Getting ahead: How CFOs can align minds and machines to reinvent forecasting

Maybe CFOs should have seen it coming: a time when the future no longer even seemed predictable. But in the wake of the COVID-19 pandemic, triggering congested supply chains and climbing inflation, some finance leaders may worry that their agility and adaptability are being put to a test. As a result, they want as much insight as possible into what might happen next.

Their concern, however, coincides with the fact that machine-powered forecasting—also known as predictive analytics—is quickly migrating from a nice-to-have productivity advantage to becoming a key capability for CFOs seeking to navigate changing market conditions and keep pace with strategic objectives.

An increasing number of companies, in fact, have invested in sophisticated forecasting tools that enable their businesses to overcome analytical bandwidth constraints. Some of those companies, however, have yet to unlock the full potential of machine-powered forecasting.[1]

What could be holding them back? In some cases, CFOs may be hampered by fragmented data, inconsistent processes, and limited reserves of talent. Or maybe finance leaders have yet to master data quality or to aggressively pursue the replacement of outdated systems.

Even CFOs who have gotten that far may overlook an entire category of issues that has less to do with acquiring the technology, and more to do with the training of those who are using it. After all, investments in financial forecasting technologies are only as strong as the trust users put in them. Recognizing such challenges—and identifying the complex dynamics underlying them—can be crucial to deploying algorithmic forecasting solutions.

In this edition of *CFO Insights*, we'll examine how CFOs and their teams can address the issues that may be preventing the business from successfully integrating machine-powered forecast technology into the financial planning and analysis (FP&A) function.

The CFO Program

Future imperfect

Today, the frequency and magnitude of disruptions companies face are putting pressure on the FP&A function to produce forecasts that are increasingly accurate and timely.[2] Modeling the combined impacts of supply-chain slowdowns and energy-price spikes, among other disruptions, can't wait until the end of the quarter. Complex questions such as these need to be answered as quickly—and accurately—as possible.

When CFOs are evaluating whether to make investments in machine-powered forecasting, they may want to consider four key questions:

1. Does the finance function currently possess the human capacity and skills required to do robust forecasting?

2. Are the business-segment leaders who are contributing to company-wide forecasts motivated primarily by accuracy—or do they have competing motivators that can undermine accuracy and/or transparency?

3. If their motivators are misaligned, how is this likely to not only impact forecasts but also drive excessive work and churn?

4. If the enterprise shifts to machine-powered forecasting, will employees embrace the machine perspective and use it to improve their forecast capability and accuracy?

The first question is probably the most straightforward to answer. The human brain didn't evolve in such a way as to be good at forecasting future events, never mind performing the complicated FP&A functions now required. Even if humans (and more of them) were naturally better at forecasting, the finance function would still face the challenge of having enough capacity to perform ever more complicated modeling and prognosticating. Manual forecasting efforts don't scale effectively, and this was true even when hiring and retaining talent were easier than they are right now. In Deloitte's 3Q 2022 *CFO Signals*™ survey, CFOs ranked talent and related challenges, such as retention, as their top internal risks.[3] (See sidebar,

"The talent challenge: Who's going to run the machines?") Artificial intelligence, machine learning, and cloud-based systems have clear advantages when it comes to integrating new information and larger volumes of existing information.

The technology liberates finance workers from the job of gathering and manipulating data into a single forecast. Instead, finance professionals are free to evaluate potential risks and then use machines to produce forecasts based on different scenarios. Unlike humans, a machine can model 10 different scenarios almost as quickly as it can model one.
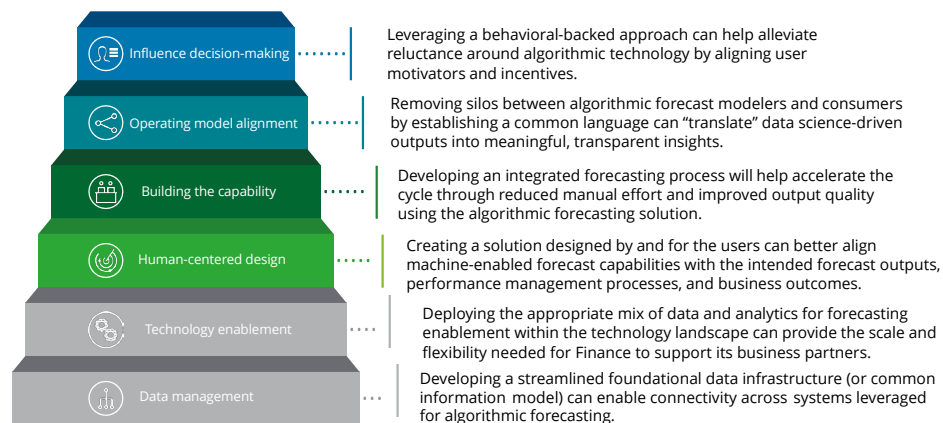
Answering the other key questions is a bit more complicated. That's because the barriers to the successful adoption of machine-powered forecasts have more to do with overcoming human behavior than clearing technological hurdles (see Figure 1).[4] Machines are not sentient beings (yet). They aren't worried about being replaced or demoted. Nor do they have self-interests that conflict with the prioritization of accuracy.

Humans' nature

Consider the following hypothetical situation described in a recent Deloitte report: Alan is a business-unit leader whose performance is measured by—and his compensation tied to—adherence to corporate standards and targets.[5] Alan's company has invested in machine-powered forecasting, and he's been asked to work with a data-scientist counterpart to craft a forecast for his unit. Problem is, the target previously set for his unit by corporate—and accepted by Alan—is too aggressive and does not align with the forecasts the machines are producing.

Is Alan going to sign off on the machine-powered forecast if it means acknowledging he's unlikely to meet the targets he's already committed to reaching? Probably not.

Instead, Alan uses his preferred manual method, one based more on gut feel, to input his target and back into the forecast. His forecast may wind up missing the mark, but in Alan's mind, that's a problem for later. He's motivated by self-preservation. In Alan's world, it's safer to just accept

Figure 1. Six barriers to adoption
What are the barriers to successful adoption and value realization with algorithmic and machine-enabled forecasting?

In our experience, addressing below six themes will enable the successful rollout of algorithmic forecasting in financial planning and analysis (FP&A) so companies can accomplish their strategic objectives and drive long-term adoption.

FP&A Algorithmic Forecasting Success Levers

Influence decision-making	Leveraging a behavioral-backed approach can help alleviate reluctance around algorithmic technology by aligning user motivators and incentives.
Operating model alignment	Removing silos between algorithmic forecast modelers and consumers by establishing a common language can "translate" data science-driven outputs into meaningful, transparent insights.
Building the capability	Developing an integrated forecasting process will help accelerate the cycle through reduced manual effort and improved output quality using the algorithmic forecasting solution.
Human-centered design	Creating a solution designed by and for the users can better align machine-enabled forecast capabilities with the intended forecast outputs, performance management processes, and business outcomes.
Technology enablement	Deploying the appropriate mix of data and analytics for forecasting enablement within the technology landscape can provide the scale and flexibility needed for Finance to support its business partners.
Data management	Developing a streamlined foundational data infrastructure (or common information model) can enable connectivity across systems leveraged for algorithmic forecasting.

Source: "Building trust in a machine-powered forecast," Deloitte Consulting LLP, 2021

the unrealistic targets. He knows it will be easier to ask forgiveness later than to ask permission now.

This mindset can undermine accurate forecasting, negatively affecting the bottom line. If Alan works for a consumer-packaged goods company, for example, overestimating demand can create excess inventory and increase carrying costs for his company.

Cultural differences

A fundamental challenge here has less to do with employees like Alan than with the corporate culture in which he operates. In employers like Alan's, it is not welcome or acceptable for business-unit leaders to communicate bad news. Alan has little incentive to argue that the targets set for him are overly optimistic because his boss might disagree. As a result, Alan may not share bad news in the most timely fashion.

Consider another scenario, this one a Deloitte client case study involving the FP&A team for a global consumer products manufacturer.[6] The company frequently outperformed its guidance to market analysts, and the team could not explain the unanticipated growth. The team suspected that sandbagging was to blame.

Sandbagging is the business practice of setting low expectations for the purpose of exceeding results. The word usually has

negative connotations and for good reason, as sandbagging may involve attempts to sway the stock market by lowballing expected earnings. When earnings beat those low expectations, the stock might get a boost.[7]

That said, the psychology behind sandbagging—specifically, the notion that it can be advantageous to underpromise and overdeliver—does not have to be nefarious. For example, a *Harvard Business Review* study found that there's a benefit to underpromising when it comes to delivery of services. Why? Customers like it when services are delivered faster than promised.[8]

Problem is, in 2022's world of lean inventories and just-in-time manufacturing, underestimating future sales in order to lower the bar for salespeople can be just as damaging as overestimating them in order to please higher-ups. Underestimating can lead to supply shortages for customers, lost sales for the company, and missed opportunities to create shareholder value. This is especially true in industries with long lead times for acquiring raw materials or ramping up new production. In the case of the global consumer products manufacturer in the case study, Deloitte data scientists created a top-down predictive model that enabled the FP&A team to deliver a more accurate, externally based forecast.

For CFOs to incorporate machine-powered forecasts into the FP&A function, they first may need to address the human challenges. Here are some ways CFOs can get their employees on board:

- **Align performance incentives with forecast accuracy**. Imagine if Alan's performance was measured by the level of variation between his forecast and actual results, instead of by adherence to targets. Alan might then use the sophisticated algorithmic forecast to inform his baseline. The use of predictive analytics becomes a win-win: Corporate has better visibility into its financial outlook, and Alan still achieves his own objective of meeting targets.[9]

- **Approach machine-powered forecasting more as a value and capacity creator than a cost saver.** Yes, there may be cost savings, especially if the machines free up finance employees to perform more valuable tasks. But the real value comes more from growing revenue and freeing up capacity, than from trimming expenses. In the consumer-goods-manufacturer case study, the externally driven forecast became a conversation starter between management and business-unit leaders about newly identified opportunities that the company could target.[10]

- **Beware of unintended consequences**. As described above, CFOs may solve one human problem by aligning compensation and performance reviews with forecast variance. But what happens if a business unit is having an unexpectedly good quarter? The business-unit leader may be motivated to slow things down—or nudge sales forward to future quarters—so as not to overshoot the revenue target that was assigned to the business-unit leader by a machine-powered forecast. The goal for CFOs and other C-suiters may be finding a balanced incentive structure, one that is not a zero-sum game when it comes to maximizing revenues versus minimizing variation from a forecast.

Another key challenge associated with machine-powered forecasting is overcoming human resistance. The machine isn't meant to replace humans, but rather to provide a starting point for finance and business teams to layer on their localized business intelligence and insight. Predictive analytics have little value if people won't use them or, even worse, if they intentionally undermine them. The future is hard enough to glimpse without human behavior obstructing the view.

The talent challenge: Who will run the machines?

For organizations seeking to invest in automated forecasting, the technical hurdles may be less daunting than the talent-related ones.[11]

A modernized finance function needs talent that is willing not only to embrace the capabilities of machine-powered forecasts but also pioneer new ideas informed by data to create and challenge historic norms and precedence. This requires an intense curiosity to better understand the business, the data it generates, and the drivers that impact strategic, financial & operational outcomes. Finance professionals need to be able to explain the predictive models they're helping to design while also constantly seeking out ways to improve the quality of the data feeding their forecasts. Finance professionals must understand the models they manage, how to improve them with high-quality data and translate the statistical findings into business decisions and a narrative that brings context and meaning. This is a very different skillset than that of many current finance professionals.

CFOs should consider the these capabilities as they pursue ways to upgrade talent:[12]

- **Traditional finance skills—plus**. As the talent model shifts to support advanced forecasting, organizations should hire and develop finance professionals with intellectual curiosity and collaborative skills. Traditional finance expertise will continue to be required to build financial statements, understand accounting principles, and drill down into transaction-level detail. However, as talent needs adapt, data expertise and data science will be paired with functional knowledge in those finance roles that support advanced analytics and decision-making. Finance talent will need to embrace a data-centric environment to test data-driven hypotheses. As integrators, finance can work across the organization to interpret, test, and execute data-driven strategies and deliver value for the enterprise.

- **Data geeks**. A stronger, more data-centric culture should exist within organizations to maintain, facilitate, and extract value from advanced modeling and forecasting. Additionally, the CFO needs to prize and reward employees who are driving data quality and data literacy as well as championing modern toolsets and processes. The finance function can be expected to integrate immense amounts of information sourced from financial, operational, and third-party data sets. Too often Finance organizations revert to Excel and old ways of working. The organizational culture should be centered around hiring and retaining individuals who have an intense curiosity to learn, connect, and interpret, as well as the base technical skills required to extract value from data.

- **Storytellers**. Machine-powered financial models and data become more sophisticated by working together with humans. Finance can play a critical role as the storytellers who translate functional finance concepts and advanced data analytics to business partners. The goal is to drive fact-based and data-driven decision-making. Business-unit leaders are turning to finance now more than ever as a trusted adviser to aid strategic decision-making. Finance talent should adjust to these demands and showcase the ability to turn large and complex data sets into actionable insights—and do so quickly and efficiently.

End notes

1   "Building trust in a machine-powered forecast," Deloitte Consulting LLP, 2021

2   Ibid.

3   CFO Signals™: 3Q 2022, US CFO Program, Deloitte LLP.

4   "Building trust in a machine-powered forecast."

5   Ibid.

6   Ibid.

7   "What is sandbagging?" Investopedia, December 30,2020; "Why gut feelings no longer fly," StrategicCFO360, 2021.

8   "When providing wait times, it pays to underpromise and overdeliver," *Harvard Business Review*, October 21, 2020.

9   "Building trust in a machine-powered forecast."

10   Ibid.

11   "A path to automated financial forecasting," Deloitte Development LLC, 2021.

12   "Automated Financial Forecasting: Upgrading Talent Models," *CFO Journal*, September 6, 2022.

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