merchandising decisions, tailored to individual store and time of year.

Demantra Demand-Driven VMI offers comprehensive support for this emerging practice of shelf-level VMI, which applies to replenishing traditional store shelves

and to shelf-ready trays, bins, and merchandising dollies. The solution starts by analyzing POS data and forecasting store-level demand. The software then enables manufacturers to plan replenishment quantities, facings, and assortments—while taking retail space constraints into account—to maximize sales and profits.

### **Turn Replenishment Plans into Executable Orders**

The Demantra Demand-Driven VMI solution turns replenishment plans into orders to be executed by your order management, supply chain execution, and enterprise resource planning (ERP) systems. Following are key features.

**Demantra Demand-Driven VMI supports the following core functions in order execution and approval:**

- **Carton, pallet, and truckload building and constraints**
- **Designation of ship type (vendor versus customer ship)**
- **Purchase order assignment (from valid list of POs)**
- **Purchase order review and release to OMS**

#### **Constraint-Based Load Building**

The first step is reconciling order plans with weight and cube constraints at the carton, pallet, and truck levels to maximize transportation utilization. To fill or eliminate partial loads, the solution will reduce or augment orders based on prioritization criteria established using business rules. For instance, in the case of prioritization by days of supply, the system checks for those items for which the current stock goes below the predetermined days of supply for that item (might differ by retailer and ship-to). These items are then ordered in sequence of their prioritization, so that the most critical items get top priority.

#### **Efficient Order Review and Approval**

Once an order is finalized, it must be reviewed and approved by the vendor, and perhaps the retailer, depending on the VMI program. The Demantra Demand-Driven VMI system provides an Order Plan Summary Report by item and by retailer ship-to. The summary report is based on parameters including lead-time, minimum order lot, maximum order lot, incremental order lot, days of supply, inventory on hand, and amount on-order or in-transit. VMI managers can then make adjustments to the order on the fly, and review the impact of these adjustments in the Order Plan Summary report, which is shown in Figure 8 below.

Retailer		Wegmans							
Retailer DC		Wegmans DC1							
Time	SKU ID	Order Plan	Order Plan Overrrig	Cases	Volume(CuFt)	Weight(Pounds)	Include	Approved Weight	# Trucks
12/02/2004	10252094	40		4	36	778	Include	778	0.019
	10370463	10		2	1	42	Include	42	0.001
	10532981	20		3	10	113	Include	113	0.003
	10572487	110		16	111	891	Include	891	0.022
	10679389	20		3	25	324	Include	324	0.008
	10824540	30		6	18	146	Include	146	0.004
	11005950	330		66	578	7,494	Include	7,494	0.187
	11454954	90		18	90	875	Include	875	0.022
	11556167	170		34	187	1,928	(None)	1,928	0.048
	11730997	80		8	8	292	Exclude	292	0.007
	11780863	30		4	3	49	Include	49	0.001
	11818544	310		39	31	1,004	Include	1,004	0.025
	11932569	70		4	7	454	Include	454	0.011
	11947336	60		6	48	875	Include	875	0.022
	11982689	50		8	10	324	Include	324	0.008
	12048995	10		2	2	32	Include	32	0.001
	12059353	40		8	120	778	Include	778	0.019
	12146373	10		2	2	97	Include	97	0.002
	12161186	220		33	550	4,277	Include	4,277	0.107
	12168162	20		2	40	389	Include	389	0.01
	12188160	70		7	228	2,155	Include	2,155	0.054
	12170580	10		1	58	405	Include	405	0.01
	12175817	300		30	30	972	Include	972	0.024
	12262957	10		2	10	97	Include	97	0.002
	12282761	40		5	94	778	Include	778	0.019
	12328920	180		22	106	1,166	Include	1,166	0.029
	12338687	50		2	10	486	Include	486	0.012
	12371570	130		12	24	875	Include	875	0.022
	12380425	20		3	35	65	Include	65	0.002
	12451789	390		78	117	95	Include	95	0.002
	12474130	20		3	2	65	Include	65	0.002
	12474164	80		5	8	292	Include	292	0.007
	12474253	50		2	10	486	Include	486	0.012
12878947	160		20	280	778	Include	778	0.019	
12888341	840		42	1,470	13,608	Include	13,608	0.34	
	Summary	4040.0	0.0	500.19599	4297.5	43471.89		43471.89	1.0867972
12/09/2004	10252094						Include		
	10370463						Include		
	10532981						Include		
10679389						Include			

Figure 8. The Order Plan Summary report shows information by item and retailer ship-to.

### Share Data Between Vendor and Retailer

Underlying the entire VMI process is the efficient and accurate transmission of product and order data between vendor and retailer. Following is a description of how the Demantra Demand-Driven VMI solution supports these data flows.

Some of the data flows supported by Demantra Demand-Driven VMI are

- EDI
- XML
- EDI-INT (AS2)
- OMS
- ERP
- Excel
- Flat files
- Alerts on receipt of EDI signals

### Comprehensive Standards Support

Demantra Demand-Driven VMI solution supports traditional electronic data interchange (EDI) transmission standards, such as EDI 852 (product activity data), 855 (purchase order acknowledgement), and 856 (advance ship notice). Demantra also supports the XML standard and the new internet-based EDI-INT (AS2) standard mandated by Wal-Mart and others.

### Data Validation for Accuracy

Once a data transmission is received, Demantra Demand-Driven VMI validates correct receipt and processing of the data. The solution keeps a log of how many records were sent, how many were processed, and how many were received—at each step of the data integration process. These logs can be accessed by the solution’s workflow engine to provide exception-based reporting and escalation to the appropriate people if there is a problem with the data. The workflow engine can be configured to import data automatically from different systems in the organization, and to send notifications and generate exceptions based on predefined business rules.

### Retailer-Specific Templates

In practice, each retailer's implementation of data transmission standards is unique. Demantra Demand-Driven VMI provides tools for easily mapping these retailer-specific formats to the vendor's VMI process. For example, some retailers might send promotional information along with other EDI data records, while others might send it as a separate EDI transmission. Some retailers might choose to send promotion information as periodic Excel spreadsheets. To handle such retailer-specific requirements, the solution creates templates to map retailer data formats to vendor formats. The templates are then available for reuse, facilitating addition of new retailers to a VMI program, as shown in Figure 9 below.

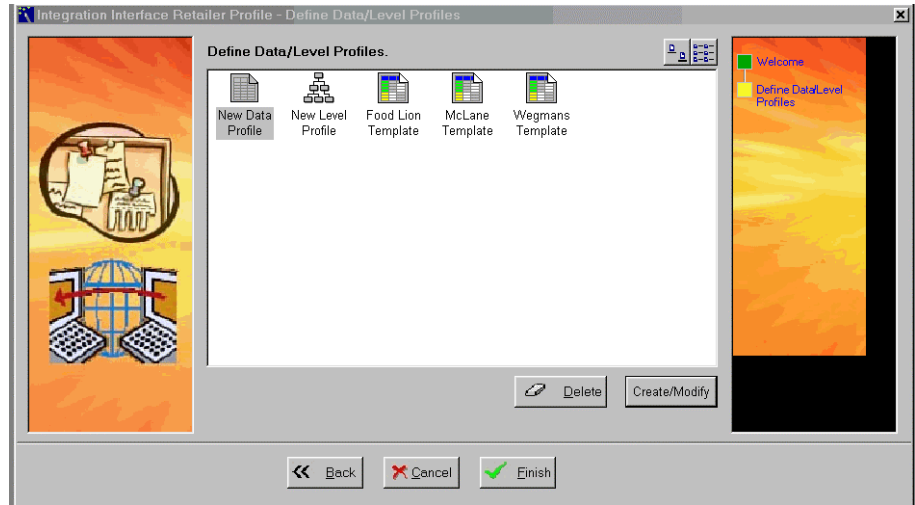


Figure 9. Retailer-specific templates map retailer data formats to vendor formats.

### Identify and Resolve Potential Issues

Demantra Demand-Driven VMI leverages Demantra Demand Management's powerful exception management and workflow features to automate the identification and resolution of potential issues, both internally and in collaboration with retailers and other trading partners.

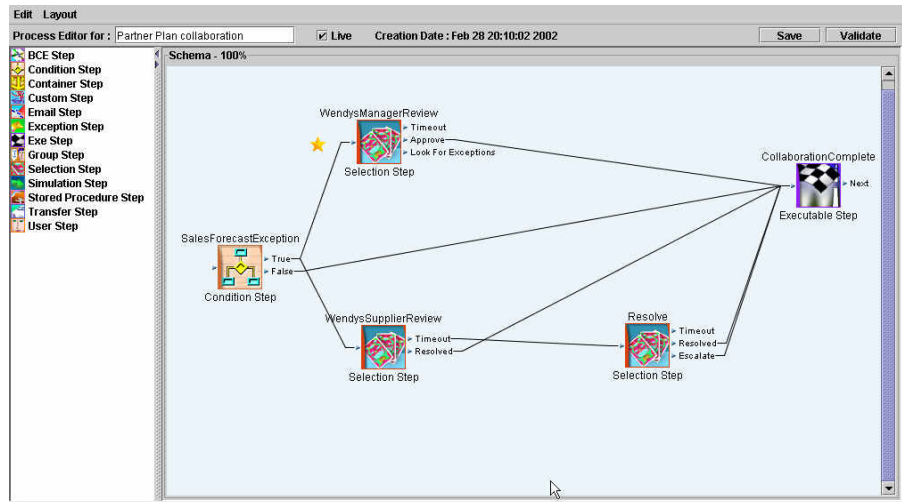
#### Exception Management for Automation

Demantra employs a management-by-exception philosophy, enabling vendors to automate most VMI processes while automatically triggering alerts and automated resolution workflows to anticipate and correct problems before they create customer service issues. Exception conditions are fully configurable by the user.

For example, automated exception reports might be sent to a planning analyst, indicating anomalies in the forecast based on business rules (for example, in comparison with prior year's demand). The analyst can view the data in a graphical and spreadsheet view, verify the anomaly, and make an adjustment if appropriate. The analyst could also use the workflow engine to send the data to colleagues, to get their input before making the required adjustments to the forecast.

## Flexible Workflow

The Demantra Demand-Driven VMI solution uses Demantra Demand Management’s robust XML-based workflow engine that provides event, content, and role-based workflow modeling using an easy-to-use Workflow Manager. The workflow engine automates and regulates the flow of information to the different stakeholders in the VMI process. Figure 10 below is an example of a workflow configuration using the Workflow Manager.



**Figure 10. Custom workflows can be designed using the Workflow Manager.**

The business rules regarding what gets approved and who makes approvals are completely configurable by the user. Workflows can be defined so that multiple user notifications are generated when forecasts are approved, or if they remain unapproved. This might be driven by timeouts or other rules-based event triggers. Additionally, the workflow engine can create new tasks from these triggers, send e-mail notifications, or even generate external system integration calls.

## Monitor Key Performance Indicators

Demantra Demand-Driven VMI offers powerful features for configuring and monitoring the KPIs of VMI program performance, such as forecast accuracy, service level, inventory turns, stock-outs, and days of supply. Personalized dashboards provide an at-a-glance summary report and exception alerts, while detailed worksheets offer full query and reporting capabilities.

## Personalized VMI Dashboard

The Collaborator Workbench function allows users to manage and monitor VMI performance through a personalized “VMI Dashboard.” The dashboard offers a single-screen interface for efficiently driving business, so users don’t need to comb through multiple reports. This dashboard presents up-to-date KPIs, and offers users an interface to manage alerts and workflow tasks and to access key reports.

Alerts can be automatically generated when, for example, a KPI falls outside a user-defined performance range.

Dashboard content can be tailored to different roles and individual preferences. Custom vendor- and retailer-specific KPIs can be created easily using the graphical-interface Business Modeler tool. KPIs can be viewed at any level of granularity, such as for a DC, an entire account, an SKU, or an entire product line. Figure 11 below shows a sample VMI Dashboard.

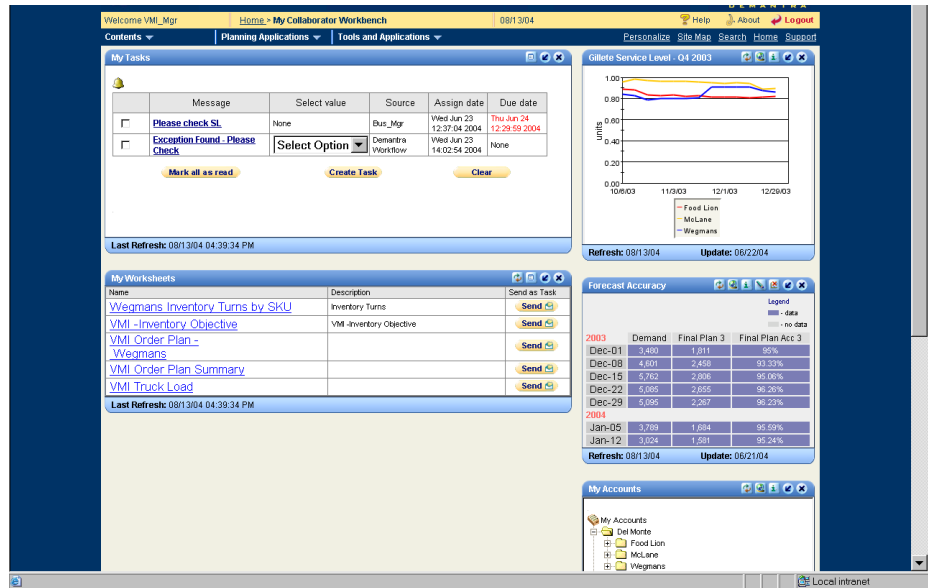


Figure 11. The VMI Dashboard shows summary KPIs, tasks and alerts, and key worksheets.

### Integrated Query and Reporting

Built on a ROLAP foundation, the Demantra Demand-Driven VMI solution offers flexible and powerful query and reporting capabilities. During the implementation process, a group of standardized reports, or worksheets, can be defined for different roles and users in the VMI process. After implementation, users can easily create new worksheets in a matter of minutes and save them for future use. The solution’s multidimensional capabilities support a flexible data hierarchy. This allows different users to slice and dice information at any level of aggregation and to tailor worksheets to individual user roles and needs. Color-coded visual alerts inform the user of exception conditions, based on user-defined business rules. For example, if the service level drops below 70 percent, then display the alerts in red, as illustrated in Figure 12 below.

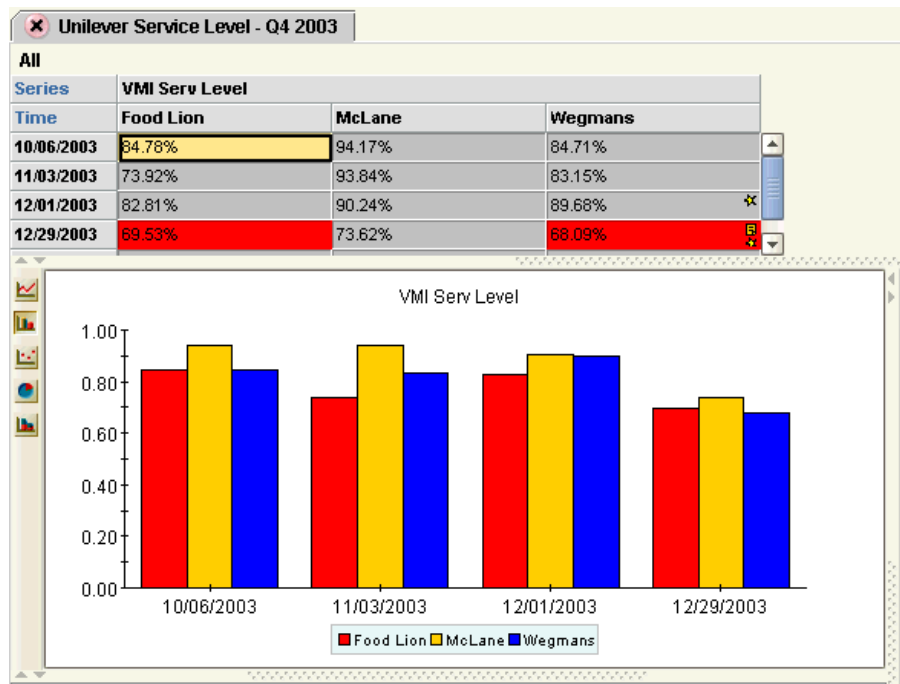


Figure 12. Detailed worksheet shows KPIs, with color-coded alerts that highlight exception conditions.

### A VERY DIFFERENT APPROACH TO VMI

As previously noted, Demantra Demand-Driven VMI takes a very different approach to VMI from many transaction-oriented systems. Rather than simply shifting the ordering process from customer to vendor, the solution allows vendors to accurately predict and monitor demand, in order to anticipate and correct problems before they create customer service issues. In addition, the Demantra Demand-Driven VMI solution offers the flexibility and scalability to grow and evolve over time and “future-proof” your software investment. Following is a summary of the key differentiators of the solution.

**Key Differentiators of the Demantra Demand-Driven VMI solution include:**

- Gives vendors a comprehensive understanding of demand
- Accommodates evolving vendor and retailer requirements
- Automates processes for efficiency
- Scales your VMI solution across retailers
- Advances VMI to the retail shelf
- Easily integrates with enterprise systems

### Gives Your Vendors a Comprehensive Understanding of Demand

VMI success depends on arming vendors with a comprehensive understanding of future demand. And for consumer goods manufacturers, that means the ability to accurately forecast demand for promotions, new products, and changing product assortments. Demantra Demand-Driven VMI’s extensive demand planning and promotion planning capabilities provide a critical foundation for manufacturers to proactively plan for demand, rather than react to it.

### Accommodates Evolving Vendor and Retailer Requirements

Ask ten vendors to define VMI and you will get ten different answers. Ask their retail customers, and you’ll get even more opinions. And VMI requirements change over time, as retailers demand more of their vendors, and vendors look to collaborate more closely to improve service levels and operating efficiencies. Only



Demantra Demand-Driven VMI offers the configurability and flexibility to handle the unique needs of your business and those of your customers, today and as they evolve. Key to the solution's flexibility are Demantra Demand Management's graphical configuration tools such as Business Modeler, User Workbench, and Workflow Manager that allow non-IT users to create business processes, data elements and hierarchies, exception conditions, and workflows—without any custom coding.

### **Automates Processes for Efficiency**

Taking over the ordering process from your retailers puts you in control, but it also creates extra work. The only way to efficiently and effectively take on this extra burden is by automating the process. Demantra Demand Management's automated forecasting, order planning, exception management, and workflow capabilities are all geared toward taking large sets of data, analyzing them, developing effective plans based on business rules, and then presenting this information for review to users with an easy-to-understand interface. And the solution's powerful exception management and workflow capabilities allow most VMI processes to happen automatically, while triggering exception alerts and resolution workflows to anticipate inventory issues before they become problems.

### **Scales Your VMI Solution Across Retailers**

Vendors are looking to scale up VMI programs, both in terms of number of retailers supported and the amount of data managed, as POS data becomes more available. Demantra Demand-Driven VMI's J2EE-compliant n-tier architecture scales up to support large numbers of users across global enterprises. By using process automation capabilities, you can handle large numbers of retailers and large amounts of data without huge VMI staffing requirements. And to take full advantage of POS data, distributed processing architecture provides the power to analyze large data sets with minimal hardware costs.

### **Advances VMI to the Retail Shelf**

As manufacturers increasingly look to get closer to the end consumer and become demand-driven enterprises, many are pushing the reach of VMI to the retail store shelf. Demantra Demand-Driven VMI uniquely enables the required processes, whether you are practicing shelf-level VMI today, or contemplating it in the future. Relevant features include the ability to generate store-level forecasts using POS data and the ability to integrate with space-management software to create replenishment orders under retail space constraints. And for the ultimate in shelf-level VMI, the solution enables manufactures to tailor product assortments and facings to individual stores and time of year for maximum sales and profits.

### **Easily Integrates with Enterprise Systems**

VMI systems must integrate seamlessly with supply chain execution systems, order management systems, and ERP systems. Demantra Demand-Driven VMI's open

interfaces and conformance to industry standards, such as J2EE, SOAP, and XML, ensure easy integration with your existing and future enterprise systems. The Enterprise Integrator ETL tool enables automated data integration procedures to accommodate most leading enterprise systems and data formats. In addition, flexible data hierarchies facilitate integration by accommodating your existing sales, marketing, finance, and operations data structures.

## **CONCLUSION**

The Demantra Demand-Driven VMI solution is a key technology enabler for powering successful VMI programs, offering the potential for dramatic improvements in supply chain and financial performance. Quantitative performance improvements that customers using the solution have achieved include:

- Increase in forecast accuracy of 10 to 40 percent
- Increase in service levels of 10 to 30 percent
- Reduction in inventory levels of 15 to 40 percent
- Reduction in warehouse and transportation costs of 5 to 10 percent
- Decrease in product returns of 5 to 20 percent

Additional potential benefits include:

- Improved on-shelf availability
- Increased sales
- More efficient production scheduling
- Improved responsiveness to customer needs and changing market conditions
- Enhanced relationships with strategic trading partners

Together these benefits add up to improved profitability and competitive position. And with retailer demands increasing, and manufacturers seeking to get closer to their end consumers, Oracle's Demantra Demand-Driven VMI solution provides a platform for even closer collaboration in the future.



A Demand-Driven Approach to Vendor Managed Inventory  
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