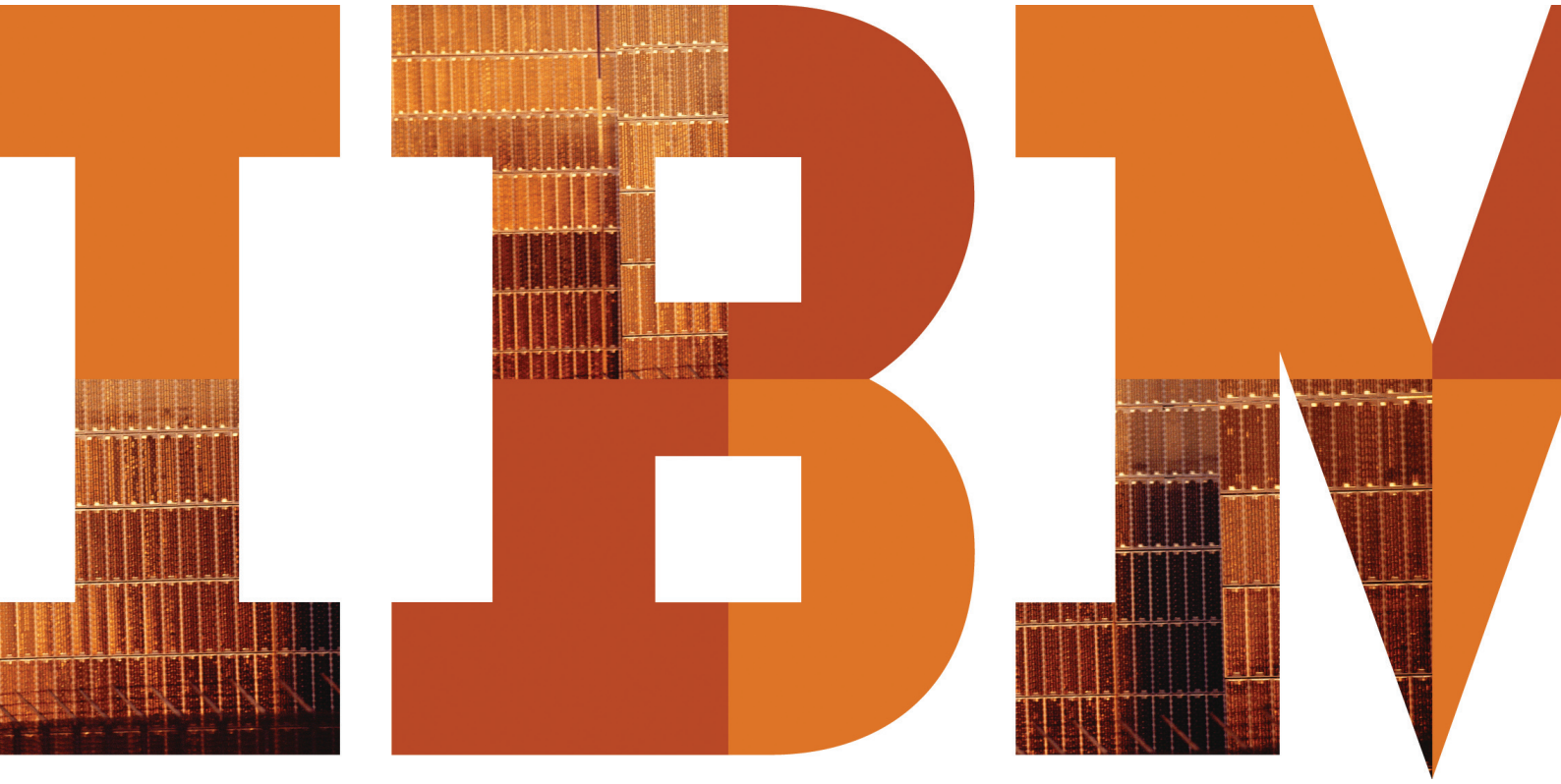
Just in time: How three companies are anticipating demand with adaptive rolling forecasts

IBM Cognos Business Analytics



Even if you're on the right track, you'll get run over if you just sit there."

—Will Rogers, humorist and social commentator

What was once a fairly stable world of business has transformed into a threatening jungle that has no place for the complacent or feeble-minded enterprise. This wild environment requires you to maneuver an obstacle course on a nearly daily basis: large ranks of unemployed, still wobbling financial markets, fickle consumers and fierce competition, just to make sure you never turn out the light in the office.

And yet against all of this uncertainty, many enterprises will spend months—up to six— developing what they perceive to be the most replete, well-honed, spanking-new plans and budgets in their industries, only to find global conditions poking holes in them by the first day of the new reporting year.

Meanwhile, other companies have been shifting rather quickly some of their planning energies into rolling forecasting.

Not abandoning the traditional budget/plan, because they are the general guidelines for the coming year, these forward-thinking companies are emphasizing dynamic response to the market, with continuous decision making. They are practicing some known but less common principles in planning and rolling forecasting such as:

- Paring analysis and forecasts down to key drivers
- Forecasting out on a continuous basis, well beyond the reporting year
- Running what-if analysis and developing contingency plans in order to reduce risk and anticipate and shape better business outcomes
- Setting flexible forecasting horizons and frequencies to meet the needs of the business

Put another way: it's not just JIT for manufacturing, but JIT for forecasting and plan revisions. Armed as such, these companies can adjust their business month-by-month, shifting resources as quickly as possible to anticipate demands.

In this paper, we'll look at how three enterprises practice rolling forecasting, deploying the process at various levels and in various departments to guide them through market volatility.

Del Monte Foods

Del Monte Foods, one of the largest and most well-known producers, distributors, and marketers of premium quality, branded food and pet products for the U.S. retail market, with a portfolio of brands including Del Monte, S&W, Contadina, College Inn, Meow Mix, Kibbles 'n Bits, 9Lives, Milk-Bone, Pup-Peroni, Meaty Bone, Snausages and Pounce, needed a more complete picture for its consensus volume forecasts.

Providing the input had been challenging for the Operations Finance team who had been using Microsoft® Access and Excel. For each plan and forecast, the team would input data manually, tackle reconciliations and then generate reports. This labor-intensive monthly process prevented staff from focusing fully on the performance of the business unit.

Del Monte recently completed Phase I implementation of a driver-based, 18-month rolling forecasting platform. As part of the scope for this first phase, the Operations Finance team focused its attention on the key drivers of warehousing and transportation costs. With IBM Cognos® TM1® software and implementation support from IBM Business Partner JCB Partners, Operations Finance has gained deeper insight into the costs of warehousing and transportation, especially with the ability to perform analysis and what-if scenarios to optimize

resources and share financial information throughout the organization. This new perspective leads to improved corporate performance by assisting the company in understanding cash flow and responding dynamically to external influences such as customer activity and commodity price fluctuations.

As for other best practices in Del Monte's Planning process, the company will use workflow to streamline the forecasting process and improve collaboration. Functional controllers develop the financial forecasts and report variances to plan and prior year and other relevant financial data.

"We will use workflow to tie it all together," said Juan Carlos Bertini, Vice President, Operations Finance, Del Monte Foods, "and we will give our analysts input screens to enter monthly forecasts for their respective drivers."

Drivers in transportation and warehousing

In order to understand financial performance, Del Monte looks at transportation costs by lane and at operating costs by distribution centers.

In the transportation plan model, key drivers examined today include the monthly diesel fuel prices, line haul rates for each transportation lane, inflation of contracted line haul rates and the transportation mode (for example, railcar or truck). With focus on these business dimensions and the ability to rapidly pose what-ifs for different scenarios in Cognos TM1, analysts can now evaluate the effectiveness of different lane and mode mixes and determine the most cost effective combinations. Importantly, with this tool, analysts can dynamically estimate the future impact of changes in cost drivers at a very granular level of detail.

In addition, analysts manipulate the Del Monte distribution network cost drivers to optimize resources and processes—capacity utilization, human resource costs (labor, benefits, overtime), case picking, loading/unloading efficiency—and on a rolling basis, they add the projected activity/spend to the volume forecasts. With robust dimensional modeling for complex data at their fingertips, analysts now have the ability to monitor costs tightly by comparing the actual and forecasted performance to historical results by each distribution center.

Moving to Phase II

Ever with an eye on the "enterprise" picture, Bertini and his team are adding procurement, manufacturing and co-manufacturing to the planning and rolling forecasting process for operations. With data from bills of materials extracted from the ERP system, the procurement team can dynamically analyze ingredient and packaging costs. To aid purchases of commodity items, analysts project the forward curve (futures) of critical commodities such as corn, soybeans or natural gas. *What-if* analysis will help planners perform risk management by understanding the impact of changes in commodity prices at a very granular product/item level.

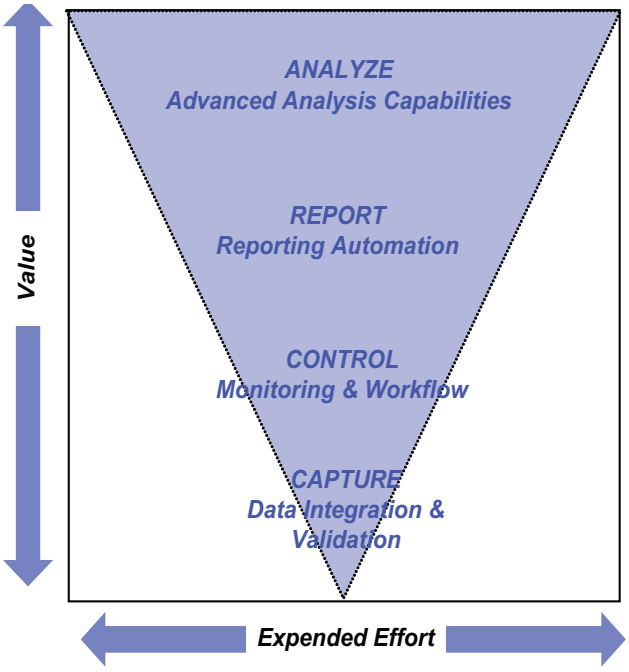
In this second phase, Manufacturing will also have the ability to use this platform to perform driver-based forecasts dynamically. Plant controllers will examine and test scenarios for labor and overhead costs such as utilities and maintenance—another function of operations, whose input could help optimize company resources.

Lessons and benefits

Bertini recommended above all that businesses not attempt to execute a perfect forecast. "The forecasting process takes too long because companies try to 'get it right'. We need to learn to manage to a greater degree of uncertainty and variability," he said. "Instead, run short forecasting bursts, which will increase management visibility to trends and allow for quick course correction and scenario planning," he added.

The opportunity in a period of volatility is quickly reacting to change and adjusting your plans dynamically, said Bertini. "A company needs to be poised for change: you can readily respond by adjusting production volumes and inventories—or activating a host of other contingency plans."

As part of this agility vision, Del Monte's Operations Finance team is now connected to the enterprise volume forecasting processes. The team receives volume data and can provide cost feedback quickly, every month, using a driver-based platform that provides workflow functionality and integrated reporting.



Operations at Del Monte Foods has increased analysis work by four-fold.

Formerly, the planning teams poured their energies into gathering data: about 60 percent of their efforts in forecasting involved data mining; the team devoted 30 percent of their time to building and cleaning up reports and 10 percent to rushing through analysis. "Today, time for analysis has increased four-fold," said Bertini. "We spend less time obtaining the data and manually assembling reports and this is just the beginning. Improved collaboration (thanks to workflow), dynamic scenario analysis and dash-boarding capabilities will provide further benefits and ultimately represent an important competitive advantage for Del Monte."

Bertini was quick to add that the solution has helped morale. "We have happier people," he said. "Employees spend less time performing data mining, they model drivers which they understand, reporting is automated and simplified." Overall, the forecasting cycle is more efficient and employees generate value via more insightful business analyses.

Rotkäppchen-Mumm Sektkellereien

In its quest to deliver leaner, more profitable operations and improve its ability to meet market demand, Rotkäppchen-Mumm Sektkellereien, a market leader in Germany, owning, producing and marketing a number of best-selling sparkling and still wines and spirits, has recently adopted rolling forecasting to address its sales volumes and production planning. The name "Rotkäppchen" derives from the little red cap on the main sparkling wine brand and among its products are the well-known brands such as Geldermann, Rotkäppchen, Mumm, Jules Mumm, MM Extra, Chantre, Echter Nordhä user, Mariacron, Eckes Edelkirsch and Blanchet.

The company ships its bottles to numerous small customers, but the lion's share of products arrive at the docks of a multitude of outlets owned by a handful of major retailers. For these large customers, key account managers manage regular shelf volume and promotions volume and in turn coordinate those volumes with the production team.

During annual planning, explained Andre Birrenbach, Chief Information Officer, the seasonality is fairly predictable: plan the demand for the winter, spring and holidays based on the current calendar. However, over the year, the company needs to be able to adjust to another factor: the unpredictability of customer promotions. For these, sales managers must price products based on best guesses and then request volumes based on the price point.

But the complexity does not end there. Prior to its implementation of IBM Cognos Planning, sales planning was based on spreadsheets. For annual planning alone, the company spent inordinate amounts of time pulling in and manipulating data, especially after the merger in 2008 with Eckes Spirituosen & Wein.

On the brand level, moreover, sales and IT found no easy way to gauge numbers on different bottle sizes except by writing new formulas in Excel, said Birrenbach. "Sales would forecast brand demands at a high level—for example, production of 500,000 bottles across the entire brand—but without a detailed breakdown for volumes to SKU level."

Production and sales would also have to comb through various emails, historical data and other random data points to determine the production at the SKU levels for each brand. When production planners had to guess because brand volume details were missing, then production planning was not as accurate.

Rolling forecasting to the rescue

Sales and Production now keep two horizons within line of sight: first, they work with an annual plan that includes the seasonal demands such as the Easter holiday uptick. The second rolling horizon provides the adjustments needed in response to fluctuating customers demand (such as promotions), the critical activities which do not reach Rotkäppchen at the beginning of the year but are provided to sales across the year as customers release them.

Overall demand for the year is completed by sales in Cognos Planning and rolled up for a year. Sales directors review and agree or not in top-down fashion and the plan is returned to key account managers for adjustments if necessary. The later revenue plan is derived from the volume planning in IBM Cognos Planning.

Monthly, for each brand, account mangers forecast for three months out to fine-tune their projections, particularly to adjust to the customer campaigns they receive three to six months in advance. They work with pre-loaded annual plan data, based on previous actual data. In Cognos Planning, they expand the view of the brand and project demand on the SKUs based on different characteristics such as sub-brand and bottle sizes.

In a few hours, forecasts are complete, providing the promotional information, volumes based on expected pricing and the dates the goods are to be shipped, continuing the proactive approach to more effective operations.

Business effectiveness extends into manufacturing as accelerated information for production. The Production team receives a consolidated cube of projected volumes from sales, with production needs rolled up per brand and individual SKU—all without the former, tedious manual intervention. This production plan, with different time horizons because sparkling wines require six weeks and spirits three months because of raw material management, is then uploaded into SAP production planning, enabling raw material planning with estimates for delivery and production orders. From sales, the forecasting data also makes its way to management as a monthly report with the annual plan and the rolling forecast, improving their insights into company activity and performance.

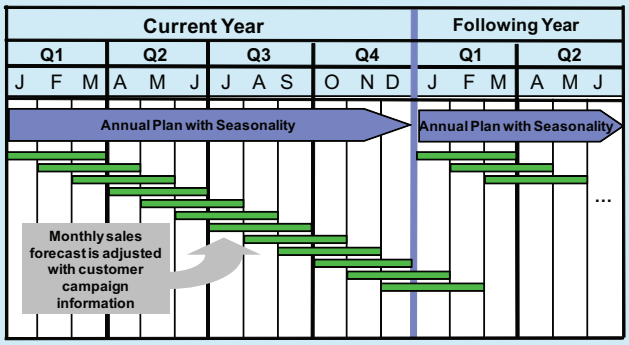
More plans to enhance forecasting are on the drawing table. Birrenbach added, "For example, we hope to receive the point of sale data from major customers in order to analyze buyer behaviors, spot market trends and launch new promotions for our wines and new products."

Benefits

The entire enhanced sales forecasting and production planning with pre-configured forecasts, automated consolidations, roll ups and user-generated reporting helps Rotkäppchen optimize production efficiency and avoid out-of-stock and lost sales. Specifically, the parallel processes of the rolling forecast and annual plan enable sales and production to work with more accuracy and detail, and integration of data means that the issues of transformation errors are eliminated.

Choosing the model approach

The Rotkäppchen planning team had tested statistical or mathematical modeling for their forecasting, but this was only truly useful for some predictive information on lower-demand items. So, the team determined that they would use driver-based models instead. The forecast relies on the blend of marketing campaigns, historical data and a planned sales volume. The historical data and planned volumes from the annual plan—all at the SKU level—are pulled from SAP NetWeaver Business Warehouse. With Cognos Planning, the account manager can view rolled-up, consolidated data on the brands and drill down into SKU-level data to make the monthly adjustments.



In addition an annual plan with seasonal demands, the Rotkäppchen sales team forecasts each month to take into account the upcoming customer campaigns. Sales receives information about these campaigns only three to six months in advance, and the shorter lead times mean frequent decisions and updates.

Major homebuilder in North America

There's no place like home, and there's no process like rolling forecasting to help with building homes.

Homebuilders are certainly facing tough times. In better business environments, one of the major builders in North America has been able to realize up to 15,000 closings per year. These days, profits can be restrained by high unemployment, foreclosures, the resale home inventory and competition for new home sales. Even during these downturn times for construction, upsides such as low interest rates and tax credits or incentives do exist, and to maintain or grow its position in the market, a North American builder must continue to invest in new lots and track and forecast on new homes and thousands of lots in development each year.

The company usually holds the land for a sub-division for three to five years. It offers its products in ten major markets, in four major regions. Divisions in regions can consist of 20 to 30 subdivisions, each with 50 to 150 houses, all with different start dates.

Planning and forecasting processes

With the help of IBM Cognos TM1 for planning, budgeting and analytics, the homebuilder performs corporate and operational planning, which includes rolling forecasting. Using actuals that are updated monthly as a beginning balance for revenues, costs, starts, closings and unit count of homes being built by phases of construction, the Finance team inputs all future projected activity into the planning model using the web. The plan model then calculates by month a rolling income statement, balance sheet and cash flow for all land and properties, undeveloped and developed—for an extensive five to eight years out. Therefore, for a subdivision begun in 2011, there will be a month-by-month projection through to 2018.

Rolling forecasting for planning is highly complex, covering subdivisions from inception to completion. "But the process enables the company to keep an eye on the multiple levels of divisions, the backlogs, and acquisitions, in order take action as necessary on constant basis," said the Senior Manager, Finance and Administration (F&A).

Another driver is the backlog of the homes sold. Those to be delivered in the coming month appear in the plan model. In the forecast, the Finance team also includes every home under construction or in plans with the projected starts and sales, including the "spec" inventory. When a Finance person determines that the costs of spec homes might be rising too high, he can slow down the start of the home construction.

Forecasting contracts

An additional mainstay of tracking the business is following contracts and their closing dates, including details at the individual home level. Sales representatives and staff in the Home Mortgage division watch for special conditions, flags or drivers in all operational aspects, such as credit issues, shortage of building supplies, or the delaying effect of weather. Then sales can take action as necessary, all the way to the close of the contract, to reduce the revenue gap. They also add contingency reports on these variations to the forecast.

Using the Cognos TM1 Web interface, each week, sales people compare the traffic levels for model homes, units to close, revenues and costs in their regions with historical data pulled from the planning model. During the process, the sales person can view more information about homes using nested forms in TM1 Web "sheets" and add comments to assist with ongoing planning and budgeting.

Said the Senior Manager, F&A, "You really can't forecast the future, but you can watch for the opportunities as conditions change. As the economy changes, we need to be able to ask the what-if questions and develop contingency plans for major risk drivers such as interest rates, decreases in sales prices, cancellations and the number of our lots outstanding. So, if sales decline by 5 percent, then we can immediately see the impact across the business. Then we might turn to our backlog of contracts and make sure the contracts are still viable before we begin to build those homes."

And this constant anticipation is the mantra in the market these days. As authors Steve Morlidge and Steve Player write in *Future Ready: How to Master Business Forecasting*, "It's not about comfort in staying as close as possible to our budget, but it's about the ability to project what could be accomplished. For operational managers, the win is that their forecasts are made more visible and are taken more seriously."[1]

In with the new

To manage all subdivisions operating with their different start and end dates, the company also needs to forecast the point at which a new subdivision should be purchased.

At any time, the pipeline can contain hundreds of possible subdivisions. But three-quarters of these projects do not come to fruition because of the failure of multiple qualifications such as soil tests, permits or financial criteria.

The Finance and the Land Acquisitions teams work together to forecast all the costs for the life of the potential subdivisions in rolling projections of five to eight years. First-year costs include land purchase, development of the utilities and structures such as sidewalks and road. Then the 50 to 150 houses themselves are added to the forecast along with the cost incurred for selling the homes each month over four years. Expenses incurred at end of the fifth year or life of the subdivision, such as the model houses that need remodeling and roads that require possible repaving, must also be projected, all adding hundreds or thousands of dollars to the cost of the houses.

[1]"Future Ready: How to Master Business Forecasting," by Steve Morlidge and Steve Player, John Wiley & Sons, Ltd., 2010, p. 52.

Further dimensions of the plans might be a mix of house sizes in a single subdivision, with their related costs and time to completion: for example, one subdivision might consist of 20 homes at 2,000 square feet, 30 at 2,500 and 10 at 2,800.

Land acquisition presents another layer of complexity for the forecast. The numbers of projected subdivisions for the upcoming fiscal year have to be defined early on in the previous year due to the length of time from first purchase to first home close. Using Cognos TM1, Finance compares all total home building to the pipeline by division and subdivision, running scenarios to weigh how new projects would affect each division over a series of years. One option they might test in the scenario modeling is the purchase of developed lots rather than undeveloped: this means the company can complete houses faster—in, say, three to four months—but profits will be lower.

Once the Finance and Land Acquisition team decides to purchase a subdivision, Finance copies the ProForma information used by Land Acquisition to make the decision from the Pipeline section of the plan model into the Planning/Forecasting section. This data then becomes the starting forecast for the subdivision and can be compared over time to actuals.

From the bottom up

Given that the labor, materials, contracts and other costs for each subdivision can be affected by regional economies and by the economy at large, the company takes a bottom-up approach to determining the costs for each group of homes. In a costing "sheet," the Senior Manger, F&A, and his team have developed the model to factor in automatically more than one hundred costs per new sub-division, which are then rolled into the pro forma income statement.

Finance also manages the monthly budget forecasts with contributions from sales, who are held to goals using promotion, and the production team, who assist in the construction projects. To the monthly forecast, Finance adds three impairment scenarios with different interest rates. Ad hoc snapshots can be taken periodically for various reporting needs.

Besides Finance, Sales, Land Acquisition and the Home Mortgage division, many functions benefit from the continuous monthly forecasting. Finance provides the reports which include top-down adjustment and with totals by region to corporate, financial services, homebuilding and adjustments, the SEC with impairment analysis. Operations also uses the data for banking purposes in each region.

"Forecasting in general can be a time consuming process. Without TM1, the ability to consolidate, review and make timely decisions would be seriously compromised," said the Senior Manger, F&A. "TM1 allows us to track of all of our subdivisions as well as keep our eyes to the future because in homebuilding we have a large investment that spans over multiple years. Being able to react to changing economic times is critical."

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