

Streamlining your forecasting process

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Forecasting customer demand is a critical business function. For manufacturing, distribution, and retail businesses, accurately forecasting future customer demand is a fundamental step in achieving good customer service at a reasonable cost based on an affordable level of inventory.

Forecasts of customer demand drive decisions on which items to purchase (including when, and how many) and which products to make or buy (again, including when and how many). Any business needs reasonably accurate forecasts to plan and be able to meet its customer requirements cost-efficiently.

The reality is that forecasts can never be 100% accurate all of the time. Forecasting future demand directly or indirectly involves trying to predict many uncontrollable variables that ultimately influence sales—such as economic factors, weather, government regulations, competitor activities, consumer preferences and trends, new products, and promotional activities. No one can be expected to be able to predict these factors accurately all the time, if at all.

At the same time, inaccurate sales forecasts are costly, resulting in excess inventories, stock-outs, low productivity and poor customer service, and often cause friction between the sales/marketing function and supply/manufacturing function in any business.

Is achieving accurate forecasts a case of mission impossible? In today's competitive world, the majority of companies of all sizes use ERP (Enterprise Resource Planning) systems to plan and monitor their day-to-day operations.

RIGHT: Tony Johnson

BELOW: Cardinal's custom sterile packs are made-to-stock to customer specification.



When it comes to forecasting customer demand, these systems offer very basic functionality—if any—which in most cases falls short of meeting the forecasting requirements of the business.

Realising the need for achieving accurate forecasts, companies tend to use intelligent and highly paid sales / marketing executives to gather sales data to massage into a Lotus or Excel spreadsheet to develop a forecast, often a complicated process that takes a few days. More often than not,





Hepke Poutsma



95% of this time is spent gathering data and only 5% of time in evaluating results. The consequence is that most companies suffer from forecasts that are 95% of the time “lousy” and perhaps 5% of the time “lucky.” Despite this, many companies accept these lacklustre results and do very little to improve the quality and accuracy of their sales forecasts, unnecessarily wasting precious resources.

But why do companies sit back and accept these results when it is possible to combat the mission impossible and streamline the forecasting process to improve the quality and accuracy of the sales forecasts?

Perhaps you need to justify the investment? If you regularly suffer from high inventories, stock-outs, poor customer service, and/or urgent replenishment orders, this is justification enough. But if you still need convincing, try to estimate systematically how much safety stock in your business can be reduced by improving forecast accuracy. Be realistic in your assessment. You will find that a 10-15% improvement in forecast accuracy can pay for your investment in a matter of days.

In a recent seminar hosted by Supply Chain Business Solutions, two companies—Cardinal Health Australia 200 Pty. Ltd. and Freedom Furniture—described how they went about streamlining their respective forecasting processes.

Cardinal Health

Cardinal Health is a part of a global organisation supplying goods and distribution services to the health industry. In Australia, they predominantly supply hospitals and surgeries with operating theatre related disposables, suction systems, respiratory circuits, and customised procedure-specific sterile packs. They provide products to 800+ customers from four distribution warehouses around Australia.

Because of the nature of the products supplied, Cardinal's customers expect 100% on-time and in-full deliveries, and most expect to receive them the next day, explained Tony Johnson, Australia and New Zealand Logistics Manager for Cardinal Health Australia.

“We have to meet these expectations in spite of the fact that some of our imported goods and materials have lead times in excess of three months. Goods are (generally) light but bulky and do not lend themselves to airfreight. Therefore for both customer service and eco-

nomics it is very important to have the correct quantity in the right warehouse when required”.

“Our product range consists of 700+ custom sterile packs, which are made-to-stock to customer specification. They are manufactured in Sydney from imported and locally sourced raw materials. They are stocked in one of four distribution warehouses closest to the customer for whom they are made. The forecasting requirements for them are relatively simple as we only need to forecast them at a single level in the supply chain. However it is imperative that the forecasts match real demand as closely as possible since, due to the customer's reliance on these products, it is totally unacceptable to stock out”

“We also supply 800+ imported finished products, which are stocked in all four distribution warehouses. Here the forecasting requirements are more complex as we need to forecast sales for each of the products from each warehouse for the purpose of deciding how much stock to keep at each of the warehouses. We then aggregate these forecasts to a national to make purchasing decisions.”

“We also have 300+ imported indent products which are generally shipped direct to customer. We do not need to forecast them nor stock them as they are purchased against customer orders only.”

“Our initial forecasting tool was on spreadsheets. While this method is very user-friendly and flexible to use, we quickly realised that using spreadsheets for forecasting had severe shortcomings including being highly prone to human errors and producing forecasts, which were not that good.”

“When Cardinal Health separated from Baxter Healthcare, we had to purchase and install our own ERP system. The ERP system had a forecasting module but it had serious limitations in meeting our forecasting requirements. For example, it could not handle forecasting at multi-levels i.e. warehouse and national level, a fundamental requirement for forecasting our imported finished products. We could only use a single forecasting model for all of our products. While a model like simple moving average was OK for our custom sterile products, it was not appropriate for imported finished goods.”

“Also, much of our business is through tenders so we needed to have the capability of overriding forecasts to cover probability of future increases or shifts in demand. While the ERP system was capable of cursory single level overrides, these were lost every time the forecast process was refreshed, resulting in loss of valuable time and added frustration.”

“The end result was inaccurate and unreliable forecasts leading to high inventories, frequent stock-outs, and high freight costs to expedite deliveries as well as continuous trans-shipping of stocks between warehouses, poor managerial productivity and unsatisfactory customer service. Something had to be done”.

“We started to look for a forecasting tool which offered:

- Multi-level forecasting - currently used at three levels (product group, national, site) but could quite easily be used at more levels e.g. sales territory, customer etc.



ABOVE: The Freedom Group consists of brands such as Bay Swiss, Capt'n Snooze and Freedom Furniture.

- Intelligent "best fit" forecasting model selection
- Ability to capture data at whatever level best suits. e.g. customer, site etc.
- Capability of saving overrides (which can be at multiple levels and have multiple methods for application e.g. absolute, differential, percentage) for reapplication after statistical forecasts are refreshed.
- Flexibility in structure of input files and hierarchy.
- Ability to provide output in multiple formats.
- Ease of use, both for setting up and learning the product.

"On top of meeting these requirements we needed to find a tool which was proven and did not cost an arm and a leg. We found Forecast Pro, which met all our requirements at a cost of under \$10,000. It only took a couple of days of training and just a couple months of elapsed time to implement it."

"However, having the right forecasting tool was just the start. While it took away the drudgery of working with spreadsheets and overcame the limitations of the forecasting capabilities of our ERP package, we needed to clearly understand our forecasting requirements and had to design an effective forecasting structure and process to suit. We needed to make sure that the data we fed into it was relevant and accurate. Above all, we needed to clearly define the responsibilities for forecasting and make sure that forecasting was a team effort and not just an individual one."

"After 18 months of implementation of an effective forecasting process aided by Forecast Pro, we have achieved significant reduction in freight costs (greater than 22% reduction), increased inventory turns leading to a 10% reduction in warehousing costs and improved customer service from greater than 100 items on backorder at the worst levels to less than 5 currently," Tony Johnson concluded.

Freedom Furniture

Under the Freedom Group are well-known Australian brands such as Bay Swiss, Capt'n Snooze and of course Freedom Furniture. Overall, the group has 236 outlets, four manufacturing facilities, about \$800M of sales turnover, \$100+ M of imports and seven distribution centres. Forecast Pro is used to forecast the retail sales generated in over 60 Freedom Furniture stores.

Hepke Poutsma, Senior Homewares Planner is responsible for forecasting the Homewares range of products, which has about 5000 products sold across 60+ stores in Australia and New Zealand. He described how they have streamlined their forecasting process.

"Like most companies, we used Excel as our forecasting tool. While Excel is quite flexible (easy to change and manipulate) and easy to understand and work with, we suffered from many unintentional human errors. The spreadsheets got bigger and bigger all the time and the program used to crash resulting in frequent restarts

and loss of valuable time. Because of the sheer size of the forecasting job we had to do, it was taking us a very long time to develop forecasts and it was a very tedious job indeed. Even then, we could only see numbers and it was not a visual presentation, which most of us would prefer.”

“Our sales are highly seasonal. We also continuously introduce new products to suit changing customer preferences. As we do not have many products with two years or longer history, it is difficult for any statistical forecasting tool to identify seasonality, let alone at a product level. So we needed a tool which not only calculate seasonality patterns, but also is able to apply relevant seasonal profiles to products with limited sales history.”

“Since retail business is highly promotion- and clearance driven, any forecasting tool to be used must be able to account for such event-driven sales increases. With the size of forecasting task at Freedom, we needed a tool which was also very flexible to set up and at the same time easy to use.”

“One of our requirements was the ability of the software supplier to understand the retail environment we were operating in and provide value-adding assistance in implementing the forecasting tool and the overall forecasting process”.

“However, we decided to go for a trial before deciding on a full-scale implementation. This proved very useful for us in deciding how to break up the forecasting task, how to use appropriate seasonal profiles and how to structure the overall forecasting process. It also enabled us to compare the accuracy of the forecasts generated by Forecast Pro vs. the accuracy of forecasts generated by our own Excel-based system being used at the time, with the former being sufficiently better for the majority of the sample items. I believe this phase is vital, particularly in large scale forecasting jobs such as what we have at Freedom. Just applying sophisticated forecasting algorithms without doing solid homework can lead to serious disillusion.”

“We had to pay particular attention to forecasting of new products. As everyone knows, forecasting new products is a very difficult task and requires a high degree of educated guesswork. However, the software helps us in this area by applying relevant seasonality patterns and allowing us to implement a weekly forecasting cycle so that we can react quickly if the sales turn out to be very different from forecasts.

After about four months of existence, new

products are merged with what we call existing products, which are forecasted on a monthly cycle.”

“We have now implemented the new forecasting process facilitated by Forecast Pro for over 18 months and have seen some very good results in the areas of inventory and customer service. The process has enabled us to overcome the limitations of our Excel based forecasting process being used previously. It now takes a matter of minutes rather than hours to generate statistical forecasts.

This has enabled our planners to spend majority of the time in reviewing statistical forecasts and identifying products that need attention. The graphical presentation has also significantly increased the efficiency of the planners.”

“While in today’s highly competitive business environment, a clever forecasting tool is very much a necessity in most businesses, it will never replace the need for human intelligence. After all, future demand patterns do not always follow the past demand patterns and good forecasts can only result from applying quantitative techniques in combination with your own knowledge of your products and the markets you are operating in. You need to design and implement an effective forecasting process, which accommodates both and above all, good teamwork is a pre-requisite in streamlining your forecasting process,” Hepke concluded.

The advantages of streamlining your forecasting process are endless. When getting started, acknowledging the need is only the first step; make sure to clearly understand your forecasting needs, especially if you are going to invest in a forecasting tool. There are many horror stories about failed implementations, so you need to be certain that the tool will be capable of meeting your needs. Go for a trial or a pilot implementation if you are not sure.

Remember however, that investing in a forecasting tool is just a start, you need to design a forecasting structure that is likely to give you the best forecasts and then implement a sound forecasting process. Above all, you will need clearly defined accountabilities, capable and motivated people and effective teamwork to reap benefits that can come from good forecasts.

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