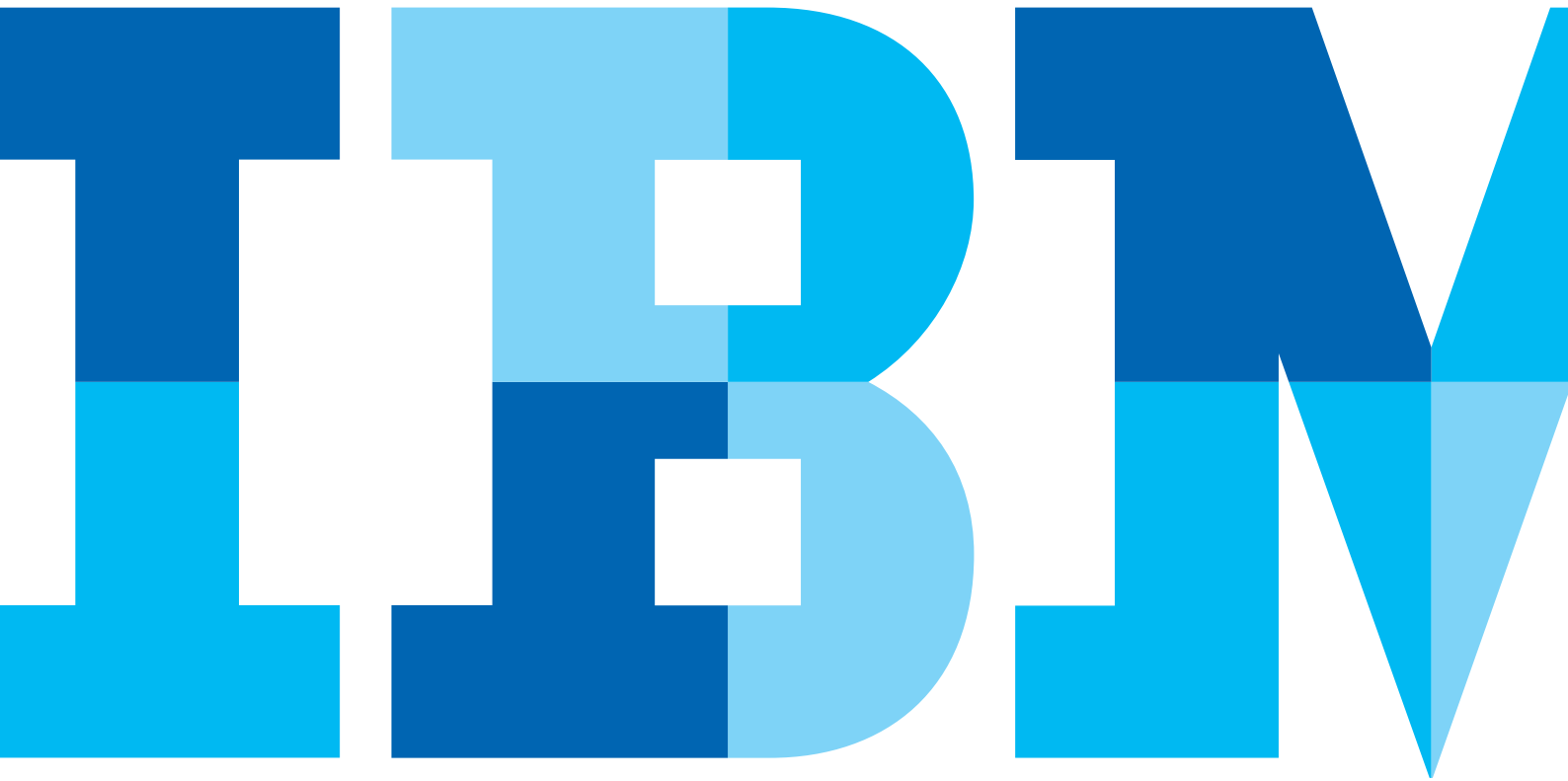


Demand Planning Performance Blueprint



This application brief demonstrates the *IBM Cognos Demand Planning Performance Blueprint*, which consists of best practices for managing product and customer demand planning using IBM Cognos® TM1 and IBM Cognos 8 BI. Implementing this *Blueprint* enables users to see the possible impact of product decisions at both customer and product levels.

Overview

The Demand Planning Blueprint was developed as one TM1 server, so that customer managers can plan at the individual customer and product SKU level and product demand planners can plan total demand at the product SKU level using data from the customer plan. The model also allows for the inclusion of a statistical and financial forecast. These forecast versions are brought together to drive a consensus demand plan; the results of which could be used to drive the demand side of a Sales and Operations Planning (S&OP) process.

For example, a customer manager can plan very dimensionally rich customer demand, with product unit volume input by customer ship-to location and distribution ship-from location that will immediately determine gross revenue and cost of sales. There is a placeholder for any customer supplied forecasts from which customer managers can use to affect their own forecasts. The model provides the flexibility to allow the customer planner to determine the unit price charged to a customer but potentially not the unit cost. A product planner can plan total demand for each ship from location for all customers, using data from the customer plan, their own forecasts to help derive a consensus plan. They can input the average unit price and unit cost to drive total gross revenue and cost of sales. (Note that unit price and unit cost may be generated by future Blueprints).

Blueprint objectives

The *Demand Planning Blueprint* achieves the following planning objectives:

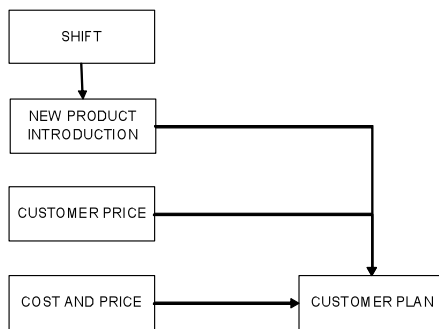
- Manage product demand by customer and product.
- Manage product demand by product.
- Derive a consensus.

Representative workflow: Customer demand planning

The customer demand planning interface (based on the Cognos TM1 Demand Planning server) is what customer managers can use as they forecast product demand for their customers. This section of the Application Brief describes the basic workflow for selecting and inputting unit volumes by customers and products.

Flowchart

This flowchart shows the components used from the Demand Planning TM1 server to create the Customer Demand Planning Contributor application. The TM1 cubes, shift and cost and price while used by the Contributor application are not part of the user view.



New Product Introduction

Customer managers can see what new products are being introduced, the planned launch date and whether this date has been brought forward or delayed. Changes to the launch date automatically adjust the original plan to the new date. They can also see if the new product replaces an existing product. Customer managers cannot enter data into this cube.

Product	Planned Introduction	Shift	New Introduction	Replaced Product
10587-18129-00				
19200-00262-04				
26600-80900-00				
27443-28210-00				
36241-04905-06				
39977-00158-00				
41500-00053-14				

Customer Price

Using the Customer Price tab, a customer manager can input unit price by product and by customer. Prices are input by year and are used to generate gross revenue in the Customer Plan cube.

Product	Price
10587-14121-00	100.69
10587-14115-00	89.94
10587-14114-00	79.25
10587-14329-00	87.09
10587-14428-00	76.68
10587-14527-00	80.13
10587-14916-00	126.16
10587-15128-00	77.92
10587-16125-00	105.36
10587-18129-00	104.29
19200-00027-06	104.02
19200-00051-04	92.92
19200-00000-15	81.87

Customer Plan

Using the Customer Plan cube, customer managers can input units by product to generate gross revenue and cost of sales. Cost of sales is based on the unit cost input by product managers in the Product Demand Planning interface.

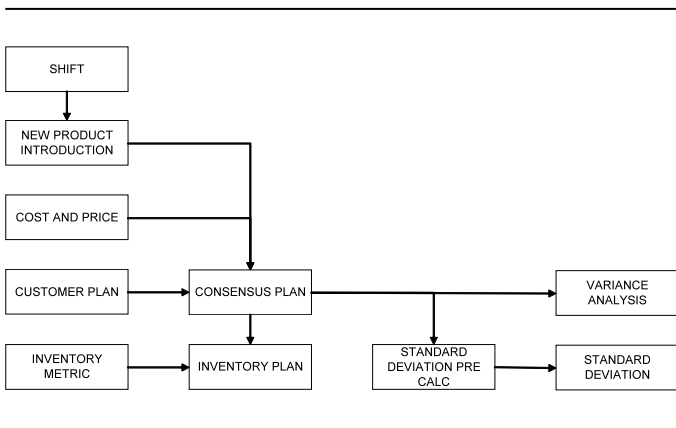
	Week01 - 2008	Week02 - 2008	Week03 - 2008	Week04 - 2008	Yr. Sum - 2008	Week05 - 2008	Week06 - 2008
Actual	Gross Revenue	159398.00	169829.00	14126.700	146991.00	551475.00	825682.00
	Cost of Sale	58495.60	44142.00	18568.00	40438.00	239934.00	32246.00
	Customer Adjustment	1582.60	1125.00	1508.00	1536.00	1819.00	1848.00
	Net Forecast	1583.00	1841.00	1461.00	1439.00	5477.00	1744.00
	Gross Revenue	22803.80	47544.18	64274.80	64914.80	758494.80	28741.00
	Cost of Sale	28647.88	18778.18	25129.88	25765.88	88784.88	31291.88
	Customer Adjustment	836.88	475.88	648.88	657.88	3143.88	884.88
	Net Forecast	648.88	431.88	849.88	648.88	2375.88	758.88
	Gross Revenue	177466.00	117722.00	157041.80	150641.80	612654.00	85828.88
	Cost of Sale	64395.88	46136.88	61252.88	67933.88	248379.88	26448.88
	Customer Adjustment	1853.68	1213.00	1628.00	1665.88	6339.88	2817.88
	Net Forecast	1738.00	1148.00	1541.00	1573.00	6999.00	1968.00

Representative workflow: Product demand planning

The Product Demand Planning interface (based on the Cognos TM1 Demand Planning server) can be used by product managers as they forecast product demand for their product groups. This section of the Application Brief describes the basic workflow for selecting and inputting unit volumes by product.

Flowchart

This flowchart shows the components used from the Demand Planning TM1 server to create the Product Demand Planning interface. The TM1 cubes, shift, customer plan and standard deviation pre calc are not included in the user view.



Inventory Metric

With this cube, product managers can input inventory metrics by month.

	Jan - 2008	Feb - 2008	Mar - 2008	Qtr1 - 2008	Apr - 2008	May - 2008	Jun - 2008	Qtr2 - 2008	Jul - 2008	Aug - 2008
Units of Supply	880.00	880.00	880.00	2640.00	880.00	880.00	880.00	2640.00	880.00	880.00
Carrying Cost	220.00	220.00	220.00	660.00	220.00	220.00	220.00	660.00	220.00	220.00

New Product Introduction

Product managers can see what new products are being introduced, the planned launch date and whether this date has been brought forward or delayed. Changes to the launch date automatically adjusts the original plan to the new date. They can also see if the new product replaces an existing product. Product managers can enter data into this cube.

Product	Planned Introduction	Shift	New Introduction	Replaced Product
10602-18129-00				
19200-00262-04				
26600-00900-00				
27443-38210-00				
36241-04905-06				
39977-00150-00				
41500-00053-14				

Cost and Price

Product managers input cost and price for each product using this cube. This generates gross revenue and cost of sales in the consensus plan cube. Unit cost from this cube is used to generate cost of sales in the Customer Plan cube.

Product	Month	Measure	Context
Product	Month	Measure	Context
	Jan - 2000	Price	10587
	Feb - 2000	Price	1011
	Mar - 2000	Price	Actual
	Apr - 2000	Price	
	May - 2000	Price	
	Jun - 2000	Price	
	Jul - 2000	Price	
10587-14121-00	102.93	42.00	102.93
10587-14115-00	96.32	39.42	96.32
10587-14114-00	80.84	37.95	80.84
10587-14329-00	100.10	38.53	100.10
10587-14428-00	75.55	36.99	75.55
10587-14527-00	79.70	39.69	79.70
10587-14916-00	116.53	36.99	116.53
10587-15120-00	83.10	39.77	83.10
10587-16125-00	98.19	36.37	98.19

Consensus Plan

Using the Consensus Plan cube, product managers input units by product, compare their forecast against the field forecast and come to a consensus forecast.

Product	Month	Measure	Context
Product	Month	Measure	Context
	Week01 - 2000	Units	10587
	Week02 - 2000	Units	10587-14121-00
	Week03 - 2000	Units	Original
	Week04 - 2000	Units	Consensus Forecast
	Week05 - 2000	Units	
	Week06 - 2000	Units	
	Week07 - 2000	Units	
Actual	3293	2,034	2,274
Consensus Forecast	375,812	244,470	308,407
Cost of Sales	152,264	102,220	117,508
Gross Margin	215,778	142,250	190,899
Units	4,043	2,627	3,301
Forecast	380,310	235,225	302,376
Cost of Sales	200,040	130,580	139,355
Gross Margin	380,870	104,627	213,021
Units	3,350	2,490	3,325
Original Plan	375,802	252,790	306,905
Cost of Sales	190,871	95,780	133,064
Gross Margin	225,011	157,010	213,841

Inventory Plan

This cube enables product managers to input internal production and outsourced production and to view ending inventory.

Inventory	Week	Context
Inventory	Week	Context
	Week01 - 2000	10587
	Week02 - 2000	10587
	Week03 - 2000	Actual
	Week04 - 2000	Original
	Week05 - 2000	
	Week06 - 2000	
	Week07 - 2000	
Beginning Inventory	264,553	272,404
Open Purchase Receipts	0	0
Planned Purchase Receipts	0	0
Total Purchase Receipts	0	0
Scheduled Production Receipts	74,071	45,062
Forecasted Production Receipts	0	0
Total Production Receipts	74,071	45,062
Total Supply	74,071	45,062
Consensus Forecast	68,147	63,951
Ending Inventory	270,481	258,196
Targeted Ending Inventory	264,568	252,409
Calculated Weeks of Supply	906.33	888.23
Calculated Turnover	0.23	0.24
Turnover Target	0	0

Standard Deviation

This cube shows product manager the volatility of the actual demand for the products they are forecasting.

Product	Standard Deviation	Mean	Cv
Product	Standard Deviation	Mean	Cv
10587-14121-00	400	3761	0.11
10587-14329-00	1045	7070	0.15
10587-14428-00	930	7455	0.12
10587-14527-00	1022	7446	0.14
10587-14916-00	1004	7446	0.13
10587-15120-00	1015	7450	0.14
10587-16125-00	838	7253	0.12
10587-18129-00	1054	7105	0.15

Variance Analysis

This cube shows product managers various variances between actual, forecast and original plan.

	Week01 - 2009	Week02 - 2009	Week03 - 2009	Week04 - 2009	Sum - 2009	Week01 - 2010	Week02 - 2010	Week03 - 2010
Sales Price Variance	5,395,111	5,743,398	6,313,047	5,977,760	23,989,329	5,798,680	5,504,796	5,794,217
Sales Volume Variance	(5,545,000)	(6,362,700)	(6,679,822)	(6,519,280)	(26,207,440)	(6,294,830)	(5,379,200)	(5,295,170)
Cost Price Variance	(1,954,200)	(2,461,170)	(2,626,122)	(2,243,562)	(8,185,240)	(2,479,890)	(2,599,710)	(2,440,160)
Cost Volume Variance	2,732,810	2,622,937	2,730,382	2,793,014	10,679,013	2,482,636	2,409,386	2,640,890
Net Volume Variance	(3,012,200)	(3,639,800)	(3,889,470)	(3,726,266)	(15,128,427)	(3,812,200)	(3,111,200)	(3,654,280)
Sales Mix Variance	(3,571,500)	(3,425,000)	(3,689,470)	(3,305,612)	(14,291,562)	(3,461,200)	(3,325,270)	(3,453,200)
Net Volume Variance Check	(1,811,500)	(1,875,800)	(1,889,470)	(1,786,344)	(7,163,427)	(1,633,500)	(1,711,900)	(1,654,280)
Final Sales Volume Variance	(241,160)	(254,180)	(200,220)	(200,654)	(896,464)	(172,730)	(185,260)	(200,700)
Reconciliation of Variances								
Change Due to Sales Prices	5,395,111	5,743,398	6,313,047	5,977,760	23,989,329	5,798,680	5,504,796	5,794,217
Change Due to Cost	(2,594,200)	(2,461,170)	(2,626,122)	(2,243,562)	(8,185,240)	(2,479,890)	(2,599,710)	(2,440,160)
Change Due to Product Mix	(1,571,660)	(1,445,680)	(1,669,240)	(1,664,112)	(6,249,862)	(1,461,200)	(1,525,270)	(1,443,580)
Change Due to Units Sold	(241,160)	(254,180)	(200,220)	(200,654)	(896,464)	(172,730)	(185,260)	(200,700)
Change Due to Values	0	0	0	0	0	0	0	0
Net Change in Gross Margin	(306,200)	(362,750)	(307,540)	(302,840)	(1,409,340)	(354,910)	(314,230)	(320,270)
Net Change in Gross Margin Check	(306,200)	(362,750)	(307,540)	(302,840)	(1,409,340)	(354,910)	(314,230)	(320,270)

Business Intelligence Model

The Demand Planning Dashboard presents critical information to executives at a glance so they can quickly drive and devise resolutions for improving demand planning efficiency. The Demand Planning Dashboard was designed using a tabular approach to represent, highlight and group respective areas of analysis for easy navigation and visibility. These tabs present pertinent trending statistics and data to be used for better management of the demand planning process. The Dashboard also contains a tab which nests the Consumer Plan cube to provide the functionality for viewing/modifying the plan and forecast without having to leave the Dashboard. In this section, we have included screen captures and descriptions of a few of the invaluable reports and analysis that you can use and modify to fit your objectives and goals.

The Demand Planning Dashboard by default opens to the Variability ABCD Report. The Variability ABCD Report uses dots to indicate how a particular SKU falls in terms of its combined volume and variability.



The Demand Planning Navigation tab provides a list of key reports, highlighted in red, along with search capabilities. When a report is selected, the Demand Planning Navigation tab displays the results in the nested Report Viewer Pane.



The Top and Bottom 10 show the highest and lowest unit volumes and drive a review based on negative or positive trends over time.



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Produced in Canada
April 2010
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