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Transformation
Happens Here

POINT OF VIEW

Prepare for the future with forecasting: Make more informed decisions with AI-powered analytics

Across finance, operations, and supply chain, forecasting is an essential part of the planning process for commercial resilience and business growth.

Leading enterprises don't rely solely on historic and internal business data for forecasting. They're adding in external data to generate truly powerful predictive insights. By empowering employees with artificial intelligence (AI) and machine learning capabilities, they can make predictions to help their businesses thrive well into the future, even during turbulent times.

But what about the enterprises that are struggling to adapt?

Despite its importance, forecasting can be complex – especially when grappling with large volumes of data and siloed legacy systems. It's often difficult to identify the value of data across business functions, especially when traditional forecasting practices are labor-intensive.

Diving into data

Though many enterprises aspire to develop more sophisticated forecasting models, effectively selecting and harnessing the relevant data at their fingertips can prove challenging. They must first identify and gather data that is relevant to their business and then structure, clean, and label it ready for forecasting.

But this is a difficult task. International Data Corporation (IDC) predicts that global data will grow from 45 zettabytes (ZB) in 2019 to 175ZB by 2025.[1] However, only 11% of senior executives say that their companies find it very easy to extract, clean, and use relevant internal and external data, according to Genpact's AI 360 report.

The route to forecasting accuracy and optimization lies in identifying and analyzing clean, relevant data. AI is the hero technology that makes this possible. Luckily, according to AI 360, a quarter of senior executives plan to fundamentally reimagine their businesses with AI by the end of 2021.

However, this is only the tip of the iceberg. For many enterprises, an additional challenge will be using the right data to answer the most pressing questions.

As Professor Daniel Guetta, Director of the Business Analytics Initiative at Columbia Business School and Columbia Engineering, says, "Collating the data you already have across existing systems and ensuring your systems can cope with its volume and complexity is the priority. Then, you need to make sure you're clear on why you're bringing in external data." To find relevant external data sources, you need a strong understanding of what factors can influence your business.

As he explains, though weather forecasts are often cited as a useful external data source for many enterprises – in predicting demand, for example – they're not useful to everyone. "Consider how the data will help you. How does it relate to your business? This is particularly important in times of constant change."

Professor R.A. Farrokhnia, Executive Director of Advanced Projects and Applied Research in Fintech at Columbia Business School agrees. He cites the renowned British economist Ronald H. Coase, who said: "If you torture the data long enough, it will confess to anything." Instead, enterprises need to be clear on the questions they need to ask where AI and machine learning could be used to find the answers.

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"Companies that understand their own limitations – in terms of their access to data and its quality, as well as more intangible business attributes, such as innovation culture – achieve better results with forecasting. This is because they understand what they can and should forecast with a laser-like focus instead of trying to forecast everything," says Farrokhnia.

Survive and thrive

Modern forecasting models use machine learning algorithms to generate predictive insights and sound the alarm when trouble is on the horizon. The models find correlations within thousands of seemingly disparate metrics and transform them into actionable insights. Freed from manual forecasting methods and ready to act, teams responsible for forecasting can ensure they equip their enterprise to weather oncoming storms.

Though forecasting may never be able to predict global crises, such as COVID-19, it can help enterprises respond

quickly and survive their effects.

"In the past, companies would look at historical data to figure out what had happened. We've now shifted to an exciting new reality in which we can use this data to train forecasting models and predict what will happen in the future," says Guetta. "Even in the presence of inherently unpredictable events, these models can be used for stress-testing, to see what would happen in the face of certain risks. The increasing availability of real-time data also makes it possible to quickly detect changes that might render our models invalid."

Through scenario testing, teams are better equipped to make real-time decisions about their finance, supply chain, workforce, and customer experience strategies. Leveraging forecasting in the right way might even enable an enterprise to grow as others contract during times of disruption.

Forecasting to future-proof

AI-powered analytics, combined with machine learning algorithms, allow enterprises to blend numerous influential factors into forecasting models. The optimized results can then be displayed on central, accessible dashboards that empower executives to make better decisions in real-time while preparing for future events.

"With sophisticated models and simulations, companies can stress test potential events and do scenario analyses – an example may be disruption in the value chain, a factory temporarily going offline due to adverse weather, or a major surge in demand," says Farrokhnia. "No one could have predicted the full extent of COVID-19's impact on global supply chains. However, a manufacturer that had been running scenario testing through something akin to a digital twin of their enterprise, would be more prepared to withstand its impact, depending on the nuances and creativity of the assumptions that would be stress-tested."

To achieve future-proof forecasting, enterprises can follow these six steps:

1. Understand your business and its drivers. Create buyer personas to help you identify what events or disruption could impact your sales

2. Interrogate what data you have within your enterprise and what external data - such as GDP, market data, consumer reviews, and demographic trends - you can and should bring in

3. Make sure your data is properly structured, clean, and labeled

4. Identify the most beneficial questions that forecasting can answer - in other words, what are the major problems that you need to solve, or might need to solve in the future, through forecasting?

5. Bring in machine learning algorithms and AI-powered analytics to accelerate and strengthen your forecasting practices

6. Combine forecasting models with predictive analytics to stress-test different what-if scenarios

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Whether you're looking hours or years into the future, the most advanced forecasting techniques are a seamless realization of augmented intelligence. This fusion of machine intelligence and human judgment is key to achieving more informed and accurate planning decisions. And if your analytics strategy is cloud-based, you can expect greater speed, agility, and flexibility too.

Setting an example

Some enterprises are already leading the way with future-proof forecasting. Whether you're using algorithms to predict demand for new products, harnessing analytics to enhance resource allocation, or translating social media buzz into demand insights, advanced forecasting practices are boosting the bottom line.

Informed product launches
A US manufacturer of audio equipment was struggling with inaccurate demand forecasts, leading to losses, high inventory costs, and write-offs. When launching a new

product, the manufacturer transformed its forecasting capabilities with AI and machine learning algorithms. It incorporated new external data points – such as product reviews, promotions, and web visits – to predict customer demand. Able to react in real-time to these early signals, the enterprise improved forecasting by 40% to manage inventory levels more effectively.

Enhanced resource allocation

A pharmaceuticals enterprise has transformed cash-flow forecasting into a suite of predictive analytics models to consolidate accounts receivable and accounts payable insights. This gives the finance team a view of expected future events – such as seasonal fluctuations – that drive cash requirements. This visibility empowered the workforce to make better decisions on short- and long-term resource allocation.

Data-driven demand

A luxury cosmetic company had a limited understanding of the macroeconomic factors that drive demand, resulting in lost sales, stockouts, and poor customer experience. A sophisticated demand forecasting model needed to incorporate fluctuating data points – for example, the impact of a leading social media influencer promoting one of its products. The new and improved model incorporated

15 different data sources, including an innovative customized social media buzz index, to achieve a 30% improvement in overall demand forecast accuracy.

Connect, predict, adapt

Forecasting is a critical part of effective business planning across every industry, whether predicting demand, allocating financial resources, or testing resilience against potential crises. Enterprises that connect data and dissolve silos through digital transformation will reap serious rewards.

Ultimately, the ability to identify patterns in data and act accordingly is vital. As Farrokhnia says, "Good forecasting is forecasting that turns out to be right. It needs ongoing and continuous experimentation and optimization to get as close as one can to that objective over time." With this approach, leaders can use forecasting to connect operations, predict disruption, and adapt to whatever challenges the future holds.

[1]https://www.seagate.com/files/www-content/our-story/trends/files/dataage-idc-report-final.pdf

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