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White Paper

Forecasting's New Paradigm

Improve accuracy and give better guidance by involving all stakeholders in the process.

BEAGLE RESEARCH GROUP, LLC
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Introduction

Rapidly changing economic times bring new products and new ideas to the forefront. People and companies try things that may have seemed impossible before either out of necessity or in a reach for competitive advantage. The sales forecasting paradigm is an example of a process in transition and for good reason. There is a widening gap between the conventional revenue forecasting favored by many companies and the need to better predict the mix of business that a company will execute on and report to management, the board and individual investors.

Conventional revenue forecasting has become a disappointing method for giving guidance because so many things can go wrong — or at least change — between posting a revenue goal and actually getting there.

Beagle Research Group, LLC engaged in a market research study to better understand the use of forecasting and identify ways to improve the process. The effort resulted in the information provided in this white paper.

Methodology

We surveyed a small highly qualified group of professionals (n=105) in manufacturing industries. More than three quarters (78.1%) had titles of director, vice president, or general manager and a small contingent (5%) had C-level titles. Just fewer than 80% (79.8%) of the panel have sales or sales operations responsibilities. Companies with revenues greater than $1 billion made up 14.3% of the population and, in all, 62.9% of them had revenues over $50 million. The survey was conducted during Q1, 2009.

Key Findings

1. Many companies are leaving money on the table and a sizeable percentage of those companies (30%) do not even know the magnitude of their problem.

2. Forecasts are more fluid and less accurate. More than half of panel said that forecasts are changing more than before (42%) or that they didn't know how things were changing (10%). More significantly only 11% said their forecast accuracy was in the range of 95% or better.

3. Our results compel us to offer a forecasting maturity model and some suggestions for how many companies—especially manufacturers—can improve accuracy and therefore their guidance to internal and external consumers of their information, and with that drive better margins and results.

Sales forecasting is broken

Despite the importance of sales forecasting — readily agreed to by most business people — our research shows that the admitted accuracy of sales people responsible for making periodic forecasts is unacceptably low.

As Figure 1 shows, the level of accuracy experienced by our panel members varies widely and only a small number of the panelists enjoy a level of predictability that makes a forecast useful.

As an exercise in statistics, 50% is the probability of a coin toss turning up heads and a sales forecast with this level of accuracy it is not worth having. A forecast accuracy of 80% is usually deemed the minimum acceptable accuracy if a forecast is to be useful as a management tool. Below that level there is simply too much "noise" in the numbers for them to drive decision making.

Only 11% of our panel said their forecasts are at an accuracy level greater than 95%

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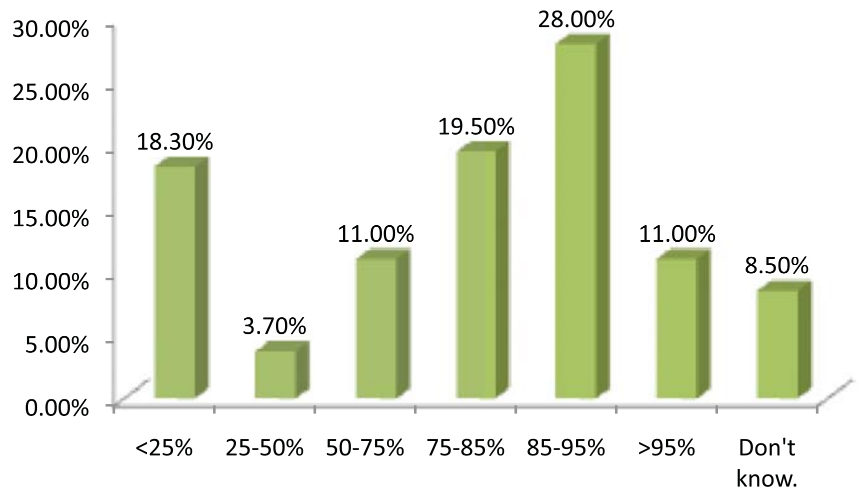
and 28% of the respondents said their forecasts were between 85% and 95% accurate. Surprisingly, 42% of the organizations surveyed either did not know their forecast accuracy or had accuracy levels below 75%.

Figure 1: Only 11% of the panel has good (95%) forecast predictability. Less than 50% is not worth having. (Y-axis is response percent, X-axis accuracy choices.)

Figure 1: What is your forecast accuracy?



Source: Beagle Research Group, LLC, May 2009

Wanted: A better way to forecast

At a basic level, the need to forecast is embedded in the need to understand revenue flows, which therefore influences a company's spending, and expansion plans. The information is consumed by the rest of the business to determine what to order and build and it is provided as guidance for board members and investors. Simply forecasting revenue without information about product mix is not sufficient in this case.

Revenue forecasting has never been very sophisticated. Even in this CRM era, our research shows that most sales people still deliver forecasts on spreadsheets or paper that their managers then massage in their own spreadsheets and provide to their managers. In this scheme sales people are too free to be wildly optimistic or to hold back information if they decide to. The only criterion is that they make a revenue number. This approach has two deficiencies, it builds error upon error and it provides no guidance for the production needs of the organization.

Errors

Managers massage their sales teams' forecasts because they frequently have no established sales methodology or they have one that is violated with impunity. Lacking clear forecasting rules some representatives are unrealistically optimistic (over forecasting) or needlessly pessimistic (sandbagging). In massaging forecasts managers try to smooth out the biggest errors in their people's work and substitute their own judgments, which is often no better according to our data. The current approach to forecasting builds in error.

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One dimensional

The sales team is responsible for delivering revenue so it is no surprise that sales people track it. But especially in manufacturing, revenue only tells part of the story. If a product cannot be delivered because the operations department cannot meet one or more of contract's conditions, the revenue will go to a competitor and, regardless of the rosy sales forecast, the company will fail to make its number. Consider the following example.

A use case

ABCD, a hypothetical manufacturing company, has a revenue goal of $2 million dollars per quarter. The company offers nine different products and its production capacity for any individual SKU is one hundred units per quarter.

Example 1

The company's quarterly orders are found in Table 1 and in this simple example all conditions are met. There is sufficient revenue to meet the goal and the company can produce all of the goods ordered because no quantity is greater than 100 units.

Table 1: Quarterly orders for hypothetical manufacturing company ABCD.

SKU	Qty	Total (000's USD)
A123	90	$450.00
D987	50	$400.00
F654	20	$180.00
R872	30	$120.00
U369	45	$90.00
J472	81	$81.00
M951	15	$120.00
V654	50	$200.00
P098	45	$360.00
Total		**$2,001.00**

Example 2

In this example, the same company, ABCD, can make about the same amount of revenue with a slightly different product mix but there is a problem. Demand for SKU A123 is up but demand is down for SKU P098, however the revenue change is minimal so sales declares victory because they still make their number. But the company is in a more precarious position because it cannot meet all of the demand for one of its products — SKU A123 — because the order for 135 units is beyond its capacity to deliver by 35 units or $175,000. The total projected revenue may be $2,042,000 but the inability to deliver on 35 units means the real revenue projection is $1,867,000 or a shortfall from the goal of $133,000.

Table 2: Orders for A123 exceed capacity, not always a good problem to have.

SKU	Qty	Total (000's USD)
A123	135	$675.00
D987	50	$400.00
F654	20	$180.00
R872	30	$120.00
U369	45	$90.00
J472	81	$81.00
M951	15	$120.00
V654	50	$200.00
P098	22	$176.00
Total		**$2,042.00**

Because the revenue is about the same no one in sales alerted operations and management that there might be a problem. Management finds out about the change to the product mix too late to take action to avert a quarterly disappointment.

Leaving money on the table

The problem identified in Example 2 is repeated too often. Experienced sales managers know that when they are faced with a shortfall for any reason, they have to find new revenue sources to make up. But this is not always possible and often a sales manager finds that he or she must bring deals from the future into the current period, inevitably by offering larger than customary discounts and effectively leaving money on the table.

Even if alternative business can be found to make up the revenue shortfall, the inability to fill the original order has multiple ramifications for the company and none of them are good. They include,

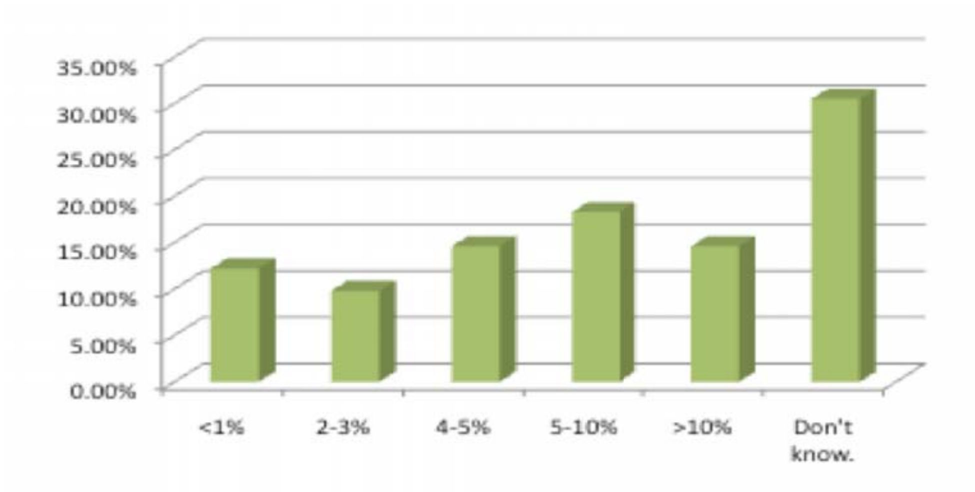
1. Lost revenue that should never have been jeopardized
2. An opportunity for a competitor to penetrate the account
3. Customer delivery satisfaction drops.

Inevitably, our research (Figure 2) shows that virtually all companies leave some money on the table each quarter for a variety of reasons. But a surprising finding from our study shows that 30% of our panel said they didn't know how much money their companies left behind every quarter.

The solution to these and other challenges is better forecasting and by that we mean better technology but also a smarter approach to the effort. If an organization expects to avoid the situation in Example 2 above, then all parties involved in the forecast — from the producers to the consumers of the sales forecast— need to take an active role in the process.

Figure 2: *In your opinion, what percent of forecasted revenue is your company leaving on the table every quarter? More than 30% (Y-axis) said they didn't know. The X-axis shows survey choices.*

Figure 2 Companies are leaving money on the table. How much? Some don't know.



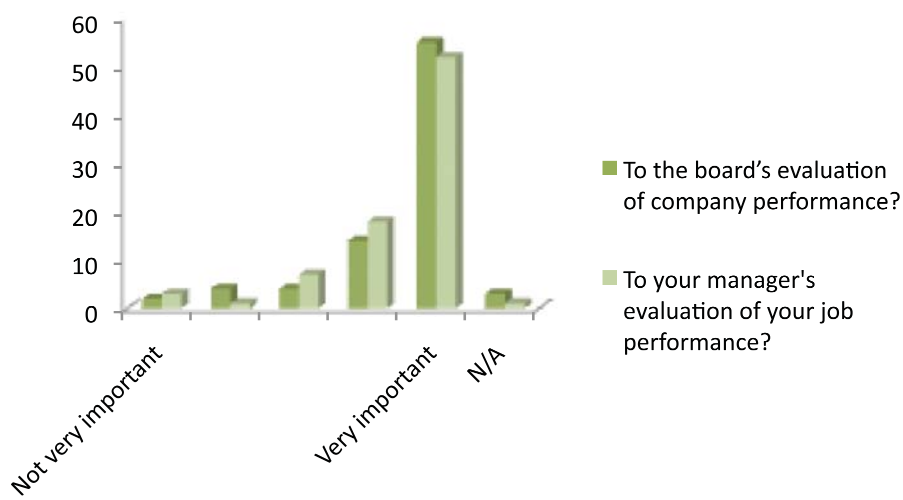
Source: Beagle Research Group, LLC, May 2009

How to improve sales forecasting

Improving the reliability of a forecast requires some structural and behavioral changes throughout an organization and our panel rated it highly as a means of demonstrating how well a manager does his or her job. Figure 3 shows that the majority of our panelists understand that the guidance they give to their managers and ultimately to the board, is important to their overall job performance evaluations.

Figure 3: *How important is forecast accuracy? Important enough to do well!*

Figure 3: How important is an accurate forecast?



Source: Beagle Research Group, LLC, May 2009

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However, too often the work of change is left to those lower down the organizational hierarchy, such as sales operations or IT professionals, but improving forecasting is everyone's responsibility. Successfully changing the forecasting paradigm follows a predictable path. Obviously, the sales representatives must be given a new paradigm for forecasting because their boss insists on it. But the change will not be successful unless the rest of the organization buys into the paradigm as well. There must be mutual reinforcement among the departments and agreement that the new, more accurate, paradigm will be the only forecasting method used. The following six steps outline our suggestions for improving forecasting so that the result is more timely and accurate.

Eliminate reliance on a single dimension

If you track and measure revenue and nothing else, then you really cannot expect the forecast to help operations plan production or finance to plan expenses and cash flow. As we have seen, the mix of products, their characteristics and a company's ability to produce them all weigh on the result; so why shouldn't they play a role in forecasting?

Get all the data. That means revenue but it also means products down to quantities and any descriptors that are important to the mix. In Example 2 above if sales had been tracking more than revenue and if all parties (see below) who consume the forecast had been privy to the information, the operations group would have spotted the high quantity for SKU A123 and stepped in. At that early time, arrangements could have been made or alternatives developed to meet the customer's demand. Instead, ABCD had a crisis and lost business and some of its reputation.

This simple example also highlights the issue of trust between departments. No sales forecast is likely to be perfect and knowing this other groups have a right to be skeptical. But capturing and providing all of the data such as the quantity of orders for SKU A123 would give others time to rectify the situation. With that time all parties can build the trust in the knowledge that together they will find a way to fill the orders.

Involve all parties

As we described above, the forecast is a changing and changeable document and treating it that way means working with all relevant parties to shape the best and most reliable forecast for the company. The people involved in all aspects of the product and revenue generation processes must become active participants in the forecasting process.

Sales people have an important role to play but the process only begins with them. Once the forecast data is collected by sales and vetted by management, it is suitable to ripple through the rest of the organization. The forecast's consumers can then adjust their procedures and provide greater input to the overall process.

Develop an instantaneous process

Rather than waiting for the weekly or monthly forecast to come out, let changes to the forecast ripple through the organization in real time to alert all relevant parties. This approach serves as an early warning system to alert the people who can take actions that can have material effects on the forecast and its outcome.

Develop a plan and stick with it

Improving forecasting has a great deal to do with behavior modification so don't

Strategy and the Fat Smoker

David Maister is a strategy consultant and former Harvard Business School professor. In his latest book, *Strategy and the Fat Smoker*, Maister examines why organizational strategy often fails. His startling conclusion is that "The necessary outcome of strategic planning is not analytical *insight* but *resolve*." [italics in original]. The point? Very often executives know what to do but the resolve to do it is often lacking.

expect instant results. Instead look for improvement on a weekly and monthly basis. Experts like David Maister (see sidebar) say that the resolve to stay with a new process is very important to success and, unfortunately, often lacking in corporate process change management.

Make accuracy a requirement and incentivize the right behavior

Better forecasting starts with the sales representative's accountability for being accurate. Rather than approaching forecasting from the perspective that making a number is good and exceeding the number is better, successful forecasting companies take a broader view of the business. The absolute sales number is important but so is the ability to deliver what's been sold and the impact on margins. Being over is almost as problematic as being short as companies must scramble to have the right amounts of staff, raw materials and capital for the incoming orders.

Organizations that focus on accuracy in the sales forecast place a premium on getting their numbers right not just simply getting their numbers. Some organizations make forecast accuracy a component of a sales person's compensation. Other organizations make forecast accuracy a subject of competition between sales teams. One sales manager told us he built accuracy into forecasting by making ten percent of a representative's compensation contingent on being within ten percent of the forecast. If the forecast was off – high or low – the bonus was reduced by that amount up to the ten percent limit.

Use forecasting technology

In a company that produces an array of parts and assemblies, spreadsheets prove to be inflexible and brittle as forecasting tools. An ideal forecasting tool must be built on database technology to provide the flexibility that supports change. Moreover, a database supports sophisticated analytics tools that can be used to interrogate the data to identify patterns that are often not visible in simple reports. Automated data analysis is a primary tool for alerting managers to forecast changes and the presence of unstable conditions.

Where are you? The forecasting maturity model

The change from conventional revenue forecasting to multi-dimensional business forecasting is part technology shift and part behavior modification for most of the organization. The Beagle Research forecasting maturity model describes increasing levels of forecasting sophistication. Where does your company rank?

Table 3: A new paradigm: the forecasting maturity model. Where does your company fit?

The Forecasting Maturity Model

Level	Forecasting characteristics	Tools	Characteristics
1	Manual	Spreadsheets done monthly or weekly	Impossible to keep everything in your head so you have to write some things down but the paper-based methods are quickly overwhelmed — spreadsheets don't merge, hard to track deal changes month to month. Constant surprises. The larger the company, the bigger the problem.
2	Revenue	SFA forecast data exported to a spreadsheet for manual manipulation by managers to give a better sense of the forecast.	SFA does a better job of tracking revenue but this is no solution for understanding quantity and mix. Spreadsheets are a growing problem.
3	Business	Email and meetings with other departments to review spreadsheet based forecast.	Demand for information places additional pressure on sales to provide accurate guidance. Spreadsheets cannot provide the level of granularity needed consistently.
4	Strategic	Database and analytics- based forecasting tools and a methodology that involves all relevant parties to ensure the forecast is reliable.	Sales is incented on accuracy. Database and analytics provide trending history opening up the process for all participants. Vetted numbers and circulated to all forecast consumers who contribute further refinements. The company has more time to adjust to change

Source: Beagle Research Group, LLC, May 2009

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Conclusions

Giving good guidance through better forecasting has always been a challenge for sales organizations and large companies. Economic volatility makes better sales forecasting even more important. Not long ago forecast inaccuracies could be worked around either because there was excess capacity or inventory or because demand was generally high. But when demand and supply more closely match or when supply is constrained, it becomes even more important to get the forecast right.

You might think this only applies to manufacturing companies but any company with definite production constraints faces forecasting issues including semi-conductor and other high-tech manufacturers, professional services firms, process manufacturers, media and publishers all face similar forecasting needs.

Modern software makes it possible to build forecasting tools that can increase the value of a forecast to the organization by building in reliability and trust for the process. However, success is still centered on human factors including user adoption and organizational resolve. No one succeeds at a diet by dieting most of the time; success happens when individuals have the resolve to change eating habits. The same is true for improving forecast quality — the whole organization has to agree that the quality of the business forecast is important and every person has to work toward improving it. The right forecasting software in the hands of incented people can make significant organizational change happen.

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