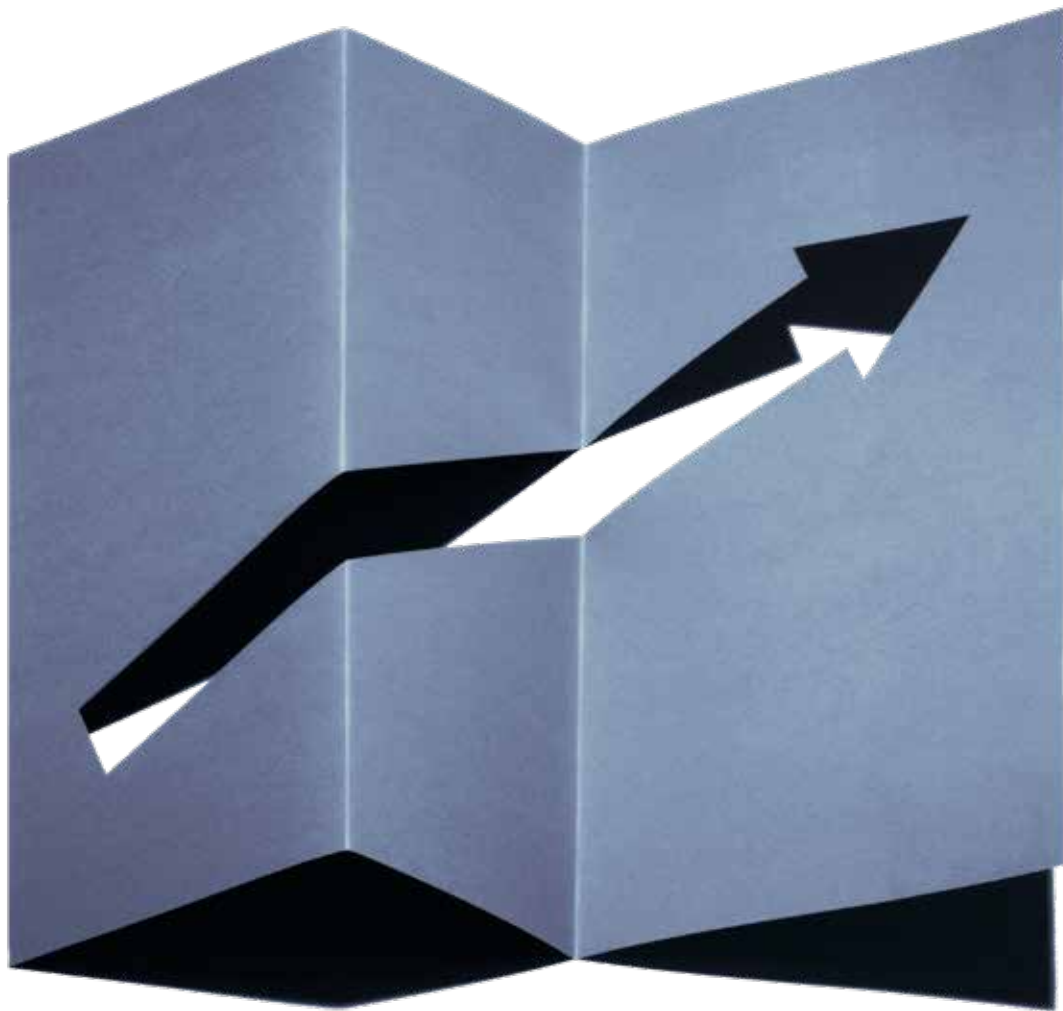


Strategy & Corporate Finance Practice

Bringing a real-world edge to forecasting

To improve the accuracy of corporate forecasts, build in the physical parameters from company operations.

by Ankur Agrawal, Mark Khavkin, and Jonathan Slonim



CFOs know what a “good” forecasting process

should look like: it should be accurate and comprehensive but flexible enough to inform a range of critical business decisions—capital reallocation, hiring, strategy, sales, production, and more.

But CFOs also recognize that there is no “typical” forecasting process: it will look different in different organizations based on sector-specific factors, feedback cycles, and, most critically, *how* the forecast is being used. A maker of packaged foods that is releasing new products every quarter will rely on the forecast to keep a close watch on inventory, while a mining company that is considering new plant construction over the next three years will use the forecast to predict capacity and pricing.

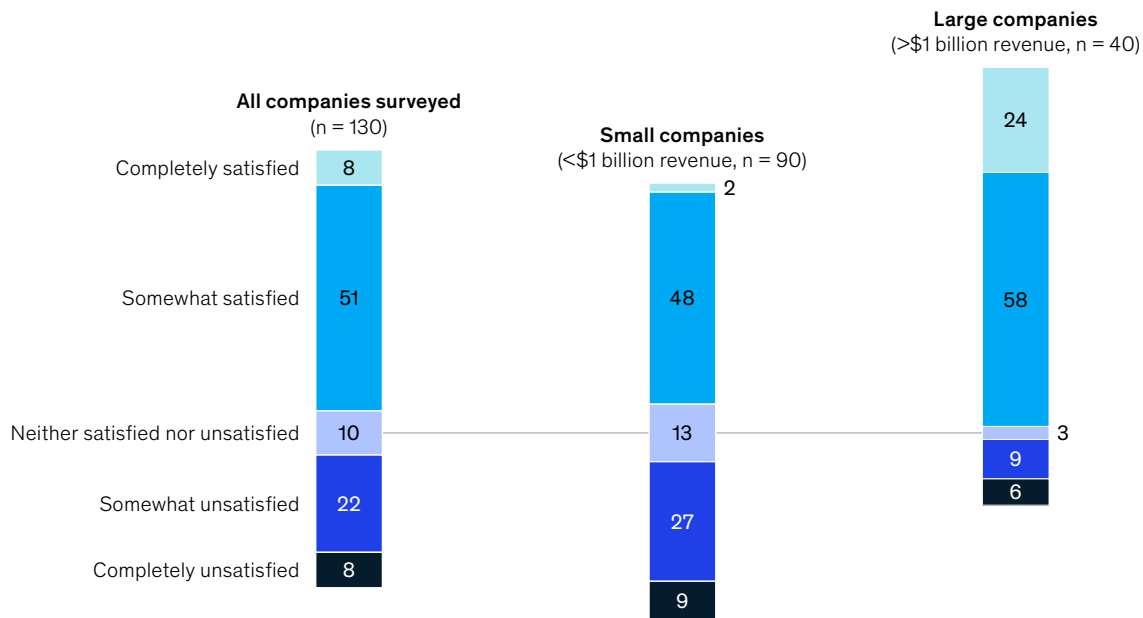
What's more, companies' access to ever-larger data sets continues to complicate the forecasting process as much as it enlightens it, leading to even more variety in how forecasts are built. Many of the 130 CFOs we surveyed in a recent study¹ say they now run more than one type of forecasting process in their organizations—rolling forecasts to manage the business, and ad hoc processes to make specific decisions (see sidebar, “How do your forecasts roll?”).

But while many of the CFOs we surveyed expressed general satisfaction with the results of their forecasting efforts (exhibit), some 40 percent also told us that their forecasts are not particularly accurate and that the process takes far too much time.

Exhibit

Companies are generally satisfied with their forecasting processes.

Forecasting-process satisfaction by company size,¹ % of respondents



Note: Figures may not sum to 100%, because of rounding.

¹ Question: “How satisfied are you with your current forecasting process?”

Source: McKinsey survey of 130 CFOs in North America; conducted in 2019 with help from the CFO Leadership Council

¹ We polled 130 CFOs—90 from small and medium-size companies (less than \$200 million in revenue) and 40 from large companies (greater than \$1 billion in revenue). Half of them were members of the CFO Leadership Council, a North American professional association of finance executives. The research base included companies from a range of sectors, including technology, healthcare, and industrials.

That's likely because they use financial measures rather than operational outcomes as indicators of forecasting effectiveness—if they review the success of their forecasting efforts at all. A focus only on financial inputs can mask big issues with companies' forecasting processes. By contrast, incorporating real-world operations insights into the financial-forecasting process can help CFOs and finance teams predict bottom-line issues early, based on a careful assessment of quality, operations, and customer-retention measurements. Senior leaders can then address performance issues before they become big problems, and the incentives of even the smallest subunit of the business would be targeted toward long-term value creation.

Integrating operations data within forecasts won't be easy, of course. Finance and business leaders will need to let go of traditional budgeting mindsets and explore new ways of working together. The good news? Automation and other digital technologies now make that easier. And four criteria show promise for injecting more accuracy and reliability into forecasting models, regardless of industry: build a momentum case separate from the business plan, use a variety of operational and external inputs, automate the forecast, and measure effectiveness with a fine-grained level of detail.

Building a better forecast

The typical forecasting process follows a pattern that contributes to inaccurate projections and a defeating, self-reinforcing cycle.

At one large industrial manufacturing and services company, for instance, managers in the business units and subunits are held to earnings targets that are rolled up into the overarching forecast. Over the years, these managers have become adept at finding the one or two things that will help them make their number, often at the expense of longer-term investment in quality, customer retention, and operational efficiency. Under the typical finance-focused forecasting exercise, no one checks operational metrics so long as the bottom line comes in strong, which it had for a while. Now the company's performance is stuck in low gear: the most

successful business units keep committing to higher numbers that eventually lead to a deterioration in quality, while the least successful businesses get scrutinized, adjusted, and fixed. The winners and losers flip, and the cycle repeats itself.

Some companies have worked at breaking this disappointing pattern. They've begun rethinking how they measure the success of their forecasting processes—focusing on the following four questions:

Have we built a momentum case? Many financial-planning and analysis (FP&A) teams spend most of their time looking at historical data to explain current outcomes. When they do get to look forward, they are likely focused on the budget, or on rolling up commitments from different business units into the overall business plan. Sometimes the business plan itself passes for the forecast. This, of course, just creates an echo chamber. No one is explicitly discussing how external factors and impending market shifts could affect forecasts. A better approach is to create a market-momentum case that relies on internal and external data as well as end-market trends to build the forecast. Once this unbiased momentum case is in place, senior managers can layer new and additional market information on top. Then any initiatives, investments, and strategic moves can be assessed relative to the base case.

In one industrial company that makes construction products, for instance, initiatives proposed across different lines of business were being valued in a vacuum. The teams charged with managing grouts and concrete, for instance, had no line of sight into what was going on with the frame-protection or frame-reinforcement business units. It was hard for senior leaders, then, to understand how to react to market shifts throughout the year and what actions the company should take. The FP&A team built a momentum case that set targets based on market dynamics in individual lines of business rather than allocating a single rate of improvement to all products. These targets much more closely reflected the full potential of the individual business lines, and, when compared with base-

case and other scenarios, allowed the company to allocate resources and take on initiatives to address market changes with much more agility than before.

The CFO's role in this process is to work with business-unit leaders to set realistic but aggressive targets in light of the market environment in which they operate. That means providing clear direction

to all the business-unit finance leaders about which basic assumptions to use in the forecasts—for instance, market-growth rates—even if the process of forecasting sales and profit for each business remains distributed.

Are we using a variety of operational indicators and external inputs? Operational inputs are important leading indicators of performance; often,

How do your forecasts roll?

The best predictor of satisfaction among the CFOs we surveyed was whether or not they used a “rolling” forecast—one that provides frequent updates and adjusts inputs in a predictable way as conditions change. These types of forecasts are common in a retail or software setting, where customers provide near-real-time feedback through usage, traffic, and purchasing patterns. Rolling forecasts can be used to great effect in other situations as well. An organization that maintained industrial equipment built a simple model to update its forecasts as equipment came into the shop, rather than waiting until end-of-year estimates to adjust financial figures. This helped the company avoid sudden swings in

recognized revenue in a percent-complete contract model. It also put the management team on the offensive as certain contracts over- or underperformed during the year.

Data availability is typically a major inhibitor of rolling forecasts. But it doesn't have to be. Many companies have reams of data at their fingertips but don't know where to get started. In our survey, we found that less than half of companies use any given form of nonfinancial internal data in creating their forecasts. Only 35 percent use external market data, and only 18 percent use additional types of data like weather, traffic, and other external factors as leading indicators of the

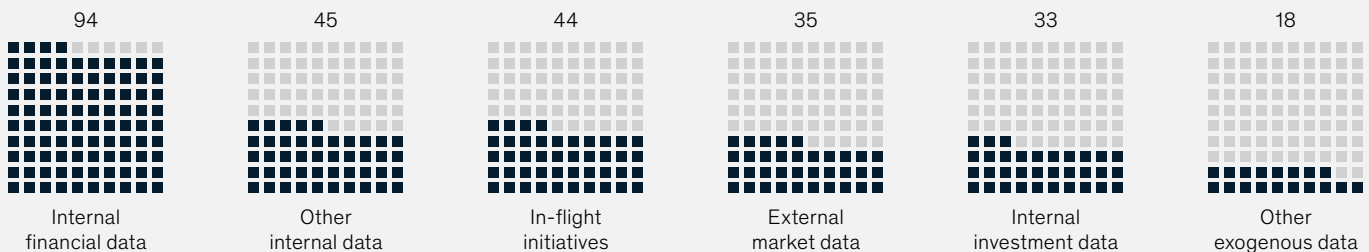
business (exhibit). With such scant inputs, it's no surprise that forecast outputs are often underwhelming.

Of course, there is still an important place for one-time forecasting to make major decisions. When it comes to drug development, the initiation of capital projects, or the decision to enter new markets, for instance, senior leaders' overoptimism about projects, concerns about sunk costs, and other biases can get in the way of their review of the full range of potential outcomes. In these cases, conducting an assessment against a carefully selected reference class of similar business scenarios can produce valuable insights.

Exhibit

Less than half of companies surveyed use all of the data available to them when forecasting.

Data used during forecasting,¹ % of respondents



¹ Question: “What data is included in your forecast? (Select all that apply).”

Source: McKinsey survey of 130 CFOs in North America; conducted in 2019 with help from the CFO Leadership Council

line leaders know how the company is faring months before the financial reports appear. Many times, however, operating data sit in disparate systems that don't work well with financial enterprise resource planning (ERP) systems. And rather than adhere to a standard set of key performance indicators (KPIs) for use throughout the organization, managers at different levels use different indicators. Some track the business, some manage individual performance, and some review indicators of financial performance.

One aerospace company had collected thousands of data points on every aircraft in its fleet. However, when the time came to create the annual forecast, it used only a small fraction of the data because much of the information was inaccessible. Operational and financial data were siloed, spread across many different IT systems. Recognizing a lost opportunity, the company created a thin analytics layer—a simple rules-based SQL program in a data lake—on top of its existing IT infrastructure. This program automatically gathered data from the multiple systems, allowing business-unit leaders to see information about the entire fleet on a single screen. They finally had operational KPIs integrated into the financial picture. If one site went overbudget on a repair, that information would get immediately recorded in the master model. Leaders at the company are now more confident about setting targets and stretch goals based on a distinct set of operational issues.

Surprisingly, the technical changes required were not difficult; in most cases, it takes no more than a few weeks or months (depending on product complexity) to rebuild forecasting models and link them to the company's financial-management systems.

Have we explored automation? Once business leaders have identified the most critical inputs to include in the forecast model, they should consider ways to automate the process and make it easier for business and operations teams to work together on forecasts.

In some cases, the company will need to explore new technologies and modeling techniques. Leadership at a multinational pharmaceutical com-

pany, for instance, used machine learning and advanced analytics to understand the variables affecting the performance of its clinical trials. The operations team worked with the business side to aggregate five years of data from more than 300 separate clinical trials (involving more than 100,000 patients) and to evaluate factors such as the clinical trials' time and costs across multiple geographies. They saw correlations between the rate of enrollment in certain sites and the success of the trials, and they used the data to introduce improvements.

In other instances, the whole forecasting model may be run automatically using macro commands in an Excel spreadsheet, with only a handful of manual inputs from the operations team, the CFO, and the finance team.

Whichever method is chosen, companies can use data that already exist in the company's ERP or other functional databases and, with simple transformations, spit out a real-time dashboard.

Once the CFO or another senior finance leader decides that automation is a high priority for FP&A, he or she should convene a small team (no more than three to five people from IT and finance) to "connect the pipes." The team should tackle this challenge incrementally—automating some elements of the forecasting process initially and adding others once the value of the effort is proved.

Are we measuring effectiveness at a fine-grained level? Once the forecast incorporates a range of internal and external inputs, CFOs can test the accuracy of each input, as well as the accuracy of aggregate estimates. By monitoring detailed measures, such as labor productivity, on-time delivery, and other metrics associated with costs and revenues, business leaders will be able to spot the "softer" KPIs that are being overlooked in light of temporarily strong bottom-line performance. They can then react accordingly.

When the CFO and operations leader at one consumer-goods company reviewed underlying performance metrics for each of the business lines, they saw that a major business unit was being

propped up by one rapidly growing product. Based on this insight, senior leadership decided to sell the underperforming parts of that business and double-down where they saw profitable growth. The team had until that point not looked past the simple financial performance of the business unit to the product-level sales and profitability.

If finance and operations leaders can maintain the forecast as a living model, with a clear feedback loop, they can ensure that any forecasting failures (and there will be failures) lead to real improvements.

Getting started

Making these changes to the forecasting processes can seem like a monumental shift—“rebuilding the plane while it is flying” is a common complaint among finance teams. With that in mind, the most effective move is to start small. For instance, the CFO should task the FP&A team in a single business unit or region to come up with a model and pressure test it both in the finance function and with nonfinancial leaders. Once there is agreement that the model is unearthing valuable insights,

it can be automated, and a similar process can be scaled to the rest of the business.

It’s important that the forecast be pulled out of the politics of budgeting, and that inputs are streamlined, automated, and pressure tested. Even if the business units each manage their own forecast, there is a role for central FP&A to debias the process. The FP&A team at one fashion company, for instance, built a simple regression analysis to understand which business units were forecasting statistically significant changes in their performance or growth trajectory. The outliers were required to provide a detailed buildup of initiatives to prove the forecast was achievable.

Once the hard work of process reengineering is done, finance teams will see a dramatic change in the value of forecasts to the business. They can use time previously spent justifying assumptions to focus on delivering new ideas for improving the performance of the business—and serving as proactive business partners.

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