

Demand Planning Performance Blueprint



Introduction

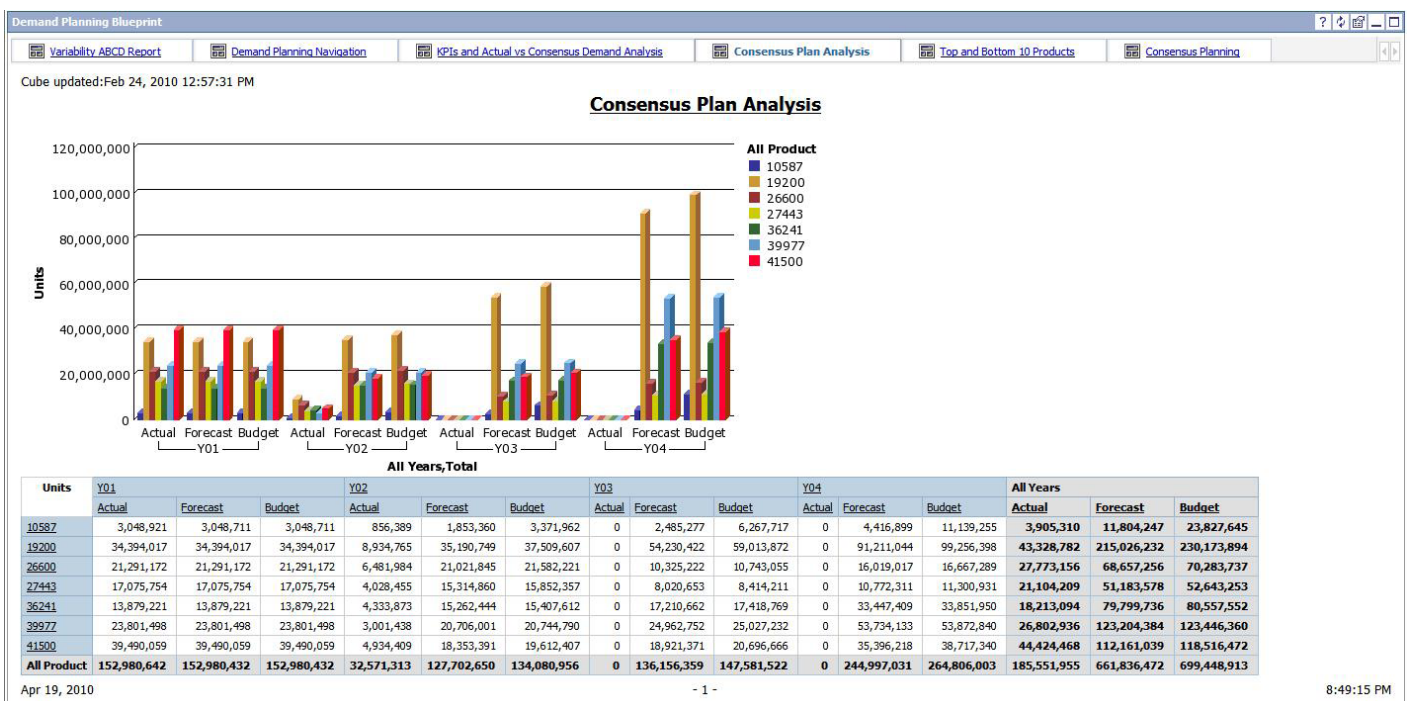
The demand plan is the beginning of any effective supply chain. Manufacturers are constantly under pressure to improve their customer satisfaction while reducing operational costs. In an environment where businesses compete aggressively to retain and gain customers, it becomes even more important for them to align their operations with customer demand. Businesses can become demand driven by establishing demand planning practices and subsequently using the demand plan to manage their operations.

The process of demand planning involves a number of different activities from data collection and statistical analysis to building consensus with customers, sales, operations and finance. Analysis of historical sales data, applying business experience and statistical time series techniques are the basis for generating baseline forecasts. New product introductions and promotional plans

are incorporated to affect unit uplift to the baseline demand plan. Then, the overall unit demand plan is converted to a revenue plan using average and promotional selling price assumptions.

Many businesses manage their demand planning inefficiently using siloed data and relying on spreadsheets that are not integrated with operational, corporate and financial goals. This often leads to inconsistent plans, multiple errors, excess inventory, reduced customer service levels and the inability to react quickly to shifting customer requirements. Increasingly, these organizations are seeking a robust demand planning model that various groups can use to address demand issues that affect overall corporate goals.

The *IBM Cognos® Demand Planning Performance Blueprint* is that model.



An effective demand planning process

Demand planning is a subset of sales and operations planning (S&OP). It enables decision-makers to reach consensus on a single operating plan that drives increased market share and balances critical resources to meet performance goals. The goal of S&OP is to link tightly sales, marketing, supply chain, manufacturing and finance. An effective S&OP process starts with an accurate consensus demand plan.

The demand planning process consists of the following steps:

1. Collect input data:
 - o Actual shipments and demand
 - o Bookings
 - o Prior forecast versions
 - o Promotions
 - o Unfulfilled demand
2. Calculate forward demand using statistical forecasting and predictive modeling methodologies.
3. Review the statistical baseline forecast and refine it based on the planner's intimate knowledge of the business, products and customers.
4. Evaluate the multiple demand plan versions from the various constituents (sales, product demand planners, finance, operations) to drive to a consensus plan.
5. Link the consensus plan as an input into the integrated Sales and Operations Plan.
6. Release the consensus plan to downstream processes such as master planning, Materials Requirements Planning, purchasing, supply chain and finance.

The challenges of demand planning

The challenges with demand planning are attributable to several factors, such as reliance on spreadsheets, manual processes, multiple source systems and incomplete information. These challenges include:

- Multiple data sources (ERP, CRM, POS, PLM, trade promotions systems and spreadsheets)
- Incomplete data or no visibility of:
 - New product introductions
 - New target markets
 - Rapidly changing market conditions
- Undocumented assumptions
- Multiple informal versions of a demand plan, which creates disconnected departmental decision making
- Limited what-if capabilities for multiple scenarios
- No links between the volume plan and the Sales and Operations Plan, finance plans and strategic goals.

Manufacturers with inefficient demand planning processes are more likely to incur adverse business results, such as:

- Increased inventory stocking levels resulting in reduced working capital
- Reduced customer service levels and unnecessary discounting
- Higher production costs caused by expediting and out of stock situations
- Operating in an inefficient reaction mode

The *Demand Planning Blueprint* can improve demand planning processes so that your company greatly reduces the problems of ineffective demand planning.

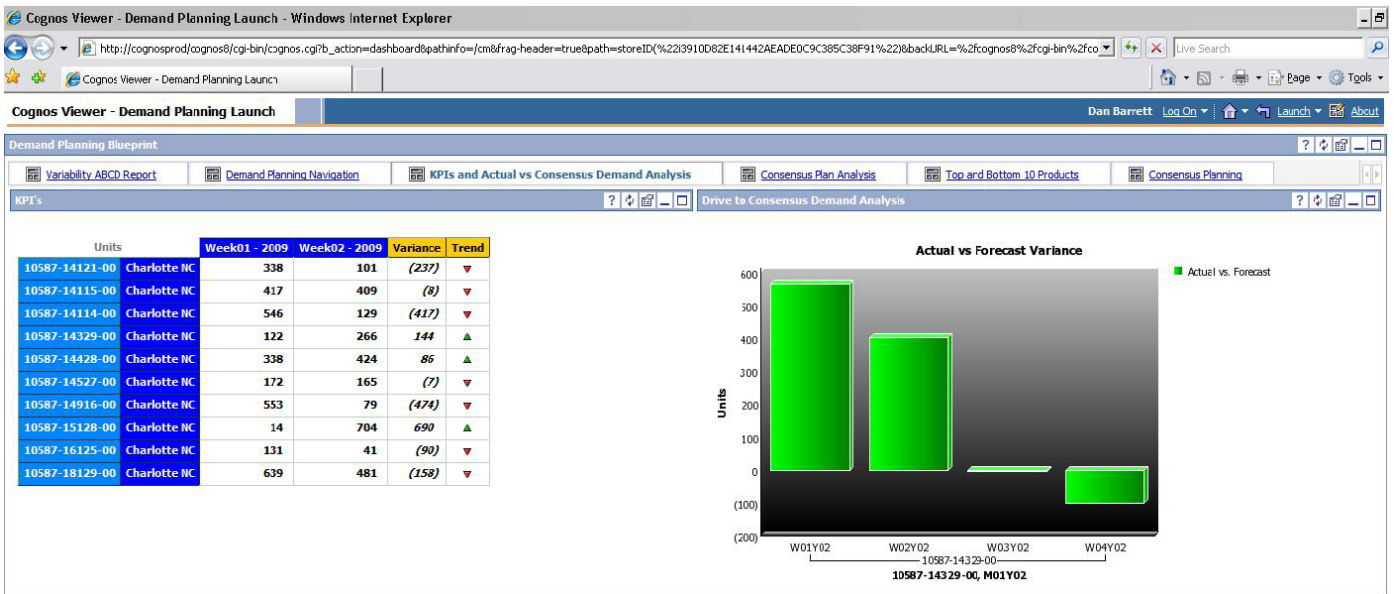
Introducing the Demand Planning Blueprint

IBM Cognos Performance Blueprints are predefined data, process and policy models that provide best-practice approaches to performance management. Provided at no additional cost to IBM customers, Performance Blueprints feature pre-configured data models and more to facilitate rapid time-to-value.

Designed in collaboration with industry leaders and some of IBM's most successful customers, each Blueprint is a Web-based process that uses solutions from the IBM Cognos performance management platform. The developers of Performance Blueprints design these models and processes so that most companies can use them with little or no additional coding or IT intervention. Companies can also configure Performance Blueprints to support alternative model requirements and to accommodate planning in any environment.

Powered by IBM Cognos TM1 and IBM Cognos 8 Business Intelligence, the *Demand Planning Blueprint* drives best practices in demand planning to the stakeholders in your organization with the appropriate level of detail. These stakeholders, which can include sales teams, marketing teams, demand planners, product and category managers, manufacturers' representatives and customers, can then plan anticipated demand for a product, customer, region or selected channel down to a weekly level.

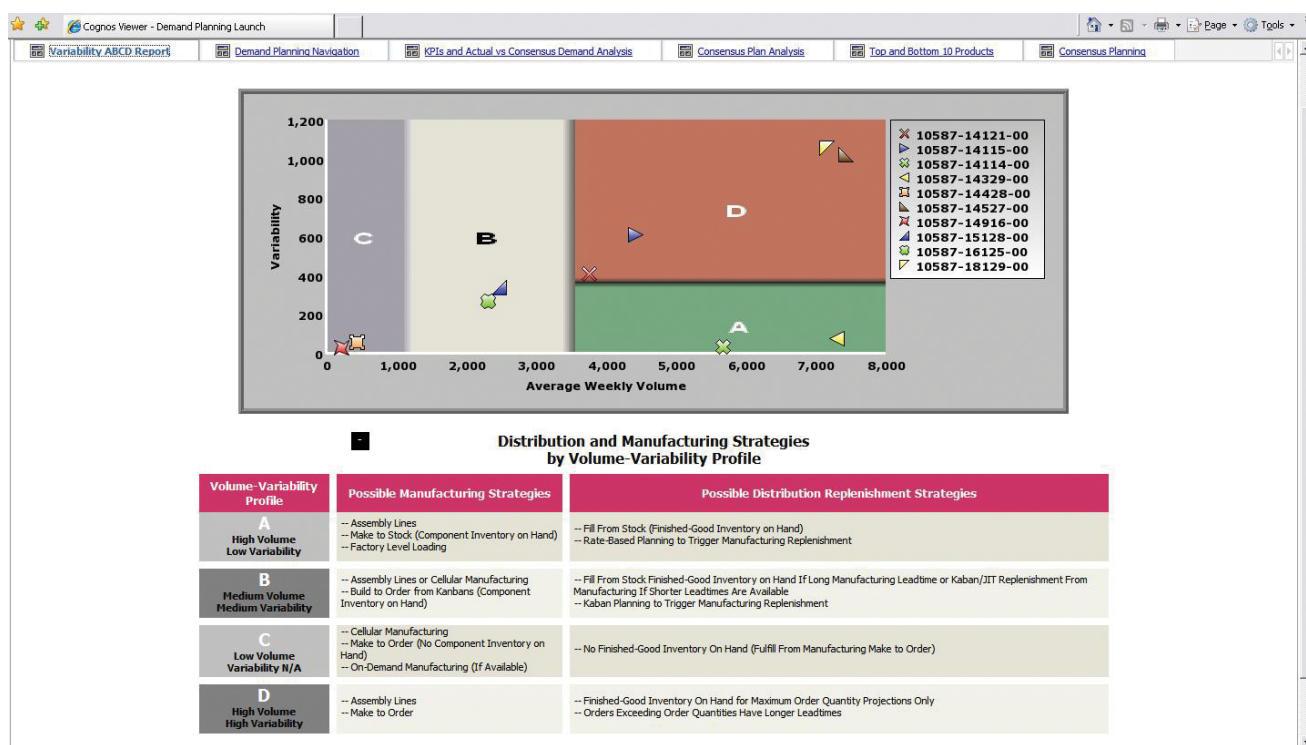
With the *Demand Planning Blueprint*, planners can view a current-year baseline forecast together with the prior year's forecast and year-to-date actuals by item level with summaries by product category or family. The *Blueprint* can dynamically re-forecast demand for multiple scenarios and you can immediately view the effect of the unit demand plans on inventory levels and revenue targets.



This scenario planning enables customer-driven demand planning because it facilitates closer collaboration and forecasts based on stakeholders' unique knowledge of the market. Corporate planners collaborate in the demand plan by providing overall pricing and other base-level assumptions to drive the process. Updates are automatically tracked by workflow, and after all planners have reached consensus as indicated by that workflow, the demand plan is then ready to be linked to the supply plans. Equally important to creating and coming to consensus on the demand plan is the regular plan review. The *Blueprint* provides dashboards and analytics that show changing market conditions, demand variability and plan variance for that review and analysis.

The Blueprint provides the tools and functionality to help you:

- Set product or category level unit volume and revenue performance targets.
- Introduce and plan volumes for new products.
- Perform bottom-up planning, including unit planning by SKU by customer, location, and week.
- Perform SKU level planning by attributes (for example, color and size).
- View and analyze the plan by both units and revenue.
- Reconcile top-down and bottom-up plans.
- Create a single consensus demand plan using a multi-dimensional view of the various versions of the plan.
- Plan and analyze gross margin and the underlying causes of profit or loss.
- Monitor performance (plan versus actual).
- Perform variance analysis (price, volume and margin).
- Calculates standard deviation to determine the confidence in the forecast.
- Perform ABCD analysis to help determine the supply strategy.



How the Blueprint works

Demand planning is always a balancing act. Planning is needed months in advance to procure stock or raw materials. At the same time, customer preferences are constantly changing. Companies in the industrial sector need the insight to predict and accurately plan for demand, identify brand-level performance targets and consolidate disparate views and drive these views to consensus demand plan. Companies also need the flexibility to plan for new production introductions and determine the effect of promotions on inventory.

Demand planners predict the future customer demand for a set of items. The demand pattern of a particular item can be considered as a time series of separate values. Demand planning usually covers many time periods, typically 12-24 months. So, an important aspect of demand planning is to define planning structures for products, customers and time. These structures represent input to the forecasting process, historic transactional data and computed data like a statistical forecast or a forecast accuracy metric.

Using this *Blueprint*, companies can complete unit level demand planning, determine the financial impact and develop targets at the region, customer or category level to use for top-down and bottom-up planning.

They can view past performance and model scenarios to understand in real time the impact of business decisions. They can create bottom-up item-level plans for customer, location and week and can even create plans for SKUs with attributes. They can also identify bottom and top movers and adjust plans accordingly.

The *Blueprint* also provides planners with alerts and order point negative inventory position. Reports include consensus demand, forecast accuracy exceptions, shortages. Trend charts compare versions of the forecast and actuals and variance analysis is available for the top 10 largest variances. Dashboards are available for each type of user, such as sales, demand planners and finance.

Recapitulation of Variances

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	Qtr03 - 2008		Qtr04 - 2008		Qtr01 - 2009	
	Actual vs. Forecast	Actual vs. Budget	Actual vs. Forecast	Actual vs. Budget	Actual vs. Forecast	Actual vs. Budget
Gain due to increased sales prices	\$4,687,608	\$4,687,608	\$4,716,056	\$4,716,056	\$5,324,872	\$5,324,872
Loss due to increased cost	(\$1,970,094)	(\$1,970,094)	(\$1,955,814)	(\$1,955,814)	(\$2,208,276)	(\$2,208,276)
Loss due to shift in sales mix	(2,979,533)	(2,882,904)	(2,971,906)	(2,879,238)	(3,367,095)	(3,259,310)
Loss due to decrease in units sold	(197,313)	(25,074)	(256,177)	(27,929)	(224,445)	(12,717)
Total	(\$5,146,940)	(\$4,878,072)	(\$5,183,897)	(\$4,862,981)	(\$5,799,816)	(\$5,480,303)
Less	4,687,608	4,687,608	4,716,056	4,716,056	5,324,872	5,324,872
Net decrease in gross profit	(\$459,332)	(\$190,464)	(\$467,841)	(\$146,925)	(\$474,944)	(\$155,431)

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Blueprint benefits

The *Demand Planning Blueprint* has a number of benefits:

- It provides better visibility of demand, which helps drive down inventory, operating and carrying costs and helps create consensus between sales and marketing, demand planners and supply chain planners.
- Because forecasts are more accurate, customer service levels are higher while production costs are lower because there is less production expediting, lower inventory levels and fewer out of stock situations.
- Because it offers sophisticated analysis, it can help improve the use of human and capital resources and promote better understanding of markets and customers.

Conclusion

Demand planning is the beginning of any effective supply chain and can involve a number of different activities. Some of these activities include data collection, statistical analysis, seeking feedback from customers and sales representatives and consensus building for different organizations. Many businesses manage their demand planning in departmental silos, with hundreds or thousands of spreadsheets. The results of such planning can include different goals, inconsistent plans, multiple errors and not being able to react quickly to shifting customer demand.

Powered by IBM Cognos Business Intelligence and TM1 software, the *Demand Planning Blueprint* deploys summary-level demand planning to the appropriate level in your organization (salespeople, sales managers, demand planners, marketing planners, manufacturers' representatives and product managers) and potentially to customers so they can plan anticipated demand for a region or selected channel. Using this *Blueprint*, companies can complete demand and unit planning and develop top-down targets at the region or channel level to use for top-down and bottom-up planning. They can view past performance and model scenarios to understand in real time the impact of business decisions.

About the IBM Cognos Innovation Center For Performance Management

The IBM Cognos Innovation Center for Performance Management is dedicated to the understanding, adoption, and implementation of next-generation planning and performance management practices. It is a consortium of industry leaders, practitioners, thought leaders, forward-looking executives, and technology experts experienced in, and committed to, the advancement and successful application of technology-enabled performance management best practices. The Innovation Center seeks to assist organizations in optimizing the alignment of their plans, processes, and resources with corporate goals and strategies.

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April 2010
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